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EXPLORING SCHOOL SAFETY IN PUBLIC SECONDARY SCHOOLS IN THE GAUTENG PROVINCE

by

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DECLARATION

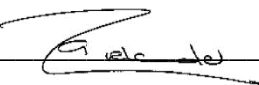Name: Cheryl Lin Rielander

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EXPLORING SCHOOL SAFETY IN PUBLIC SECONDARY SCHOOLS IN THE GAUTENG PROVINCE

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My apologies to anyone I may have omitted.

Thank you.

ABSTRACT

The purpose of the study was to explore the legal imperative of the Occupational Health and Safety (OHS) Act No. 85 of 1993 and the South African Schools Act (SASA) No. 84 of 1996. The study set out to determine the nature and extent of the implementation of occupational school safety and the literature review examined both international and South African perspectives on the implementation of school safety. The OHS Act No. 85 of 1993 was discussed and linked to a school context, as well as exploring the legal safety imperative of the SASA No. 84 of 1996.

The study followed an exploratory sequential mixed method design using a non-probability, homogeneous convenience, and purposive sample from a selection of public secondary public schools within the Gauteng Province. The study was divided in two phases, where the first qualitative phase utilised an interview guide and the second quantitative phase consisted of a structured, self-completing questionnaire to determine participants' knowledge and compliance to the OHS Act No. 85 of 1993.

School safety in South African schools falls under the auspices of the SASA No. 84 of 1996, with an emphasis on security safety. Data analysis found that occupational safety was not implemented to the letter of the law as prescribed by the OHS Act No. 85 of 1993, and was not at an optimum level of implementation and management. In fact, school management and educators regard occupational school safety as a burden, an additional task, and not their responsibility.

An objective of the study was to develop a school safety management plan (SSMP) and framework (SSMF). The school safety management framework (SSMF) was based on three stages and 12 building blocks, namely, six primary and six supporting building blocks. The proposed school safety management plan (SSMP) and framework (SSMF) aim to assist the Department of Basic Education (DBE), the Gauteng Department of Education (GDE), school governing bodies, school managers and educators to achieve legislated occupational school safety, as prescribed by the OHS Act No. 85 of 1993 and supporting regulations. The researcher is confident that the SSMF and SSMP will add value to the strategic plans of the DBE and the GDE to ensure effective and continuous school safety, and to improve the quality of school life for every scholar, educator, stakeholder and role-player.

Keywords:

KGUTSUFATSO

Sepheo sa phuputso e ne e le ho hlahloba ka hloko taelo e lokelang ho hlomphuwa le ho phethahatswa ho ya ka tshwanelo ya Molao wa 85 wa selemo sa 1993 wa Bophelo le Polokeho ya batho Mosebetsing (OHS) le Molao wa 84 wa selemo sa 1996 wa Dikolo tsa Aforika Borwa (SASA). Phuputso e etsetswa ho tseba ka bohlokwa le boholo boo polokeho e fumantshwang ka bona dikolong mme tlhahlobo ya dingolwa tsa bangodi ba bang e shebile mehopolo ya dinaha tsa matjhabeng le ya Aforika Borwa ka phumantsho ya polokeho dikolong. Molao wa 85 wa selemo sa 1993 wa OHS o tshohlilwe le ho amahangwa le maemo a dikolo, mmoho le ho hlahloba taelo e lokelang ho hlomphuwa le ho phethahatswa ka hloko ya polokeho, ya Molao wa 84 wa selemo sa 1996 wa SASA.

Phuputso e entswe ho sebediswa mekgwa e kopantseng mohato wa pokeletso le tlhahlobo ya datha ya dinomoro, o etswang ka mora hoba ho sebediswe mohato wa pokeletso le tlhahlobo ya datha e ngotsweng, ya ditshwantsho le diketsahalo, ho sebediswa mokgwa wa ho nka disampole moo mofuputsi a kgethang disampole ho ya ka maikutlo a hae ho na le ho kgetha feela, le ho nka sampole bathong ba tshwanang ka dintho tse itseng, dikolong tse itseng tsa mmuso tsa sekondari, Porovenseng ya Gauteng. Phuputso e arotswe ka mehato e mmedi, moo mohato wa pele wa datha e ngotsweng, ya ditshwantsho le diketsahalo o sebedisitseng lenane la dipotso tse hlophiseditsweng inthaviu ho tataisa mofuputsi ha a botsa bafuputswa dipotso le ho ba fa dikgetho tsa dikarabo, ha mohato wa bobedi wa datha ya dinomoro o ne o na le lenanepotso le hlophisitsweng leo bankakarolo ba itlatsetsang lona ho fumana tsebo le hore ba phethahatsa ho ya ka Molao wa 85 wa selemo sa 1993 wa OHS.

Polokeho dikolong tsa Aforika Borwa e wela tlasa Molao wa 84 wa selemo sa 1996 wa SASA, ho tobokeditswe polokeho ya dikolong. Tlhahlobong ya datha ho fumanwe hore polokeho mosebetsing ha e a etswa ho ya ka molao jwalo ka ha ho boletswe Molaong wa 85 wa selemo sa 1993 wa OHS, le hore e ne e se boemong bo hodimo ka ho fetisisa ho ka fihlelwa le ho laolwa. Nnete ke hore, botsamaisi ba sekolo le matitjhere ba bona polokeho dikolong e le morwalo, mosebetsi o mongata ebile e se boikarabelo ba bona.

Sepheo sa phuputso e ne e le ho etsa moralo wa taolo ya polokeho dikolong (SSMP) le moralotshebediso ya oona (SSMF). Moralotshebediso wa taolo ya polokeho

dikolong (SSMF0 o ne o tshetlehilwe dikgatong tse tharo le metheong e 12, e leng, metheo e tsheletseng ya mantlha le e tsheletseng ya tshehetso. Sepheo sa moralo o sisintsweng wa taolo ya polokeho dikolong (SSMP) le moralotshebediso ya oona (SSMF) ke ho thusa Lefapha la Thuto ya Motheo (DBE), Lefapha la Thuto la Gauteng (GDE), mekgatlo e laolang tsamaiso dikolong, batsamaisi ba dikolo le matitjhere ho fihlela boemo bo behilweng molaong ba polokeho dikolong, jwalo ka ha ho boletswe Molaong wa 85 wa selemo sa 1993 wa OHS le melawana e o tshehetsang. Mofuputsi o na le tshepo ya hore SSMF le SSMP di tla ba bohlokwa meralong ya mawa a DBE le GDE ho netefatsa polokeho e ntle le e tswelang pele ho etswa boemong bo phahameng dikolong, le ho ntlafatsa boemo ba bophelo ba moithuti, titjhere, mothahaselli le motho e mong le e mong ya bapalang karolo e itseng sekolong.

Phuputso e hlahisa bopaki ba hore ho na le papiso kapa kamano e nyane ho isa ho e siyo ho hang, pakeng tsa Molao wa 85 wa selemo sa 1993 wa OHS le Molao wa 84 wa selemo sa 1996 wa SASA. Hantlentle, melao ena e mmedi ya bohlokwa ha e kopane ho ba taelo e le nngwe ya semmuso ya polokeho. Tlhahlobo ya datha e bontshitse hore batsamaisi ba dikolo le matitjhere ha ba nke polokeho e behilweng molaong e le boikarabelo ba bona ba le bang empa ba nka e le ba motho ya hiretsweng bokgoni ba ho etsa hore ho be le polokeho. Ho sisinywa hore DBE, jwalo ka moetsamolao, e kenyeletse ditlhoko tsa Molao wa 85 wa selemo sa 1993 wa OHS Molaong wa 84 wa selemo sa 1996 wa SASA, kapa bonyane e bolele ha kgutshwanyane ka ditlhoko tsa Molao wa 85 wa selemo sa 1993 wa OHS le ho kenyeletsa polokeho moralong wa yona wa ntshetsopele ya dikolo, moralong wa taolo ya mawa a DBE le moralong wa dintho tseo DBE e rerang ho di etsa.

Phuputso e tswela pele ho sisinya dikarolo tseo patlisiso e lokelang ho ntshetswa pele ho tsona tse amanang le dikarolo tse ding hape tse amang polokeho dikolong.

Mantswe a ka sehloohong:

Lefapha la Thuto ya Motheo (DBE); Moralotshebediso wa Naha wa Polokeho Dikolong (NSSF); Bophelo le polokeho ya batho mosebetsing (OHS); Molao wa 85 wa selemo sa 1993 wa Bophelo le Polokeho ya batho Mosebetsing (OHS); Molao wa 84 wa selemo sa 1996 wa Dikolo tsa Aforika Borwa (SASA); Polokeho ya dikolo; Moralo wa

Taolo ya Polokeho Dikolong (SSMP); Moralotshebediso wa Taolo ya Polokeho Dikolong.

OKUCASHUNIWE

Inhloso yocwaningo bekuwukuhlola ukubaluleka okusemthethweni koMthetho Wezempilo Nokuphepha Emsebenzini (OHS) onguNombolo 85 ka-1993 kanye noMthetho Wezikole zaseNingizimu Afrika (SASA) onguNombolo 84 ka-1996. Ucwaningo lwaluhlose ukunquma uhlobo kanye nezinga lokuqaliswa kokuphepha kwezikole emsebenzini kanye nokubuyekezwa kwemibhalo kuhlole imibono yamazwe ngamazwe neyaseNingizimu Afrika mayelana nokuqaliswa kokuphepha kwezikole. UMthetho we-OHS onguNombolo 85 ka-1993 kwaxoxwa ngawo futhi waxhunyaniswa nesimo sesikole, kanye nokuhlola ukubaluleka kokuphepha kwezomthetho kwe-SASA onguNombolo 84 ka-1996.

Ucwaningo lulandele indlela exubile elandelanayo yokuhlola kusetshenziswa okungalindelekile, ukusebenziseka okufanayo, kanye nesampula ehlosiwe evela ezikoleni ezikhethiwe zikahulumeni zamabanga aphezulu esiFundazweni saseGauteng. Ucwaningo lwehlukaniswe izigaba ezimbili, lapho isigaba sokuqala sokuqoqa nokuhlaziya imininingwane engezona izinombolo sasebenzisa umhlahlandlela wenhlolokhono kanti isigaba sesibili sokuqoqo nokuhlaziya izinombolo sasihlanganisa uhlu lwemibuzo oluhlelekile, oluzigcwalisela lona ukuze kunqunywe ulwazi lwabahlanganyeli kanye nokuhambisana noMthetho we-OHS onguNombolo 85 ka-1993.

Ukuphepha kwezikole ezikoleni zaseNingizimu Afrika kungaphansi kwe-SASA onguNombolo 84 ka-1996, kugcizelelwa ukuphepha kwezokuphepha. Ukuhlaziywa kwemininingwane kwathola ukuthi ukuphepha emsebenzini akuzange kusetshenziswe ngokomthetho njengoba kunqunywe nguMthetho we-OHS onguNombolo 85 ka-1993, futhi kwakungekho ezingeni eliphezulu kakhulu lokusetshenziswa nokuphatha. Eqinisweni, abaphathi besikole nothisha babheka ukuphepha kwesikole njengomthwalo, umsebenzi owengeziwe, hhayi isibophezelo sabo.

Inhloso yocwaningo kwakuwukwenza uhlelo lokuphatha ukuphepha kwesikole (SSMP) kanye nohlaka (SSMF). Uhlaka lokuphatha ukuphepha kwezikole (SSMF) belusekelwe ezigabeni ezintathu namabhulogo okwakha ayi-12, okungukuthi,

amabhulogo okwakha ayinhloko ayisithupha kanye nayisithupha ayisisekelo. Uhlelo oluhlongozwayo lokuphatha ukuphepha kwezikole (SSMP) kanye nohlaka (SSMF) kuhloswe ngalo ukusiza uMnyango Wezemfundo Eyisisekelo (DBE), uMnyango wezeMfundo waseGauteng (GDE), izigungu ezilawula izikole, abaphathi bezikole kanye nothisha ukuze kuzuzwe ukuphepha ezikoleni okusemthethweni, njengoba kubekwe nguMthetho we-OHS onguNombolo 85 ka-1993 kanye nemithethonqubo esekelayo. Umcwaningi unethemba lokuthi i-SSMF ne-SSMP zizokwengeza ukubaluleka ezinhlelweni zamasu ze-DBE kanye ne-GDE ukuze kuqinisekiswe ukuphepha kwesikole okuphumelelayo nokuqhubekayo, kanye nokwenza ngcono izinga lempilo yesikole yawo wonke umfundi, uthisha, ababambiqhaza nababambe iqhaza.

Kusobala ocwaningweni ukuthi akukho ukuqhathanisa noma ubudlelwano obuncane phakathi koMthetho onguNombolo 85 ka-1993, kanye noMthetho we-SASA onguNombolo 84 ka-1996. Eqinisweni, le mithetho emibili ebalulekile yomthetho ayihlangani njengesimemezelo esisodwa sokuphepha esiphelele. Ukuhlaziywa kweminingwane kubonise ukuthi abaphathi bezikole nothisha abakubheki ukuphepha okusemthethweni njengesibophezelo sabo kuphela kodwa njengowomuntu oqokiwe onekhono lokuphepha. Kuphakanyiswa ukuthi i-DBE, njengesishayamthetho esengamele, ifake izidingo zoMthetho we-OHS onguNombolo 85 ka-1993 ku-SASA onguNombolo 84 ka- 1996 noma okungenani ibhekisele ezidingweni zomthetho onguMthetho we-OHS onguNombolo 85 ka-1993 kanye nokufaka ukuphepha ohlelweni lwayo lokuthuthukiswa kwezikole, isu lokuphatha amasu e-DBE, kanye nohlelo lokusebenza lwe-DBE.

Lolu cwaningo luphinde lwenze iziphakamiso ngezindawo zocwaningo olwengeziwe oluhlobene nobubanzi obubanzi bokuphepha kwezikole emsebenzini.

Amagama asemqoka:

uMnyango Wezemfundo Eyisisekelo, Uhlaka lokuphatha ukuphepha kaZwelonke, Ukuphepha Kwezempilo Emsebenzini, uMthetho onguNombolo 85 ka-1993 wokuphepha Kwezempilo Emsebenzini, uMthetho onguNombolo 84 ka-1996 weZikole zaseNingizimu Afrika, Ukuphepha kweZikole, Uhlelo lokuPhatha ukuPhepha kweZikole, Uhlaka lokuPhatha ukuPhepha kweZikole.

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ANOVA	One-way Analysis of Variance
ASRs	Asbestos Regulations
ASW	Australia student wellbeing
ASWF	Australian Student Wellbeing Framework
BRICS	Brazil, Russia, India, China, and South Africa
CEMS	College of Economic and Management Sciences
CFR	Codes of Federal Regulation
CFR	Codes of Federal Regulation
CoC	Certificate of Competency
COIDA	Compensation for Occupational Injuries and Disease Act
COVID-19	Coronaviridae
CRs	Construction Regulations
CSSF	Comprehensive School Safety Framework
dBA	Decibel
DBE	Department of Basic Education
DHET	Department of Higher Education
DoH	Department of Health
DoL	Department of Labour
DPSA	Department of Public Service and Administration
DSO	Designated School Official
EFA	Exploratory Factor Analysis
EHS	Environmental Health and Safety
ERs	Ergonomics Regulations
ERsW	Environmental Regulations for Workplaces
FCSS	Federal Commission on School Safety

FET	Further Education and Training
FRs	Facilities Regulations
GARs	General Administrative Regulations
GDE	Gauteng Department of Education
GDEAPP	Gauteng Department of Education's Annual Performance Plan
GET	General Education and Training
GMRs	General Machine Regulations
GN	General Notice
GNR	General Notice Regulation
GoC	Government of Canada
GoI	Government of India
GPSS	Global Program for Safer Schools
GSI	Global School Initiative
GSLs	General Service Lamps
GSRs	General Safety Regulations
H&S	Health and Safety
HCS	Hazardous Chemical Substance
HCSRs	Hazardous Chemical Substance Regulations
HEWS	Hlayiseka Early Warning System
HIRA	Hazard Identification and Risk Assessment
HoD	Head of Department
HRSDC	Human Resources and Skills Development Canada
HSA	Health and Safety Authority
HSE	Health and Safety Executive
HSWA	Health and Safety at Work etc. Act
ILO	International Labour Organisation
ISO	International Organisation for Standardization

MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth to the Australian Affairs
MDGs	Millennium Development Goals
MEC	Member of the Executive Committee
Mg/m^3	Milligrams per cubic meter
MHIRs	Major Hazardous Installations Regulations
MHSD	Ministry of Health and Social Development
NBR	National Building Regulations
NDoH	National Department of Health
NDP	National Development Plan
NEMA	National Environmental Management Act
NEPA	National Education Policy Act
NIHR	Noise Induced Hearing Loss
NIHLRs	Noise Induced Hearing Loss Regulations
NIOH	National Institute for Occupational Health
NIOSH	National Institute for Occupational Safety and Health
NPSHEW	National Policy on Safety Health, Environment at Workplace
NQF	National Qualifications Framework
NRIOD	National Research Institute for Occupational Disease
NSC	National Senior Certificate
NSSC	National School Safety Centre
NSSF	National School Safety Framework
NSSFA	National Safe Schools Framework of Australia
NSSS	National School Safety and Security Service
OCSA	Occupational Care of South Africa
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit

OHS	Occupational Health and Safety
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OSHAS	Occupational Safety and Health Assessment Series
PDCA	Plan-Do-Check-Act
PERs	Pressure Equipment Regulations
POPI	Promotion of Personal Information
PPE	Personal Protective Equipment
QCTO	Quality Council for Trades and Occupations
RSA	Republic of South Africa
RsHBAs	Regulations for Hazardous Biological Agents
RsHCSs	Regulations for Hazardous Chemical Substances
RTE	Right to Education
SA	South Africa
SABS	South African Bureau of Standards
SACE	South African Council for Educators
SAHRC	South African Human Rights Commission
SAIOSH	South African Institute for Occupational Safety and Health
SAMHSA	Substance Abuse and Mental Health Service Administration
SANS	South African National Standards
SAPS	South African Police Service
SAQA	South African Qualifications Authority
SASA	South African Schools Act
SAWS	State Administration of Workplace Safety
SDGs	Sustainable Development Goals
SDS	Safety Data Sheet
SGBs	School Governing Bodies

SHE	Safety, Health and Environment
SHERQ	Safety, Health, Environment, Risk and Quality
SME	Small and Medium Enterprises
SMS	Safety Management System
SMTs	School Management Teams
SOP	Standard Operating Procedure
SPSS	Statistical Package for the Social Sciences
SSAF	School Safety Action Framework
SS/HS	Safe Schools/Healthy Student
SS/HSF	Safe Schools/Healthy Student Framework
SSF	School Safety Framework
SSFIT	Safe Schools Framework Implementation Toolkit
SSMF	School Safety Management Framework
SSMP	School Safety Management Plan
SSMS	School Safety Management System
SSPs	Safe Schools' Programmes
SSS	School Stakeholder Satisfaction
SSSMP	Schools System Safety Management Plan
TALIS	Teaching and Learning International Survey
TQM	Total Quality Management
TWB	The World Bank
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
UNICEF	United Nations Children's Fund
UNISA	University of South Africa
USA	United States of America

VC	Vernier Constant
WHO	World Health Organization
WHSA	Workplace Health and Safety Act
WISS	World-wide Initiative for Safe School

CHAPTER 1:
INTRODUCTION AND BACKGROUND

CHAPTER 1. OVERVIEW

- INTRODUCTION
- BACKGROUND TO THE STUDY
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- LITERATURE REVIEW
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- CONCLUSION

1.1   INTRODUCTION

South Africa has over 26 000 schools where children need the support of a safe, secure and protective school environment (Schools4sa, n.d.). The purpose of schooling is to ensure a productive learning experience that allows children to thrive and develop healthy behaviour. It is globally accepted that children have the fundamental right to safe schooling, and that they should be provided with a holistic caring environment, where they feel both physically and emotionally safe and secure (Chitsamatanga, 2020). More and more scholars are being exposed to unsafe environments, one such example is the collapse of a school bridge at a Vanderbijlpark high school in February 2019.

This chapter provides an overview of the legislative requirements imposed by the South African government, as legislated by the Occupational Health and Safety (OHS) Act No. 85 of 1993, the South African Schools Act (SASA) No. 84 of 1996 and the National School Safety Framework (NSSF). The chapter begins by outlining the background and significance of the study, listing important safety definitions and providing an overview of the literature review. The research problem, research objectives and hypotheses are stated, followed by an overview of the research design and methodology, research philosophy and approach. An overview of the data collection is followed by data analysis, validity, and reliability, as well as delimitations and limitations. The chapter concludes with ethical considerations and a chapter outline. The next section presents a discussion of the background to the study.

1.2   BACKGROUND TO THE STUDY

The school environment is affected by its physical and social environment, as well as being affected by the individual emotional capabilities of the teachers, and the scholars' interaction with one another. A person feeling threatened and unsafe tends to withdraw from that environment. A scholar has the same reaction when feeling insecure and unsafe while at school. In many cases, the scholar portrays avoidance behaviour by bunking school and/or dropping out of school (DBE, 2018c).

According to Themane and Osher (2014:3), school safety has three components related to safety, namely, physical, emotional, and intellectual safety, which involve a protective and caring environment. The OHS Act No. 85 of 1993 defines the term 'safe'

as being free from any hazard. Safety is thus a state of feeling safe and free from the risk of injury (RSA, 1993b:8; Lexis Nexis, 2017:8, 2021:9). Physical safety is described as the physical well-being of a person in relation to food, water, sleep and the absence of physical and environmental hazards. Emotional safety is described as the feeling of belonging, feeling loved and free of feelings of embarrassment, stigmatisation, bullying, harassment, and other forms of humiliation. Intellectual safety refers to feelings of academic comfort and feelings of success (Themane & Osher, 2014:3, 2017:38).

The term 'safety' includes both actual and perceived hazards and risks that are experienced differently by individuals. The individual feeling of safety being experienced can be affected by the extent to which the individual views him-/herself as a member of a specific community, which is also applicable to the school environment (Themane & Osher, 2014:3). A safe school is described by Themane (2017:38) as an environment that is characterised by a healthy setting that is free of risk and unsafe conditions.

The OHS Act No. 85 of 1993 and the safety regulations set out the legal requirements for employers regarding the implementation and management of safety. Employers are required to assess their risks, as legislated in section 8 of the OHS Act No. 85 of 1993, as well as in certain safety regulations, which guide the employer to assess potential exposures (RSA, 1993b:9-10; Lexis Nexis, 2020:10).

The South African Department of Basic Education (DBE) is responsible for ensuring the safety of educators and scholars throughout the school calendar year, and has to ensure a safe school environment at all levels of education. The SASA No. 84 of 1996 sets out laws for the governing of schools, and recognises that the legislative system is required to support the rights of scholars, educators and parents. It also sets out the roles and responsibilities of educators (DBE, 1996:23; RSA, 2011:2).

In 2015, the DBE issued a standard for safety in schools in the form of the National School Safety Framework (NSSF) (DBE, 2016b:3). Scholars are increasingly faced with serious physical safety risks due to the rise in incidents within the classroom and on school premises where injuries occur on a daily basis. The DBE has committed itself to preventing and managing safety incidents in schools through the NSSF, as well as creating a safe and supportive learning environment (DBE, 1996:13; RSA,

1996a:13). A holistic approach, which incorporates a thorough knowledge of the school environment and basic school safety, is required to ensure school safety (Xaba, 2006:567, 2014:1). Moreover, the focus needs to be placed on school safety risk assessments (Boatman, 2018).

A research study by Van Jaarsveld (2011:1) that investigated safety and security measures at secondary schools in Tshwane (Pretoria), found that the focus was on security aspects with a fragmented focus on safety, which was linked to violence. Further research conducted by Mamogale (2011:123) on disaster management in training and education centres in Africa, assessed the degree of disaster preparedness of educators and scholars in Soshanguve (Tshwane). Mamogale (2011:123) reached the conclusion that disaster preparedness should be included in the school curriculum, as disaster management is regarded as an aspect of safety. In identifying safety, both these studies outlined safety as a concern and a gap in the literature.

The reviewed literature, as well as legislation, namely, the OHS Act No. 85 of 1993 (RSA, 1993b) and the SASA No. 84 of 1996 (DBE, 1996; RSA, 1996b) show no consensus related to the physical aspects of school safety. There is evidently a clear need for further research related to school safety in South Africa in relation to the legislative imperative of the OHS Act No. 85 of 1993.

The purpose of the current study was to determine whether problems regarding occupational safety exist in schools by investigating legislated safety characteristics (knowledge and compliance) through a mixed method research approach. The study investigated the physical occupational safety aspects within a school environment as prescribed by the OHS Act No. 85 of 1993, and not aspects of bullying and violence that are outlined as school safety in the SASA No. 84 of 1996.

1.3   KEY SCHOOL SAFETY CONCEPTS

The following essential definitions have been used in the study:

Danger

Danger is defined in the OHS Act No. 85 of 1993 as anything that could result in injury to a scholar or damage to school property, where anything is a physical concept that may result in the likelihood of injury or damage (RSA, 1993b:3; Lexis Nexis, 2021:7).

Educator

The Employment of Educators Act No. 76 of 1998 uses the term 'educator' as a person that educates and trains other people and renders a professional and educational management service provided within the Department of Education environment. It defines an employer as the head of a department (RSA, 1998: Prinsloo, 2015:211-212). Within a school context, the employer is the Minister of Basic Education, and in accordance with the OHS Act No. 85 of 1993, is assigned a section 16(1) appointment as the Chief Executive Officer (CEO) (Lexis Nexis, 2021:11).

Disseminating from this legal appointment, the Minister of Basic Education can delegate specific responsibilities, as prescribed in section 16(2) of the OHS Act No. 85 of 1993 (Lexis Nexis, 2017:11) to the Minister of the DBE, school district director and school principals. However, the Minister of Basic Education remains accountable in terms of the OHS Act No. 85 of 1993 to the Minister of the Department of Labour (DoL), as custodian of OHS (DoL, 2018). Along similar lines, a school principal is an employee of the DBE.

Employer

An employer is a person who employs or provides work to another person. In terms of the OHS Act No. 85 of 1993, a school principal is an employer, as educators are viewed under the legal prescript of the school principal as the employer (RSA, 1993b:3, 1998; Prinsloo, 2015:212). The general duties of employers (school principals) to employees (educators and other staff members) are outlined in section 8 of the OHS Act No. 85 of 1993 (RSA, 1993b:7; Lexis Nexis, 2021:7, 10).

Employee

An employee is a person that works for an employer and who receives remuneration for the work conducted (RSA, 1993b:4; Lexis Nexis, 2021:7). The Labour Relations Act No. 66 of 1995 (RSA, 1995:1), as amended by the Labour Relations Amendment Act No. 6 of 2014 (RSA, 2014:1), describes an employee as a person (educator) who works for another person. As such, all educators are employees (RSA, 2014; Israelstam, 2018).

Souls (2005:44) outlined the responsibility of an educator's (employee's) duty in relation to the position occupied by a specific educator, and stated further that

everyone has a responsibility to sustain a safe school environment, inclusive of the school governing bodies (SGBs). Nevertheless, the school principal remains the driving force regarding the implementation of safety at school (SACE, 2020:7).

Hazard

A hazard is defined as a source of exposure to danger that could result in injury to a scholar or damage to school property (RSA, 1993b:4; Lexis Nexis, 2021:8).

Healthy

The term 'healthy' is defined as being free from illness or injury as a result of hazards and dangers within the school environment (RSA, 1993b:4; Lexis Nexis, 2021:8).

Grade

Level of educational programme completed by a learner/scholar in one school calendar year.

Governing body

Member appointed to manage aspects of the school as contemplated in terms of section 16(1) of the OHS Act No. 85 of 1993.

Learner/Scholar

Person receiving education/training in terms of the SASA No. 84 of 1996.

Occupational safety

As defined in the OHS Act No. 85 of 1993, safe is being free from hazards, risks, and a state of feeling safe (RSA, 1993b:8; Lexis Nexis, 2017:8). Occupational safety is used in the current study to distinguish between the general use of the term 'safety', as used in the research, and that of safety, as implied in the OHS Act No. 85 of 1993. In relation to the SASA No. 84 of 1996, safety is implied as security safety, hence, the term 'occupational safety' is used to distinguish between general safety and school security safety in the study.

Occupational school safety

In relation to the OHS Act No. 85 of 1933 (RSA, 1993b:8), safe has been defined as being free from any hazard and a state of feeling safe and free from risk of injury. A safe school is defined as an environment that is physically and psychologically safe, without the fear of personal incidents, accidents, and/or injury (DBE, 1998, 2018b).

For the purpose of the current study, the researcher used the term 'occupational school safety' when referencing safety in relation to the OHS Act No. 85 of 1933. The researcher defined occupational school safety as a safe school working environment, where educators teach and scholars learn without the risk of harm or injury.

Public school

A public school is defined by the South African Schools Act (SASA) No. 84 of 1996 as an ordinary school managed and funded by the South African government (state) to provide education and teaching to all South African school-going children. Public schools are dependent on the government for funding and supplies, and are managed and controlled by the DBE (DBE, 1996:5, 13). The DBE distinguishes between two levels of schooling, namely, General Education and Training (GET) which extends from Grade R (pre-school) to Grade 9, and Further Education and Training (FET) which extends from Grade 10 to 12 (DBE, 1996:13).

Risk

Risk is the probability of injury and is a consequence or effect of uncertainty. It is a combination of the probability of a risk event taking place and the consequence thereof (RSA, 1993b:8; Lexis Nexis, 2021:19). The South African Bureau of Standards (SABS) (2009:1; 2019:1) defines risk as the consequence or effect of uncertainty. The Institute of Risk Management (IRM) considers the risk to be a combination of the probability of a risk event taking place and the consequence thereof (IRM, 2010:4).

Risk assessment

A risk assessment is a systematic process used to determine potential risks that may arise in the workplace. It is a means of identifying hazards, and risks that could result in harm, damage and/or injury (Lexis Nexis, 2021:9, 181). A risk assessment is a deliberate, planned, formal, and systematic process to identify hazards, calculate risk, and implement control measures (RSA, 1993b; Lexis Nexis, 2017:9; Darlow & Louw, 2004:12). Rielander (2016:168) stated that a risk assessment should be conducted in a professional and logical manner to identify hazards, calculate risk, and implement control measures.

Every school should have a risk assessment plan, as required by section 8(2)(d) of the OHS Act No. 85 of 1993. The researcher supports the concept of a risk

assessment to empower educators and scholars to develop safety skills through their leadership roles. This will create an environment suitable for teamwork in school management to ensure that all aspects of the OHS Act No. 85 of 1993 are adhered to.

Safe

The OHS Act No. 85 of 1993 defines the term 'safe' as being free from any hazard. It is a state of feeling safe and free from risk of injury (RSA, 1993b:8; Lexis Nexis, 2021:9).

Safety

The OHS Act No. 85 of 1993 defines safe as being free from any hazard and a state of feeling safe and free from the risk of injury (RSA, 1993b:8; Lexis Nexis, 2020:9). Safety includes both actual and perceived hazards and risks that are experienced differently by individuals. There are different types of safety, such as physical safety, emotional safety and intellectual safety, as discussed in Section 1.2 (Themane & Osher, 2014:3; 2017:38).

According to Collins (2017), safety should be about living and learning through risks, keeping oneself and others free from harm (physical injury, ill-health, or damage inflicted on a person and/or the environment) or danger, taking care not to fall or bump into items, and to avoid accidents by being careful. Furthermore, Collins (2017) revealed that safety is a complex phenomenon that cannot be fixed by simple solutions but rather through gaining an understanding of the risk(s) in an organisation. Safety of these risks is a feeling, a physical object or place, and even an action, which can be personal and animate or inanimate in an environment where people live or work (Collins, 2017).

School

A public/independent school that enrolls learners/ scholars in a grade ranging from Grade R to Grade 12.

Safe schools and school safety

A safe school is defined as a school environment that is physically and psychologically safe, without the fear of personal incidents, accidents, and/or injury. It allows educators and scholars to work and learn in a safe school environment without the fear of personal incidents, accidents, and/or injury (physical safety), bullying, harassment,

stigmatisation, or other forms of humiliation (emotional safety). A feeling of safety and support enhances one's academic success (intellectual safety) (Masitsa, 2011:165).

School safety is defined as ensuring the safety of scholars. It is the protection of scholars during all types of school activities to avoid injury and harm (DBE, 2017a). School safety in South Africa refers to a school environment that is physically safe and free of hazards and dangers, and that is drug- and weapon-free. It is inclusive of an environment that is psychologically safe to enhance teaching and learning (DBE, 2021). The South African Schools Act (SASA) No. 84 of 1996 views safety in a school in the context of violence, bullying, drug testing, and security safety (DBE, 2016b:2). The definition of safety in relation to school safety is explored in Chapter 3 of this study.

For the purpose of the current study, a safe school was defined as an environment that is physically and psychologically safe, allowing educators and scholars to work and learn in a safe environment, without fear of personal incident, accident, and/or injury. In addition to the definition, the research added the aspects of an environment that is free of hazards and dangers to enable a harmonious, carefree and safe learning environment. Therefore, the current study defines school safety in South Africa as a school environment that is physically safe and free of hazards and dangers, inclusive of an environment that is psychologically safe to enhance teaching and learning.

Scholar

A scholar is referred to as a learner. A learner is defined as a person receiving education or that is obligated to receive education in terms of the provisions of the SASA No. 84 of 1996. The SASA No. 84 of 1996 refers to a scholar (learner) as a person between the ages of five and 18 years who goes to school (DBE, 1996:5). For the purpose of the current study, the term scholar was used interchangeably with learner.

Secondary school

Secondary schools refer to scholars in grades 8 and 9, which form part of the senior phase, whilst grades 10 to 12 mark the beginning of the Further Education and Training (FET) phase. To the public, a secondary school is referred to as a high school (DBE, 2017a).

Section 8(1) of the OHS Act No. 85 of 1993 requires that every school principal, as an employer, maintains a school environment that is safe and without risk to the health of persons. Section 8(2) of the OHS Act No. 85 of 1993 lists various duties and responsibilities of the school principal (employer), such as ensuring and maintaining the classroom environment to be safe and without risk to the health of educators and scholars. These duties require taking steps to eliminate and mitigate any hazard and/or potential hazard that may affect the health and safety of educators in the workplace (Darlow & Louw, 2004:12; RSA, 1993b; Lexis Nexis, 2021:9).

Souls (2005:65) claimed that it is the responsibility of the school principal to ensure the effective management and maintenance of school buildings, inclusive of ventilation, lighting in classrooms, and other facilities that are in working order and should be sufficient for the purpose(s) intended (SACE, 2020:13). The next section outlines the significance of the current study.

1.4   SIGNIFICANCE OF THE STUDY

The increasing number of school tragedies occurring in South African schools has become a matter of concern for parents, educators and the South African public. One such incident occurred in February 2019 where a walkway collapsed at a secondary school in Vanderbijlpark, Gauteng Province (Mooki, 2019). A report by Selepe (2019) addressed the concern of similar incidents at other schools across South Africa, where schools have been shut down due to unsafe buildings.

A review of the legislative requirements related to occupational safety, and the various unsafe school events that have occurred have led the researcher in the current study to believe there is a gap in the literature regarding the legislated safety aspects as required by the OHS Act No. 85 of 1993 and the legal prescripts of occupational school safety. The significance of the study is to determine the nature and extent of the legal imperative as imposed by the South African government, to identify the extent to which legislated occupational safety is implemented and managed within South African schools.

The current study contributes to knowledge by identifying aspects affecting the legislated implementation of occupational safety in schools. Furthermore, it will assist the Department of Basic Education (DBE), the Gauteng Department of Education

(GDE), School Governing Bodies (SGBs) and school principals to determine their legal compliance with the OHS Act No. 85 of 1993 and other supporting safety regulations.

The study investigated whether school safety is implemented in schools in accordance with the OHS Act No. 85 of 1993 to ensure the creation of a safer school environment within public secondary schools in Gauteng.

1.5 LITERATURE REVIEW

Safety within a school environment is a necessity, as it ensures that scholars remain unharmed, and it creates an environment where they can experience harmony in the form of physical and emotional well-being. The lack of occupational school safety within a school environment could go unnoticed by educators and could result in hazards, dangers and risks, thus resulting in daily unhealthy and unsafe behaviours amongst scholars (Themane & Osher, 2014:3). The Department of Basic Education (DBE) in South Africa is committed to school safety, and it emphasises school values and ethics within the school community (DBE, 2021).

Safety is a key area in the operations management field, as work-related accidents and illnesses could critically interrupt operations. As such, schools are no different. Safety management is a major concern within any school environment, and the management system with its complex sub-systems should be dynamic to assist in balancing the normal functioning of any school environment (Fan, Lo, Ching & Kan, 2014:334; Andonou, 2017:16).

1.5.1 Safe schools

As previously indicated, a safe school is defined as being physically and psychologically safe, without the fear of personal incidents, accidents, and/or injury, allowing educators and scholars to work and learn in a safe environment. Furthermore, to be safe implies that the individual is protected from any form of danger, harm, hazard, and/or risk. It is associated with the well-being and mental health of a person (Masitsa, 2011:165; Graham, Powell, Thomas & Anderson, 2017). A safe school is an environment where educators can teach and scholars can learn without fear of bodily harm, intimidation, harassment, violence, abuse and/or humiliation, and where everyone, including educators and other role-players, feel physically and

psychological safe and protected from dangers, hazards, injuries, and unforeseen incidents.

The study by Mohlaoka, Jacobs and De Wet (2016:1) showed that South African schools are overwhelmed by various challenges related to scholar behaviour, and that cultural beliefs and values also result in tension within the school environment. A study by Van der Voort and Wood (2014:3) found that in South Africa, school-related improvement plans could be utilised by the DBE and GDE to evaluate public schools. One evaluation area is relevant to school safety, as identified by Van Der Voort and Wood (2014:3), was the legislative knowledge pertaining to school safety and concluded that appropriate and suitable school improvement plans are required.

According to Masitsa (2011:165), safety indicators include good discipline, a favourable teaching and learning culture, professional conduct by educators and scholars, good governance, and management practices that emphasise the importance of legislation, where scholars have the right to a safe school environment. The education profession acts as "loco parentis", which is a Latin, legal term used to describe a relationship similar to that of a parent. Loco parentis refers to the act of replacing the parent (Nakpodia, 2012:25; Lustick, 2017:299), such as in a school environment.

The safety of scholars is a basic pre-requisite and inherent requirement of schooling, where scholars need to feel safe and secure to learn. There are interrelated and interactive aspects in educational practices that need to work together to create a whole-school (child) approach (Darling-Hammond, Flook, Cook-Harvey, Barron & Osher, 2020:99). An analysis done by Sadowski (2017:5) showed that the safety paradigm adopted in South Africa by the Department of Basic Education (DBE), addresses safety under the banner of safety and security that is linked to aspects of bullying and violence. It was found that the aspect of 'safety' is not addressed in school legislation in relation to the legislated requirements as stipulated in the OHS Act No. 85 of 1993 (Sadowski, 2017:4). This concern has been raised regarding the lack of legislated school safety in South Africa, specifically as related to unsafe school conditions and unsafe school structures (Reddy, *et al.*, n.d.). The current perspective on South African school safety is discussed in the next section.

1.5.1.1 South African perspective on safe schools

According to Esterhuyzen (2017:20), there is inadequate OHS compliance in South Africa. The vision field related to OHS within management should be broadened to include OHS as a means of addressing employer-employee conflict within the work (school) environment. The high numbers of incidents of occupational-related injuries are due to non-compliance with OHS legislation.

School violence is a reality in South Africa, and it has a negative effect on scholars, as experience of and exposure to violence from a young age increase the risk of engaging in anti-social behaviours later in life (Burton, 2008:1; Lester, Lawrence & Ward, 2017:187). Schools should be considered holistically as places where scholars are able to learn and acquire knowledge, but where they also "learn to know, to be, to do, and to live together" (Burton, 2008:1). The South African government, together with the DBE, is committed to improving education in South Africa (DBE, 2014). The core business of the DBE is to educate young South Africans; thus, making schools an important arena for developing responsible and educated adults for the business environment. The DBE developed an action plan that was updated in 2020 towards the achievement of school's education system. The action plan was developed with the intent of guiding the school education system by supporting the National Development Plan (NDP) 2020-2024 (DBE, 2019, 2020; National Planning Commission (NPC), 2022).

The reality is that school violence is becoming a pandemic in South African schools (Daniel, 2018). Burton (2008:5) as well as Burton and Leoschut (2013:103) suggested that schools should provide a distinct and effective framework for a holistic school approach, as well as providing a code of conduct for educators and scholars where safety and emergency procedures are communicated to all (Makota & Leoschut, 2017:21; DBE, 2018c). This should be an extension of the information already provided to scholars on their first day of school.

In addition, minimum safety standards need to be implemented by the DBE, whereby information should be distributed to all schools throughout all provinces and districts (Burton, 2008:5; Makota & Leoschut, 2017:21). The responsibility for the realisation of these safety standards should be included in the performance agreements of all principals and educators as key performance indicators (KPIs) in relation to personal

development. All this relates to effective school management systems, which enable and enhance effective discipline and control, while also ensuring that all schools are operating in line with legislation and the DBE (Burton, 2008:5). Burton and Leoschut (2013:103) suggested that the DBE should prioritise the implementation of the holistic school approach, together with a process-monitoring plan for all schools.

Burton (2008:12) proposed a school safety surveillance system, where the safety of scholars can be monitored and integrated into a database. In the same vein, Burton (2008:12) noted in his research with reference to safety that violence and abuse are linked. Similarly, Lazarus, Khan and Johnson (n.d.:4) noted that school violence is not a new phenomenon. In this regard, violence and school safety should form a key component in relation to school safety surveillance systems.

The process of collecting and analysing data at school level should allow schools to identify their strengths, weaknesses, limitations, and resource requirements, thereby ensuring that decisions can be made regarding specific interventions (Burton, 2008:13). School safety cannot be effectively managed, unless the DBE and the school management manage the school environment holistically to ensure a safe and healthy school environment for all.

1.5.1.2   *Department of Basic Education and school safety*

School safety is an important aspect considered by the DBE, and the DBE reinforces their position in relation to school violence, criminal acts, drugs, alcohol, and sexual abuse, as factors that inhibit the learning process. The DBE views these in a serious light, given that it carries the potential to deprive scholars of their constitutional right to life, education, equality and dignity. The DBE focuses on school values and ethics, and as such, have implemented related policies and measures to address and ensure the safety of educators, scholars and other role-players (DBE, 2017a) through its 2024 action plan (DBE, 2019, 2020:7).

The DBE 2024 action plan addresses the physical elements of school infrastructure in an attempt to curb acts of criminal activities, such as violence, by constructing fencing around the border of the school, the installation of alarm systems and burglar proofing in classrooms, and partnerships with other stakeholders (DBE, 2017b, 2018c, 2019, 2020). While these aspects focus on security safety, they make no reference to the aspects related to legislated safety, as prescribed by the OHS Act No. 85 of 1993 to

minimise safety risk and/or hazards within the school environment that could affect educators' and/or scholars' health, or which may result in an injury.

The DBE recognises that schools play an important role in introducing and teaching discipline, as well as ensuring safety in relation to violence, and other security safety aspects. The DBE states that schools are directly responsible for providing an environment that promotes quality teaching and learning through promoting the rights and safety of all educators, learners, parents and other role-players (DBE, 2017a). The 2024 action plan makes provision for improved professionalism, subject knowledge and teaching skills (DBE, 2019, 2020).

In 2015, the DBE developed the National School Safety Framework (NSSF) to serve as a management tool to identify and manage aspects of school safety in relation to risks and threats in and around the school. This framework is essential to the DBE to empower responsible school officials in understanding their responsibilities related to school safety (DBE, 2016b:2; Reddy *et al.*, n.d.). Schools are ideally placed to promote learning at all levels, while also serving as an excellent setting for the implementation and learning of safety and violence-prevention programmes that could have a constructive long-term effect on scholars (DBE, 2016a:11; Makota & Leoschut, 2017:19).

The DBE will continue to protect the rights of scholars to ensure that they are safe and able to realise their full potential (DBE, 2016a). In consideration of the commitment made by the DBE to ensure the safety of all children, it is alarming to note that the reference made to safety by the DBE is only in terms of security safety, and not in relation to legislated safety which should be linked to the requirements as outlined in the OHS Act No. 85 of 1993. The researcher in the current study thus propounded the view that the word 'safe' used by the DBE should be referenced holistically to include all aspects of legislated safety, and not only security safety.

Schools are able to reach a large school population, consisting of educators, scholars, parents, family members, community members, school staff and other role-players. This should thus be the starting point for the DBE in the adoption of a more holistic and integrated approach, in relation to not only security safety but also legislated occupational safety. The DBE should incorporate this holistic integrated approach to

legislated occupational safety into the National DBE strategic plan, the DBE action plan, and the SASA No. 84 of 1996.

1.5.2 South African Schools Act (SASA) No. 84 of 1996, as amended to Act No. 15 of 2011

Education can be regarded as the building blocks of South African society, and is an essential aspect for all South African scholars. School legislation is prescribed by the DBE through the SASA No. 84 of 1996, which addresses safety in relation to mental and physical health (RSA, 1996b). The DBE is committed to managing safety in schools, as well as creating a safe and supportive learning environment (DBE, 2016a:3; Warton, 2018).

The SASA No. 84 of 1996 makes provision for a unified educational system for governing schools. It sets out the laws related to schools, and prescribes the roles and responsibilities of educators (DBE, 2014). The SASA No. 84 of 1996 (amended Act No. 15 of 2011) maintains safety in relation to random searches, seizures, drug testing, and aspects of the mental and physical health of learners, as well as educators, to a limited degree (RSA, 1996b). Safety measures are specified for public and independent schools in relation to state liability.

The SASA No. 84 of 1996 is explored in detail in Chapter 3 to determine the relationship between the SASA No. 84 of 1996 and the safety aspects, as outlined in the OHS Act No. 85 of 1993. The next section outlines the National School Safety Framework (NSSF).

1.5.3 National School Safety Framework (NSSF) of 2011

The DBE pursued various strategies to adopt a system that addresses school safety to create a safe learning environment. One of these strategies was the Hlayiseka Early Warning System (HEWS) of 2006. The HEWs will be discussed in more detail in Section 3.4. To demonstrate their commitment, the DBE developed a National School Safety Framework (NSSF) to provide standards and guidelines for safety in schools, essentially an attempt to prevent and manage safety incidents. The NSSF presents a four-pillar prevention approach in addressing school violence and safety (Makota & Leoschut, 2017:19). The NSSF was developed as a management tool to empower school principals to manage their responsibilities related to school safety

(DBE, 2018c). The aim of the NSSF is to create a safe and supportive learning environment in schools. It focuses on school violence and the precautions taken to create a safer learning environment for educators, scholars, administrative staff, the SGB and all participating role-players (DBE, 2016a:2, 2018c).

The objectives of the NSSF are to (1) understand and identify all security threats and security issues, (2) provide guidance related to all security threats and security issues by means of a step-by-step guide, (3) direct school management towards remedial and preventative measures, as well as (4) the monitoring of these measures (DBE, 2016b:2).

The Gauteng Department of Education (GDE) also regards school safety as an important factor, and as such, this has culminated in the GDE's Annual Performance Plan (GDEAPP). This annual performance plan includes a school safety programme, where the safety of educators, scholars and support staff on the school premises will be the responsibility of the GDE (DBE, 2018b; GDE, 2019b:23). The GDEAPP 2017/18 and GDEAPP 2019/2020 illustrate a collective agreement with the Department of Community Safety, the South African Police Services (SAPS) and the Department of Social Development (DBE, 2018c:26, 2019:23; GDE, 2018:26). The reference to safety in the GDEAPP 2017/18 and GDEAPP 2019/2020 is related to security safety, and not safety, as prescribed by the OHS Act No. 85 of 1993 (DBE, 2018b:12, 2019:15; GDE, 2019a). It is thus essential that educators understand their rights related to a safe school environment, as outlined in the sub-section below.

1.5.3.1 Educators' right to a safe school environment

Educators have similar rights to those of the scholars, where the rights pertaining to the scholar apply to the educator. Legislation dictates that it is the responsibility of educators to ensure a safe school environment, as an unsafe school environment could undermine the educators' authority, and thus, results in their obligation to provide caring supervision (Masitsa, 2011:167).

The South African Bill of Rights, section 10, states that everyone has the right to have their dignity respected and protected. This right could be challenged by any insecurities experienced whilst at school, thus impacting negatively on the educators' right to maintain authority, as well as to apply their '*loco parentis*' (as a parent) position. Section 12 of the Bill of Rights relates to the right of freedom and security, and as

such, educators have the right to expect a safe and secure teaching environment. Scholars may also not feel safe and secure in the school environment if they experience insecurities emanating from the educators (South Africa, 1996:7).

The OHS Act No. 85 of 1993 provides for the health and safety (H&S) of persons at work, thus, the educator. Section 8 of this Act, which outlines the general duties of employers in relation to their employees, requires every employer to provide and maintain a working environment that is safe and without risk to the health and safety of employees (RSA, 1993b:10; Lexis Nexis, 2020:10). In addition to this, the OHS Act No. 85 of 1993 relates to the employer being the school principal, and the employees being the educators and other school personnel. Therefore, school principals are required to provide and maintain a school environment that is safe and without risk to the health and safety of educators and scholars at all times. Maseko (2016:31) claimed that every employee (educator) has the right to work in a safe and healthy workplace (school environment), and has the right to stop working activities when there is a potential for imminent danger. Employees (educators) should also be aware of the employers' (school principal's) responsibility to inform them of any dangers, hazards and/or risk (duty to inform).

Section 13 of the OHS Act No. 85 of 1993 focuses on the duty to inform. This section refers to the duty of the employer (the school principal) to inform employees (the educators, and other school personnel) and scholars of any hazards and risks pertaining to their health and safety in relation to the work being conducted (RSA, 1993b:11; Lexis Nexis, 2020:11).

Section 14 of the OHS Act No. 85 of 1993 focuses on the general duties of employees at work, and requires educators, as the employees, to take care of their own health and safety. This section also requires educators to cooperate with the employer (the school principal), to report any unsafe and/or unhealthy situation or incident/injury that may affect the health and/or safety of any educator or scholar (RSA, 1993b:11; Lexis Nexis, 2021:11).

Section 24 of the OHS Act No. 85 of 1993 focuses on the report to an inspector regarding certain incidents, and requires that incidents arising from any activity conducted as part of the educators' work-related activities, should be reported. It should include any major incident where an employee (educator) is unable to perform

any of their duties (RSA, 1993b:13; Lexis Nexis, 2021:13). Similarly, section 25 of the OHS Act No. 85 of 1993 focuses on occupational diseases (RSA, 1993b:13; Lexis Nexis, 2021:14), as listed in the Compensation for Occupational Injuries and Disease Act (COIDA) No. 130 of 1993 (RSA, 1993a, 40). As educators have specific rights related to a safe school environment, scholars have similar rights.

1.5.3.2   *Scholars' rights to a safe school environment*

The South African Bill of Rights, section 24, states that everyone has the right to a safe environment that is not harmful to their health and well-being (South Africa, 1996:11). Section 29 states that a child has a right to basic education (South Africa, 1996:14), meaning that a child has the right to attend school and to be protected from harm, danger and injury. Therefore, committed attempts should be made to ensure a safe school environment (DBE, 1996:11; 2016b:3).

The next section reviews research conducted in South Africa in the field of school safety.

1.5.4   An overview of school safety research studies in South Africa

Schools, as a part of modern society throughout the world, are characterised by the extensive activities constantly taking place (Sambasivam, Karuppiah, Subramaniam, Praveena, Abidin, 2017:580). These activities could have the potential for various risks and/or hazards in both the physical and social school environment. This leads to a fundamental need to ensure school safety, with the aim of ensuring that the process of lifelong knowledge building is continued into the next generation (Sambasivam *et al.*, 2017:580).

Since 1994, with the emerging of the new democracy in South Africa, schools have undergone certain changes, and legislation was developed within the framework of the Constitution, such as the SASA No. 84 of 1996. The inequalities of the South African education system can, however, still be observed in some educational facilities (Legotlo, 2014:7). Some of the challenges related to school safety include the inadequate allocation of resources to uplift the poor and crumbling infrastructure of school buildings, and the shortage of classroom space which results in overcrowding (Legotlo, 2014:8; Bayar, 2016:192, 194).

The promulgation of the Constitution of the Republic of South Africa in 1996 laid the foundation for human rights, dignity, equality, freedom, basic education, and the right to an environment that is free from harm to their health and well-being. The provision was also made for the protection of children and scholars through the Child Care Act No. 74 of 1983, the Domestic Violence Act No. 116 of 1998, the SASA No. 84 of 1996 and the OHS Act No. 85 of 1993 and regulations. All these various pieces of legislation are concerned with the protection of the physical and psychological integrity of educators and scholars (Prinsloo, 2005:5; Grobler, 2018:124), where the role of the educator is to create an environment that is safe for scholars and the school as a whole (Oosthuizen, Smit & Roos, 2018:209).

A safe school should be free from danger and possible harmful elements, and should thus be a place where educators, non-educators, and scholars can work and learn without the fear of intimidation, harassment, ridicule, humiliation, and violence. This will ensure that all stakeholders enjoy a physically, emotionally, socially, and academically secure environment (Eberlein & Moen, 2016:109).

It is the responsibility of schools to take reasonable precautions to prevent foreseeable and/or predictable harm to the scholars in their care. The literature characterises safe schools as having secure walls and/or fences, buildings that are in a good state of repair, and well-maintained school premises. These characteristics also include good governance, good management practices, good codes of conduct for educators and scholars, and a culture that is conducive for teaching and learning (Prinsloo, 2005:5; Baryth & Mokoena, 2016:101).

The researcher in the current study puts forth the view that a safe school is more than one that is free from physical and psychological risks. It is a place where educators and scholars feel safe, healthy, secure, and free of hazards, dangers and risks.

The next section provides a synopsis of studies related to school safety in South Africa.

1.5.4.1 *Safety and security measures at secondary schools in the City of Tshwane*

The need for school safety and security has transformed from the emphasis on school security and the protection of school property, to that of the safety of educators, scholars and school support staff (Van Jaarsveld, 2011:xiv; Baryth & Mokoena, 2016:100). Violence creates fear and insecurities that impact on the core educational

purpose of learning, which is a major concern within Tshwane schools. Van Jaarsveld (2011:xiv) suggested that safety and security measures at secondary schools in the City of Tshwane should include:

- an intense strategic commitment to stabilise the learning environment; and

- the continual management of safety and security in schools to give rise to questions regarding how educators and learners view school safety, security measures, and violence.

This confirms that maintaining and creating a safe school environment should be at the top of the DBE's educational agenda and schools' priority list.

1.5.4.2 Disaster preparedness of learners and educators in Soshanguve

A study by Mamogale (2011:123) assessed the disaster preparedness of learners and educators in Soshanguve (a township outside Tshwane). It was suggested that research should focus on disaster management in training and education centres in Africa, and therefore, should assess the degree of disaster preparedness of educators and scholars in Soshanguve. Mamogale (2011) referred to the Millennium Development Goals (MDGs), with specific reference to high-risk schools and the implementation of disaster preparedness and contingency plans. Mamogale's (2011:10, 123) study concluded that education in disaster preparedness should be included in the school curriculum, as disaster management is regarded as an aspect of safety.

1.5.4.3 Exploring safety in township secondary schools in the Free State Province

The study by Masitsa (2011:1) that explored safety in township secondary schools in the Free State Province, found that effective teaching and learning can only be accomplished within a safe and secure school environment relating to the rights of children. School disruptions and safety aspects, demographics related to school size, levels of poverty, and community factors need to be considered. It was also found that township schools are more susceptible to unsafe conditions by nature of their geography.

School management and educators, specifically, play an important role in every scholar's life through the teaching of acceptable behavioural patterns and taking

accountability and responsibility for one's own actions. It is about nurturing and educating a generation to embrace acceptable values, and not a generation that regards unsafe behaviour as acceptable. Although there is legislation in place governing school safety, many schools are still unsafe, thus leading to transgressions regarding the South African safety legislation (Masitsa, 2011:174.)

1.5.4.4 Safe schools' programmes in the Limpopo Province

Mabasa (2013:1) investigated the written policies, programmes and frameworks in schools in the Limpopo Province, focusing on the implementation of Safe Schools Programmes (SSP) within the Capricorn and Waterberg districts of the Limpopo Province. Mabasa's (2013:2) study identified concerns such as poor planning, a lack of proper training, mismanagement of resources, a lack of clear guidelines and commitment, as well as a lack of realising the importance of school safety. The study also claimed that in developing countries such as South Africa, the policies, projects, and programmes are ineffectively implemented after formulation.

Mabasa (2013:2) investigated a Child-Friendly Schools Programme (CFSP) that emphasised an integrated holistic approach to safety. Mabasa's findings emphasised that the importance of safety in schools should go hand-in-hand with the quality of education by implementing it through a holistic and integrated approach to uplift school safety. Mabasa's study showed that there is a lack of commitment by the DBE due to budget constraints and under-staffing. Mabasa (2013:2) stated that teaching and learning cannot take place effectively if educators and scholars feel unsafe, and proposed further investigation.

1.5.4.5 Safety and security: The case in KwaZulu-Natal Province

A study by Gina (2013) investigated safety and security in rural and township schools in the KwaZulu-Natal Province. This study highlighted various barriers, including negligence by school principals in implementing policies, unstructured leadership and management, and poor school infrastructure. A lack of building maintenance leads to unsafe factors, which could have detrimental consequences on educators' and learners' safety and health. The fact that school principals have not implemented policies, such as the SASA No. 84 of 1996, requires attention to avoid safety issues in schools. Safety management and security within KwaZulu-Natal rural and township schools were found to be below standard (Gina & White, 2014:65).

1.5.4.6 Managing and implementing occupational health and safety policies in selected Tshwane South primary schools

A study by Ferreira (2015:iii), investigated the implementation of OHS policies in selected City of Tshwane schools. The study concentrated on identifying how school management teams (SMTs) experienced, managed, and implemented OHS in schools. A challenge faced in the Tshwane school environment is lack of education related to OHS among government officials, SMTs, educators and scholars. It creates a chain reaction, in the sense that schools are non-compliant regarding the prescripts of the OHS Act No. 85 of 1993. It is evident that there is a need to increase awareness related to the prescripts of the OHS Act No. 85 of 1993 in schools (Ferreira, 2015:99). The DBE should ensure that a policy on OHS is in place and that all principals, educators, and school officials receive training in OHS to become acquainted with the legal prescripts of the OHS Act No. 85 of 1993 (Ferreira, 2015:99). In accordance with these findings, the DBE should make OHS a priority, as safety is a constitutional imperative (Ferreira, 2015:39, 99).

1.5.4.7 Narratives of teachers' experience of school violence and ethics of care

A study by Grobler (2018:1) found that violence in schools had a psychological impact on scholars in South Africa. The study emerged from the fact that school violence in South Africa is a real problem which should be addressed at various levels and from various points of view in support of the school strategy. The study was related to violence and unsafe school environments, which included a survey of over a thousand schools. The study identified sub-themes, applicable to physical safety, which were linked to safety and unsafe environments (Grobler, 2018:131). Grobler (2018:140) stated that further research and investigation related to violence in education and unsafe acts is needed.

As previously stated, the objective of the current study was to explore the legal imperative related to implemented school safety. Although the literature reviewed above relates to safety in schools, it addresses safety from the viewpoint of security safety and safety policies. Drawing from the literature reviewed, the study indicated that there is a gap in the literature as legislated by the OHS Act No. 85 of 1993. The next section outlines a discussion on school safety in developed countries.

1.5.5   School safety in developed countries

An initiative by the World Health Organisation (WHO) is the development of a "safekids" platform aimed at directing and co-ordinating health-related aspects within the United Nations' (UN) system (WHO, 2017a; Safe Kids Worldwide, 2019). The WHO develops global health guidelines and standards through the Global School Initiative (GSI), launched in 1995, that aims to strengthen education at a global, national and regional level. The strategy of the GSI includes research to improve school programmes, strengthening national capabilities, and improving collaboration between health and education (WHO, 2017d). The GSI programme is focused on caring for scholars, takes control, and creates an environment conducive to learning by influencing behaviour, knowledge, skills, attitude, values and beliefs (WHO, 2017a, 2017b, 2019).

A synopsis of the National School Safety Framework of Australia follows.

1.5.5.1   *The National Safe Schools Framework of Australia (NSSFA) versus the Australian Student Wellbeing Framework (ASWF)*

The National Safe Schools Framework of Australia (NSSFA) was developed under the guidance of the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA) in 2011. A safe and supportive school is described in the NSSFA as a school where the risks from all types of harm is minimised, where diversity is valued and all members of the school community are respected, and are confident that they will receive support when faced with any threat to their safety and well-being (MCEECDYA, 2011:2). The NSSFA provides schools with a vision and guidelines that aim to develop scholar safety and well-being policies (MCEECDYA, 2011:3).

Australian state schools are committed to provide a safe, secure, and supportive learning environment for educators, scholars and the wider school community (Queensland government, 2015, 2018c). The NSSFA was revised in 2018 and became the Australian Student Wellbeing Framework (ASWF) (Government of Australia, 2018).

The ASWF is based on evidence that established a relationship between well-being, safety and learning, and emphasises school safety. The intention of the ASWF is to support a whole-school identity and prioritises the following five key elements: (1) leadership, (2) an inclusive and connected school culture, (3) the student's voice,

(4) partnerships, and (5) support for positive behaviour. The vision of the ASWF is to promote student well-being in support of safe schools in Australia (ASWF, 2018).

The five key elements of the ASWF can be used as a benchmark by the DBE with the view of promoting safe schools across South Africa. The ASWF can be viewed in more detail in Sections 2.9.1 and 3.5.1. The UK is reviewed next.

1.5.5.2 The Health and Safety at Work etc. Act (HSWA) of 1974 of the United Kingdom

The Health and Safety at Work etc. Act (HSWA) of 1974 is the main legislation governing health and safety in the UK. The regulations developed under the HSWA explore more detailed action required by the employer. The management of the Health and Safety at Work (Amendment) Regulation of 2006 requires employers to assess the safety risks to employees and others affected by school activities, with the aim of identifying H&S measures. The Regulation requires that measures be introduced to manage those identified safety risks, that employees are informed regarding these safety risks, and to ensure sufficient training of employees in relation to H&S (Legislation.gov.uk, n.d.).

According to the HSWA of 1974, schools are required to have written H&S policies which should describe how the school will manage its H&S activities and commitment (Legislation.gov.uk, n.d.). The UK government is determined to reduce the burden on schools and to simplify H&S requirements (UK Department for Education, 2018, 2022).

The HSWA of 1974 has various legal prescripts that are similar to the South African OHS Act No. 85 of 1993 and the management of safety in the workplace. An added clause, not found in the OHS Act No. 85 of 1993 nor the SASA No. 84 of 1996, is that of written H&S policies in schools, as prescribed in the HSWA of 1974. This clause could be considered for inclusion by the DBE in the SASA No. 84 of 1996. A more detailed discussion related to the HSWA of 1974 can be viewed in Sections 2.9.2 and 3.5.2. The USA is discussed next.

1.5.5.3 United States of America: State and Federal Laws

Workplace safety legislation in the USA is comprised of state and federal laws, and applies to businesses and the private sector. Specific standards are in place to decrease the risk of workplace incidents, accidents and injuries and are administered by the Occupational Safety and Health Administration (OSHA). These regulations are

promulgated as Codes of Federal Regulation (CFR) under the OSHA, and are published in the USA as 29 CFR (OSHA.gov, n.d.; U.S. Federal Government, 2021). A more detailed discussion related to the USA State and Federal Laws is presented in Sections 2.9.4 and 3.5.3.

1.5.5.4 *Canadian safety legislation*

Canadian safety legislation outlines the rights and responsibilities of the employer and employees with a 'right-to-know' incorporated into its safety legislation. The Canadian federal H&S legislation is referred to as the Canada Labour Code Part II, with additional regulations under this Code. The Code applies to organisations and sectors across provincial and international boards. As there is a vast amount of OHS legislation in Canada, only the general aspects of the legislation and school safety will be discussed in Sections 2.9.4 and 3.5.4.

1.5.6 BRICS: School safety in developing countries

As scholars sit at their desks in a classroom, the furthest thing from their mind is that of building safety and the potential danger of the building collapsing. Since 2012, The World Bank (TWB) has partnered with numerous entities to develop effective school safety strategies (Global Facility for Disaster Reduction and Recovery (GFDRR), 2017). One such endeavour is the global programme for safer schools with the development of a Comprehensive School Safety Framework (CSSF). This CSSF rests on three pillars, namely: (1) safe learning facilities, (2) school disaster management, and (3) risk reduction (TWB, 2017).

Due to challenges related to H&S concerns, developing countries are dependent upon developed countries for support. Developing countries face the beginning of industrialisation, have a high illiteracy rate and a moderate standard of living (Surbhi, 2015; Panicker, 2017). A group of countries came together to address global governance within developing countries, that included Brazil, Russia, India, China and South Africa, which are referred to as BRICS (Nayyar, 2016:575; Marten *et al*, 2016:2164; Van Jaarsveld, 2021). In 2013, an initiative was taken to develop a BRICS league for education to address the challenges and opportunities of the 21st century (Seregin, 2013:1; Granello, 2016). A key theme is to focus on preparing young people for the future (Mbiza, 2018).

Occupational health and safety in Brazil is regulated by the Brazilian Regulatory Standards which provide guidance on mandatory H&S processes (HSE Brazil, 2022). The Brazilian Federal Government (BFG) has shown improvements to its education system which has successfully expanded to a positive school environment that enables school leaders and teachers to succeed. Brazil views its evaluation of infrastructure as a strength at the federal level. However, Brazil still needs much improvement in the quality of schooling (Grochocki, 2016; OECD, 2021).

Russia focuses on improving and equalising quality care through a national safety and health project as well as numerous regional programmes (Marten *et al*, 2016:2166). Russia has a co-educational school system of large and overcrowded schools, where many scholars attend public schools, as private schooling is too expensive. Challenges experienced in schools range from a lack of heat in classrooms to basic unhygienic conditions and schools that are inaccessible. Other challenges include lack of vital school facilities and modern technology (Hays, 2016; Van Jaarsveld, 2021).

The 2013 National Policy on Children in India states that childhood is an integral part of development (GoI, 2016a:4). The National Policy on Education (NPE) of 1968, as amended in 1992, refers to a "child-centred approach"; however, there is no reference to school safety or disaster risk to scholars (GoI, 2016b:4). In India, the Right to Education (RTE) Act of 2009, as amended in 2011, describes the importance of free and compulsory education, until at least the age of 16 years. It sets the minimum standards related to school location and quality and lays the foundation for a school management committee for the planning of safe infrastructure. The RTE Act provides guidelines related to the implementation of minimum school safety standards (GoI, 2016a:4). It also identifies various safety aspects, such as the marking of unsafe areas in schools, and informing educators and scholars about safety legislation (Right to Education, 2014). India is one of 135 countries that have agreed to make education, within a safe school environment, a fundamental right of every child (Right to Education, 2014; MHRD, 2018).

With regard to school safety in China, Rocchi, Brand and Lui (2013) maintained that the focus is on safety, hygiene, and health conditions (CSIS, 2019). School safety was introduced by the State Council of China to address campus safety concerns and school buildings. In addition, safety drills were instituted to counter the dangers posed by earthquakes and fires (Yongqi, 2017). In the absence of a stable and safe school

infrastructure, effective school management and education related to school safety for educators and scholars is at risk. School buildings in China should comply with quality standards as well as national safety standards. Schools are required to conduct drills to lessen the dangers caused by environmental and man-made disasters (Yongqi, 2017). The establishment of "safekids.org" allows China to embark on various projects to improve school safety awareness. As a result of this initiative, improvements have been made to the infrastructure in and around Chinese schools (WHO, 2017c).

In summary, it can be said that the BRICS nations emphasise school safety. Although South Africa has policies in place to address school safety, these policies are mainly aimed at security safety and not that of safety as legislated by the OHS Act No. 85 of 1993. In light of several school safety incidents that have been reported, the current study was of the viewpoint that a gap exists related to school safety in South Africa. The current study therefore addressed the gap related to school safety by investigating South African legislated safety characteristics, within the legal prescripts of the OHS Act No. 85 of 1993 and SASA No. 84 of 1996 in selected public secondary schools in Gauteng. This study is an attempt to address the problem (gap) related to legislated school safety.

1.6   PROBLEM STATEMENT

As there have been reports of unsafe school incidents and accidents, the problem that was identified and the purpose of the study was to investigate the legislated safety characteristics, as legislated by the OHS Act No. 85 of 1993 (RSA, 1993b), with the intention of promoting a safe school environment. The study is related to the lack of implemented occupational safety legislation required to create a physically safe environment in public secondary schools in Gauteng.

In identifying the problem related to school safety and considering various research studies conducted in schools it has been stated that an integrated approach is needed to address the effectiveness of school safety, as teaching and learning are ineffective when educators and scholars feel unsafe (Mabasa, 2013:2). Likewise, Mamogale's (2011:123) study regarded disaster management as an aspect of safety that should be included into the school curriculum. In addition, Masitsa (2011:174) argued that although the South African government has put legislation in place to ensure school safety, many schools are transgressing against legislated safety.

The legislated concerns regarding the increase in school violence, and interventions to make schools safer have failed (News24, 2015b). Van der Voort and Wood's (2014:3) study related to school improvement plans and the legislated knowledge pertaining to school safety claimed that appropriate and supportive school safety improvement plans are required. Van Jaarsveld, Minnaar and Morrison (2012:127) advocated for the creation of a safe school environment, where the DBE made school safety a priority. Gina and White (2014:208) argued that further research is needed related to the safety of educational facilities.

Successful education requires a safe and secure school environment where an essential step is the implementation of safety legislation, as prescribed by the South African government. Even though the government has policies in place to govern schools, such as the SASA No. 84 of 1996, it focuses on aspects of safety in relation to mental and physical health and security, with no specific reference to safety (DBE, 1996). The OHS Act No. 85 of 1993 was legislated by the South African government with the intent of protecting the health and safety of persons at work (educators), and for the protection of persons other than employees (scholars) against health and safety hazards and risks (RSA, 1993b; Lexis Nexis, 2021:7).

From the researcher's viewpoint, there is a gap in South African schools regarding the implementation of legislated occupational safety. The current study therefore proposed to bring the occupational safety legislative requirements (OHS Act No. 85 of 1993) into school management systems. The current study that was conducted in selected public secondary schools in Gauteng was based on the research questions and objectives, as outlined below.

1.7   RESEARCH QUESTIONS AND OBJECTIVES

This section presents the hypotheses research questions, and objectives that were formulated for the current study.

1.7.1   Research hypotheses

The following hypotheses were stated for the study:

H_1: There is a relationship between the knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety.

H$_2$: Compliance to the OHS Act No. 85 of 1993 leads to the effective implementation of legislated school safety.

H$_3$: Implementation of legislated school safety creates a safe school environment.

1.7.2   Research questions

The following research questions were formulated for the study

1. Is the nature and extent of legislated safety practised in line with the OHS Act No. 85 of 1993 in public secondary schools in Gauteng?

2. What are the safety risks and practices in secondary public schools in Gauteng?

3. What are the reasons and challenges why legislated safety has not been implemented in secondary public schools in Gauteng?

Stemming from the research questions, the following primary and secondary objectives were developed.

1.7.3   Research objectives

A research outline as formulated in Table 1.1, addresses the research problem, research objectives and contribution of the study.

Table 1.1:   Research outline

Research problem

The purpose of the study was to investigate the safety characteristics, as legislated by the OHS Act No. 85 of 1993 (RSA, 1993b) in combination with the SASA No. 84 of 1996, with the intention of promoting a safe school environment in public secondary schools in Gauteng.

Objectives	Research objectives
Primary	To explore the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety.
Secondary	To identify safety risks and practices in selected public secondary schools in Gauteng.
	To identify reasons and challenges why legislated safety has not been implemented in selected public secondary schools in Gauteng.
	To develop a School System Safety Management Plan (SSSMP) and School Safety Management Framework (SSMF) to assist the Department of Basic Education (DBE) and Gauteng Department of Education (GDE) to achieve legislated (occupational) school safety as prescribed by the OHS Act No. 85 of 1993 and supporting regulations.

Contribution of the study:

The contribution of this study to the body knowledge is the identification of aspects affecting the implementation of legislated occupational safety in selected public secondary schools in Gauteng.

The study also aimed to assist the GDE to determine its legal compliance with the OHS Act No. 85 of 1993 and supporting safety regulations. The development of a School Safety Management Framework (SSMF) will assist the GDE to create a safer school environment.

Source: Researcher's own compilation

The next section examines the research design and methodology used in the study.

1.8   RESEARCH DESIGN AND METHODOLOGY

The research design is the general plan and framework of the study through which the data collection and analysis processes are conducted, and which enable the study to answer the research questions (Saunders, Lewis & Thornhill, 2019:173).

To achieve the research objectives and research questions, the research plan, as illustrated in Figure 1.1 below, was followed.
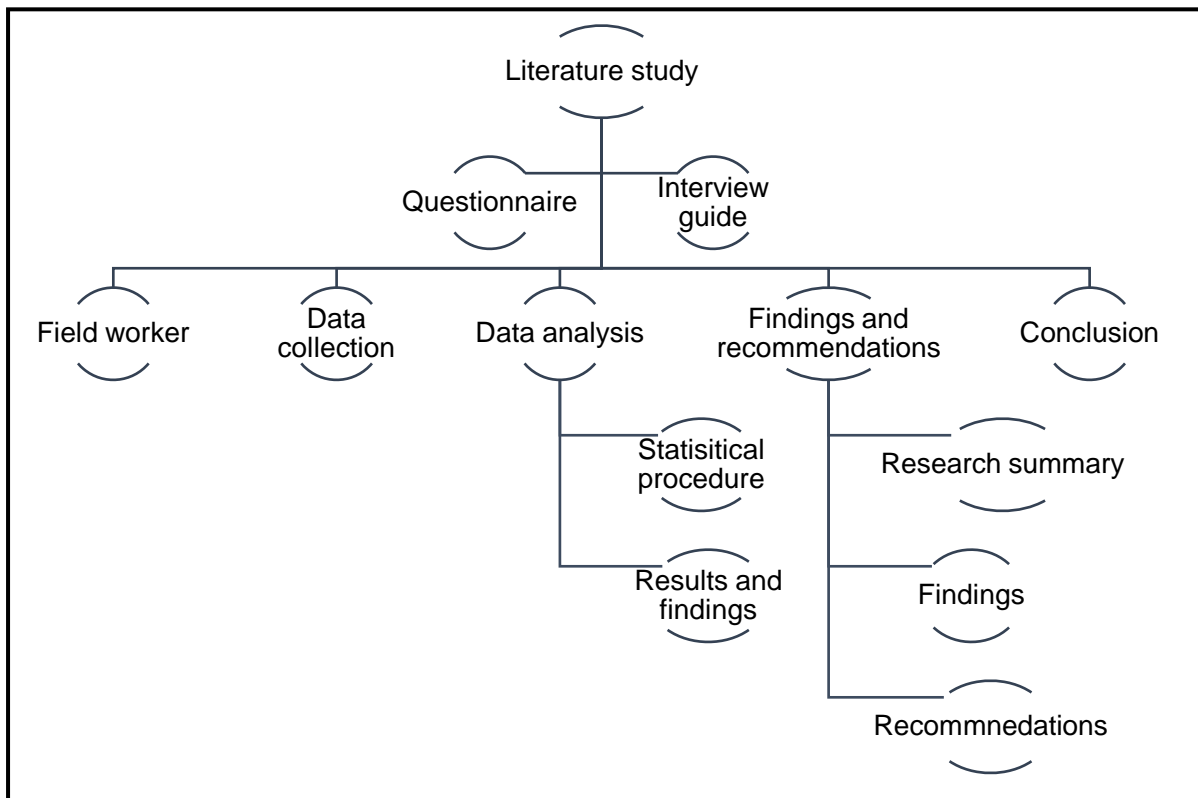
Figure 1.1:   Research plan

Source: Researcher's own compilation

The research methodology for this study was based on an exploratory sequential two phased mixed method design. This consisted of the qualitative data collection process that was followed by the quantitative data collection process (Biddix, n.d.; Mihas & Odum, 2019:2). A mixed method approach combines both qualitative and quantitative data collection techniques and procedures of analysis in a single-phase research design, either at the same time (concurrent) or individually (sequential), or one after the other (Saunders, Lewis & Thornhill, 2016:170, 720). Mixed method research (qualitative and quantitative methods) was useful to reduce limitations (Turner, Cardinal & Burton, 2017:243) in gaining an in-depth understanding of safety trends and patterns, as well as assisting with the development of the safety measurement instruments (Creswell *et al.*, 2015:269, 2018:313).

The qualitative research method (Saunders *et al.*, 2016:169) explored the safety knowledge of the school principals in selected public secondary schools in Gauteng in the form of interviews, at the hand of an interview guide. The quantitative research method reviewed published data in the form of legislative prescripts, such as the OHS

Act No. 85 of 1993 and the SASA No. 84 of 1996 in relation to safety and schools, and a structured questionnaire was used to collect data from educators.

The focus of the study was on promulgated South African safety and school legislation in relation to the application and implementation of school safety. Due to the vast number and types of schools in South Africa, and the geographical locations and distances, the study was conducted at selected Gauteng secondary schools, as approved by the DBE.

The province of Gauteng is divided into five regions, namely, the City of Tshwane, the City of Johannesburg, Ekurhuleni, Sedibeng, and the West Rand, as illustrated in Figure 1.2.

Figure 1.2:   Map of the province of Gauteng

Source: Shutterstock ID: 163842866 (2019)

The next section explores the research philosophy and approach that was followed in the study.

1.8.1 Research philosophy and approach

A research philosophy is described by Saunders *et al.* (2016:124) as a system of beliefs and assumptions related to the development of knowledge. For this study, the researcher followed a pragmatic philosophy that began with a problem and provided a practical contribution (Saunders *et al.,* 2016:143) in the shape of the development of a school system safety management plan (SSSMP) and School Safety Management Framework (SSMF) (Table 7.1). When trying to understand a particular research problem, pragmatism takes the stand that the 'truth is what works best', as both qualitative and quantitative methods have enough similarities to be compatible in a single study. Thus, mixed method research focuses on multiple methodologies (Turner *et al.,* 2017:243) that collect and analyse both text and numerical data to provide a complete research understanding (Creswell *et al.*, 2015:271; 2018:315).

The study was based on an inductive approach that has the ability to analyse raw data for the primary purpose of allowing the raw data to be developed into significant themes (Alase, 2017:12). An inductive approach involves applying specific interpretations and assumptions from observations within a target population (educators). The research study flowed from the data collection related to occupational school safety with the aim of identifying a safety legislative gap and contributing to the development of a SSMF.

The inductive approach provides a simple means of conducting a qualitative analysis of the selected target population and the sample (secondary schools) that can be generalised to the wider school environment, if the sample is representative of the population (Mouton, 2008:118; Alase, 2017:12; Harvey, 2022). Generalisation is the reasoning involved in determining inferences in the study. The aim in most studies is not to generalise but to provide a contextualised in-depth understanding of the study and contextualise the importance of the independent variable (Polit & Beck, 2010:1451; Cohen, Manion & Morrison, 2018:847). The next section discusses the population and sample used in the study.

1.8.2 Population and sampling

The term 'population' represents the participants that could be included in the study (Bertram & Christiansen, 2020:71). For the purpose of the current study, the selected

research population in public secondary schools. It is not always possible or practical to use the whole pollution in research, thus a sample of the population is selected.

The technique of selecting a sample differs from research to research, where the assumption has been that sampling is random. For this study, a non-probability, homogeneous convenience and purposive sample was used from a selection of Gauteng secondary schools. Non-probability or non-random purposive sampling allows for the selection of a population sample that best meets the requirement of the research objectives and questions (Saunders *et al.,* 2016:295, 301, 303).

A qualitative research study aims for theoretical saturation and makes use of a purposive sample to select from a specific population group (Creswell *et al.*, 2015:178; Van Rijnsoever, 2017:2; Creswell *et al.,* 2018:198), namely, public secondary school educators. Homogeneous sampling focuses on a specific sample group similar in nature (Saunders *et al.,* 2016:303), such as public secondary school educators. A convenience sampling technique was used to select public secondary schools in a convenient geographical location, namely, Gauteng.

A sample size is determined by the research question and objectives to enable the researcher to determine what is useful and credible (Patton, 2002; Saunders *et al.,* 2016:297). Saunders *et al.* (2016:297; 2019:234) referred to the researcher's resource availability and the sample size when conducting interviews during qualitative data collection. According to Guest, Bunce and Johnson (2006:74), sample size and saturation can be obtained by conducting 12 interviews, where the researcher aimed to gain an understanding of the cohesion amongst a homogenous sample group.

The study followed a two-phased approach: in Phase 1 (qualitative), the research sample comprised of school principals, deputy head principals and HoDs, whereby 14 interviews where conducted. According to Van Rijnsoever (2017:2), there is no specific rule that indicates the sample size of a qualitative study, and most studies accept an 80% sample as acceptable. With a well-constructed sample framework, a reduced sample size is acceptable (Kadam & Bhalerao, 2010:55).

In Phase 2 (quantitative) the sample comprised of school educators from the same 60 public secondary schools (12 schools in five regions) as in Phase 1. Using an average of five educators per school, the sample size (five educators x 60 schools) was

estimated at 300 participants. A total of 241 questionnaires were completed by school educators. The next section reviews the use of questionnaires and interview guides.

1.8.3 Interview guide and questionnaire

In Phase 1 (qualitative) an interview guide was used by the researcher and included two field workers (pre-Covid-19 pandemic) to collect information relating to legislated occupational safety. To continue with data collection after the inception of the Covid-19 lockdowns, the researcher developed an electronic interview guide that was emailed to the school participants who agreed to participate in the study.

In Phase 2 (quantitative) a structured, self-completing questionnaire (Saunders *et al.*, 2016:440) was developed using mainly closed-ended questions with three open-ended questions. The questionnaire was developed using data variables that ranged from demographics, legislation, and individual opinions, to determine the extent to which occupational safety is being implemented in the selected schools, and the challenges that educators face in relation to occupational school safety. The questionnaire was based on the OHS Act No. 85 of 1993.

A pilot study was conducted to verify and validate the study, as well as to quality control the questions in the interview guide and questionnaire.

1.8.4 Pre-testing of the research instruments

A random sample of three schools was selected from the 60 public secondary schools that were selected for the study, and a pre-test (pilot test) was conducted for both the qualitative interview guide (Section 4.6.2.1) and the quantitative questionnaire (Section 4.7.2.1).

The purpose of the pre-test was to test and refine the interview guide and questionnaire prior to conducting the actual research study. It allowed the researcher to ensure that questions were structured in an understandable format. The pre-testing allowed for the assessment of validity and reliability.

A pre-analysis of the data collected in the pre-testing process gave the researcher an indication of whether the questions were understood and could be linked to statistical data analysis (Saunders *et al.*, 2016:473).

The interview guide and questionnaire was first reviewed and quality assessment by the supervisors, were it was presented to the qualitative and quantitative statisticians for input. Thereafter, pre-tests were conducted with school participants from three selected public secondary schools, as indicated in Table 1.2.

Table 1.2:   Pre-testing

¤	Statistician·1¤	Statistician·2¤	Supervisor·1¤	Supervisor·2¤	No¤
Phase·1¤	1¤	¤	1¤	1¤	3¤
Phase·2¤	¤	1¤	1¤	1¤	3¤
				TOTAL¤	6¤

School¤	Interview¤	No.¤	Questionnaire¤	No.¤
A¤	1¤	¤	4¤	5¤
B¤	1¤	¤	4¤	5¤
C¤	1¤	¤	4¤	5¤
			TOTAL¤	15¤

Source: Researcher's own compilation

A total of 15 pre-tested instruments were collected from three schools as indicated in Table 1.2. To assist the researcher in collecting the data for the study, field workers were employed where required.

1.8.5   Field workers

Two field workers were appointed, in writing, by the researcher to assist with meeting school educators for the completion of the interview guide and questionnaires. Each field worker completed a confidentiality agreement to ensure that the data collected remained confidential and within the boundaries of the study.

The researcher informed the field workers two to three days in advance of the scheduled appointments with the selected schools, and ensured that all the required information regarding the schools' address, contact person, venue, date, and times were available, including the interview guide and questionnaires. The next section explores the avenue of data collection.

1.8.6   Data collection

The term 'data' is related to evidence or information collected for research to obtain answers to research questions (Bertram & Christiansen, 2020:85). Approval for data collection was given by the GDE (Annexure C-1) (2019) and Annexure C-2 (2020) for the study conducted in 60 schools in Gauteng.

Data collection was conducted through an exploratory sequential mixed method approach, starting with Phase 1 (qualitative). A research interview is a situation in which the researcher physically meets face-to-face with the participant to establish a relationship with the participant (Saunders *et al.*, 2016:388). Qualitative research commonly uses a small sample size, as indicated by Guest *et al.* (2006:74) and employs probing questions, requires an interviewer with a special interpersonal and subjective skill set, and cannot be easily duplicated (Myers, 2011:5; Alase, 2017:9).

An interview is about asking focused questions, to which the participant (interviewee) will respond and to which the researcher will listen attentively, with the aim of obtaining information. An interview can be expressed as a "conversation with a purpose" (Alase, 2017:15). Interviews also aid the researcher in refining ideas, where research questions and objectives have not been fully formulated (Saunders *et al.,* 2016:388).

Pre-Covid-19 pandemic, the researcher scheduled meetings with five selected school principals to explain the research study and to request permission to conduct the study. An additional two schools were contact by the field works (one per field worker). At these meeting, a letter of approval and pre-developed consent form was signed by the school principal. A consecutive meeting was scheduled to conduct an interview, complete the interview guide and distribute questionnaires (Phase 2) for completion by educators.

A questionnaire is used for the purpose of collecting data related to people's behaviour, attitudes, opportunities, and/or to measure services and customer satisfaction. It is summarised as a sequence of questions designed to obtain information from an individual (Saunders *et al.*, 2016:139-440; Brace, 2018:2). A structured questionnaire is designed to obtain specific information and is used to collect accurate information to classify circumstances or people (Welman, Kruger & Mitchell; 2005:174-175; Bryman *et al.*, 2015:190).

During the interviews (Phase 1) that were conducted between August 2019 and March 2020 with the identified school participants, the researcher gathered information relating to legislated occupational safety. During this interview phase, a request was made for the distribution of the questionnaires (Phase 2) to educators.

In Phase 2 (quantitative phase), pre-Covid-19 pandemic, the purpose of the study and questionnaire were explained by the researcher or field worker, and questionnaires were left with an identified school member (as identified by the school principal), after which the completed questionnaires were collected on an agreed-upon date. Participation in the study was voluntary and participants completed a pre-developed consent form prior to completion of the interview guide and questionnaire, which also included a confidentiality clause.

Due to the Covid-19 pandemic restrictions imposed in March 2020, the researcher was unable to conduct face-to-face data collection. As such, an electronic interview guide and questionnaires were developed for distribution to schools, and which the researcher emailed to the selected schools requesting participation in the study as per GDE approval. The email included an explanation of the purpose of the study and requested participation from the school. Through this electronic communication, the researcher obtained seven online interviews and 30 online questionnaires.

An in-depth discussion related to the qualitative data collection (Section 4.6.3) in Phase 1 and the quantitative data collection in Phase 2 (Section 4.7.3) is given in Chapter 4. The next section expands on the analysis of the collected data.

1.8.7   Research data analysis

Data analysis refers to the process of analysing the collected data to answer the research questions. Exploratory data analysis is the way of thinking about the data that produces numerical summaries useful for displaying data distribution and values (Cooper, 2019:150; Du Plooy-Cilliers, Davis & Bezuidenhout, 2021:269). In Phase 1 (qualitative) the researcher made use of content and thematic analysis to analyse the verbatim transcriptions of the participants' interviews. In Phase 2 (quantitative) the data was collected by way of questionnaires. Descriptive statistical analyses was performed in both phases.

1.8.7.1 Descriptive statistics

Descriptive statistics is used to summarise data, and attempts to answer basic questions of who, what, when and where. Descriptive statistics can be used in both qualitative and quantitative data analysis. It is the first step used by a researcher to understand the sample data through data analysis (Cooper, 2019:10, 164). The data was analysed using statistical frequency and measures of central tendency.

Descriptive statistics are not informative for describing asymmetrical distribution. As a mixed method study inferential statistics was included.

1.8.7.2 Inferential statistics

Inferential statistics makes use of the sample data in the quantitative phase to make inferences and to test relationships. To compare variables, show independence and relationships, the quantitative data analysis made use of cross-tabulation to determine a relationship between variables in combination with the Pearson Chi-Square test of independence used to compare two variables. In addition, Kendall tau-b, a non-parametric measure of both strength and direction of association between two variables, was used (Statistics.laerd.com, 2018; Saunders *et al.,* 2019:593; Cooper, 2019:155; Pallant, 2020:223). The next section discusses the validity and reliability of data.

1.9 VALIDITY AND RELIABILITY

The accuracy of observation and/or measurement is referred to as validity. Face validity is when the research method is taken at face value; construct validity is more complex and requires specific measurements; whereas internal validity relates to relationships or causality (Golafshani, 2003:600; Greener & Martelli, 2015:45; Saunders *et al.,* 2016:450-451).

The current study made use of construct validity to measure the presence of constructs intended by the research. The application and implementation of safety legislation in selected Gauteng schools was analysed. Internal validity relates to the relationship between the SASA No. 84 of 1996 and the legislative requirements of the OHS Act No. 85 of 1993. The supervisors and statisticians reviewed the interview guide and questionnaire. In addition, the interview guide and questionnaire were pre-tested (Table 1.2). Based on the outcomes and feedback, unclear questions were

revised, complex questions were reworded, and ineffective and non-functional questions were discarded.

A qualitative interview guide and quantitative questionnaire need to be reliable to be valid (Saunders *et al.,* 2016:202). The importance of the interview guide and questionnaire is to assist the researcher to obtain the same information from all participants. The interview guide allows for a conversational approach, yet still allowing the researcher the freedom and adaptability to obtain relevant information from participants.

The questionnaire is a survey document that is designed for the collection of statistical data from a selected group of participants (Turner, 2010:755; Saunders *et al.,* 2016:400). To ensure the validity of the current study, the researcher explained the safety legislative requirements and the objectives of the study to the participants from the selected Gauteng schools.

Reliability refers to consistency, and should aim to achieve transparency as well as the same consistent results, regardless of where the research is conducted (Greener & Martelli, 2015:44). The reliability of the study was confirmed through a pre-testing process (Table 1.2) to ensure that the interview guide and questionnaire were clear and easy to follow.

Trustworthiness and credibility need to be considered by researchers as it creates a unique perspective on the study. Credibility is defined as the confidence that is placed on the truth of the research findings and establishes the plausibility of data collected from participants (Korstjens & Moser, 2018:121). Credibility is generally regarded as an essential factor in establishing trustworthiness and accuracy in a qualitative study, as it requires of the researcher to link the research findings with reality for the purpose of demonstrating the truth. Credibility focuses on several techniques, and can also be referred to as investigator triangulation and member checking (Statistics Solutions, 2019a; Du Plooy-Cilliers *et al.*, 2021:295).

Triangulation relates to data collected from different sources, and requires making use of multiple data sources and observations to completely understand the factors being researched. Triangulation is used to ensure that the research findings are forceful, robust, comprehensive, and well developed (Statistics Solutions, 2019a; Bertram &

Christiansen, 2020:207). Another aspect of qualitative research linked to credibility is that of dependability.

Dependability refers to the participant's evaluation, interpretation and recommendations of the research findings and the stability of the findings over time (Anney, 2014; Korstjens & Moser, 2018:121). Dependability is linked to trustworthiness as it determines the research findings as repeatable and consistent to ensure that when data is reviewed by other researchers it remains consistent with similar findings and interpretations. It links to the quality of the process of integration (Statistics Solutions, 2019b; Du Plooy-Cilliers *et al.,* 2021:296). The intent of the current study was to allow the DBE and GDE to repeat and link the research findings found in Gauteng schools with other school districts and provinces, thereby allowing a measure of conformability and transferability.

Conformity in qualitative research is the degree to which research findings are confirmed by others, and how the data collection supports the analysis of the research findings. Gunawan (2015) maintained that an attempt to increase reliability is a forced or artificial consensus, and conformity is the analysis of the data, usually at the expense of the validity of the findings. A number of strategies are used to enhance confirmability. For example, the researcher documents the procedure of checking and re-checking the data throughout the study, while another researcher plays 'devil's advocate' related to the research results, where a data audit can be conducted to examine the data collection and analysis with the view to making a judgement related to bias and misrepresentation (Trochim, 2006; Statistics Solutions, 2019c; Du Plooy-Cilliers et al., 2021:297).

Transferability is the degree in which the findings of a research study can be transferred to other participants, environment or frameworks. It is the degree to which the data analysis and research findings can be transferred beyond the original research. (Du Plooy-Cilliers *et al.,* 2021:296). The intent of the current study is to allow the DBE and GDE to transfer the research findings found in Gauteng public secondary schools to other public schools, possibly even private schools. Thus, proving the authenticity of the research study.

Authenticity is an essential part of research which is related to ensuring that the research conducted is worthwhile and takes cognisance of the impact on the

participants in the research (Given, 2008; Lehman, O'Connor, Kovacs & Newman 2018:2). Authenticity was ensured through the procedures related to data analysis, validity and reliability.

Confirmability relates to how effectively the data supports the interpretation of the research findings. The confirmability and rigour of the data can be increased through the use of a reflexive journal record and for the researchers to reflect on their biases.

Table 1.3 presents a comparison of the qualitative and quantitative terminology used.

Table 1.3:   Comparative table of the qualitative and quantitative terminology

Qualitative¤	Quantitative¤
Credibility¤	Internal·validity¤
Transferability¤	External·validity¤
Dependability¤	Reliability¤
Confirmability¤	Objectivity¤

Source: Du Plooy-Cilliers *et al.* (2021)

As with any research study there are always assumptions, limitations, and delimitations that should be highlighted.

1.10 DELIMITATIONS AND LIMITATIONS OF THE STUDY

The current research study made the assumption that school participants have a basic knowledge pertaining to the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996. The study further assumed that the HEWS of 2006 discussed in detail in Section 3.4 has been implemented in schools. Communication was conducted in English in both written and verbal format. It was presumed that participants were able to rate their knowledge pertaining to occupational school safety in relation to the OHS Act No. 85 of 1993.

1.10.1 Delimitations

Delimitations are the boundaries of the research based on the researcher's decision of what to include and exclude in the study. It is those characteristics that limit the research scope and explain why specific choices have been made and why others

may have been excluded. It also refers to aspects that are beyond the control of the researcher (Korrapati, 2016; Alexander, 2020: 13). Delimitations are concerned with the theoretical background of the study, research objectives and research questions. According to Theofandis and Fountouki (2019:157), delimitations do not refer to "why I did this" but rather to "why I did not do it like this". The following delimitations are listed for the current study:

Public secondary schools in Gauteng

A delimitation to the study is that the study was conducted in secondary public schools. Due to the vast number of schools (24 900) in South Africa in 2020, the study was limited to public secondary schools (Statista.com, 2022a). Furthermore, due to financial restrictions the study was limited to Gauteng.

Geographical location of schools in South Africa

In 2021 South Africa has over 24 900 schools, of which 6 000 are secondary schools with a scholar-to-teacher ratio of 32:6 in government schools (Schools4sa, 2021a). KwaZulu-Natal has the highest number of schools with 6 022 schools, whilst the Northern Cape has the lowest number with 614 schools. Gauteng ranges in the middle with approximately 2 606 schools (Schools4sa; 2021a; Statista,com 2022a; 2022b).

Classification of schools in South Africa

Schools are classified into primary and secondary schools. This is further complicated by the categories of schools regarding public or government versus private schools and home schooling. A further limitation of the study is the exclusion of private schools and home schooling that will not be addressed in this study.

1.10.2 Limitations

Limitations are the shortcomings and weaknesses identified during the research methodology that may impact the interpretation and application of the study (Korrapati, 2016; Ross & Zaidi, 2019:261). A limitation is an 'imposed' restriction that is beyond the researchers' control, and may affect the study design, results, and ultimately, the findings and recommendations (Theofandis & Fountouki, 2019:156). Listing these limitations as part of the research methodology reflects honesty, transparency, and shows that the research was understood. Limitations discuss unanswered questions in the study, for example, whether another method of data collection would have given

a more beneficial result (Editage insights, 2019b). The following limitations were identified for the current study:

Research in school safety

Limited scientific research has been conducted within South Africa and BRICS nations relating specifically to school safety. Most literature, inclusive of newspaper articles, addresses school safety in relation to the security safety aspect, and not legislated safety as prescribed by the OHS Act No. 85 of 1993.

Due to the limited availability of scientific research related to school safety in South Africa and BRICS nations, the researcher was dependent on literature sources older than five years, as well as internet-based literature. This has also led to the repeated use of the same literature sources when arguing aspects of school safety in the study.

Knowledge, attitude, and perceptions of educators

This study was based on the knowledge, attitudes and perceptions of school principals and educators regarding legislated school safety, and the understanding that school principals and educators have knowledge pertaining to the OHS Act No. 85 of 1993.

Participation

Participants in the study included school principals, deputy head principals, HoDs, as well as educators. The exclusion of scholars, due to the ethical implications, is a limitation, as valuable information could be gained from their perspectives regarding occupational school safety. In addition, parental inclusion could have added an external contribution towards perspectives on school safety and may be an area for future research.

Secondary data

The researcher also had no control over the secondary data and the sources where the information was collected from, as scientific research (secondary data) conducted within South Africa relating specifically to school safety is limited and outdated, causing secondary data to be a limitation for the study. As such, the study made use of prescriptive legislation of the OHS Act No. 85 of 1993 versus safety implementation as prescribed by the SASA No. 84 of 1996. A limitation on older legislative prescripts, such as the Factory Bill of 1802 and other legislation written in the 1800s and early

1900s related to the primary source could not be sourced online. A further limitation of the study is the dependency of legal prescripts older than five years.

The next section reviews ethical considerations of the study as it involved human participation.

1.11 ETHICAL CONSIDERATIONS AND ETHICAL CLEARANCE

Ethics is defined as an individual's value used to interpret whether a specific action or behaviour is acceptable or not (Stanwick & Stanwick, 2016:2). As the human factor was involved in the study, ethics played a crucial part throughout the study.

The University of South Africa's (UNISA's) code of ethics and conduct was followed for the duration of the study, where ethics is outlined as a value, principle, norm and standard to promote and conduct activities. The UNISA ethical values include respect, integrity, accountability, justice, fairness, objectivity, and excellence (UNISA, 2007:1). The policy on research ethics at UNISA outlines basic principles for research where the beneficence principle relates to the research contribution regarding the welfare of people, whilst non-maleficence relates to no harm caused to the participants. The final principle is justice regarding a fair distribution of the study (UNISA, 2016:11). The policy addresses general ethics principles that outline aspects of relevance and essentiality, social justice, maximum public interest, commitment, competence, and ability to conduct research. It also outlines the protection of the rights and interests of participants and the institution, respect for participants, informed consent, and cultural respect (UNISA, 2016:11-12).

Ethical clearance for the study (CRERC_031) was approved by the College of Economic and Management Sciences (CEMS) at UNISA in 2019 and updated in 2021 (Annexure D-1 and Annexure D-2) due to the Covid-19 implications and resulting changes to data collection. Participation in the study was voluntary, and educators of selected public secondary schools were required to complete a consent form that outlined the aspects of the study and signed a confidentiality clause. The researcher was committed to maintaining the anonymity and confidentiality of educators and reported the findings in an honest manner with no personal information disclosure. The researcher avoided plagiarism by referencing all sources used and paraphrasing and contextualising information. In addition, the researcher obtained annual

permission from the GDE (Annexure C-1 (2019) and Annexure C-2 (2020)) to conduct the study in the identified Gauteng schools. Furthermore, permission to conduct the study was obtained from school principals of the selected Gauteng secondary schools. Conditions for conducting research are outlined by the Gauteng Department of Education (GDE) in Annexure C-1 (2019) (paragraph 5) and Annexure C-2 (2020), (paragraph 5).

Field workers were required to sign a confidentiality agreement. Ethical considerations were part of the entire research process, and the researcher strove to abide by these ethical values and conduct. In addition, the statisticians signed a confidentiality agreement.

Ethical considerations extend to considering how the information collected from the interviews and the questionnaire will be managed and stored. The Promotion of Personal Information Act (POPI) No. 4 of 2013 was promulgated to ensure that South African institutions manage personal information in a responsible manner when collecting, processing, and storing information from data-subjects (South Africa, Western Cape, 2013). Analysed interview guides and questionnaires have been stored in relation to the requirements of the POPI Act No. 4 of 2013 (South Africa, 2013). The next section provides an overview of the chapter outline of the study.

1.12 CHAPTER OUTLINE

The chapters in the thesis were presented as follows:

Chapter 1: Introduction and background

This chapter presented an overview and summary of the study to briefly introduce the content of the study outlining the research questions, research objectives, problem statement, research significance, hypotheses, literature review, research design and methodology, data collection and analysis, validity, reliability, delimitations, limitations, and ethical considerations.

Chapter 2: Occupational health and safety legislation

This chapter focuses on the OHS legislative requirements of the Constitution of South Africa. It begins with an historical overview of safety and looked at safety theories. It

reviews the development of safety and addresses legislative safety aspects related to the rights of educators in relation to legislation. Chapter 2 aspires to bring the OHS Act No. 85 of 1993 and the supporting safety regulations into a school context related to the legal imperatives as prescribed by each.

Chapter 3: School legislation and school safety

This chapter reviews the literature relating to school legislation with reference to the SASA No. 84 of 1996, to identify safety aspects as required by the South African government. It examines the NSSF of 2015 and the HEWS school safety toolkit of 2006, and how the DBE implements school safety within a South African context. It explores international school safety based on school safety management in Australia, the UK, the USA and Canada. In addition, the chapter reviews the Worldwide Initiative for Safe Schools (WISS) and continues with an examination of school safety in developing countries with an exploration of school safety in the BRICS (Brazil, Russia, India, China and South Africa) nations.

Chapter 4: Research methodology

Chapter 4 chapter presents the problem statement, research questions, research objectives and hypotheses. It discusses the research methodology applied to the exploratory sequential mixed method research and explores the two-phased approached used in the study. Phase 1 (Section 4.6) explores the qualitative research methodology, while Phase 2 presents the quantitative part of the study (Section 4.7). The chapter examines the research methodology, research design, research philosophy, population and sample, measurement instruments, pre-testing, data collection, data analysis, validity and reliability, delimitations and limitations and ethical considerations in more detail.

Chapter 5: Phase 1. Qualitative data analysis and results

This chapter presents a discussion of the qualitative data analysis (Phase 1) in an attempt to dissect and scrutinise the data to answer the research questions and research objectives. The chapter scrutinises the data collected from the interviews through thematic analysis identifying code groups and frequencies (Annexure E-2), memoing in Atlas.ti, word cloud (Figure 5.5) and data saturation to link data to the research questions and hypotheses.

Chapter 6: Phase 2. Quantitative data analysis and results

This chapter presents a discussion of the quantitative data analysis (Phase 2) in an attempt to test causal relationships, make predictions, and generalise results to a broader school population. The chapter scrutinises the questions from the questionnaire with the use of SPSS to link data to the research questions and hypotheses.

Chapter 7: School safety management framework (SSMF)

The chapter begins with a review of the research significance and research objectives to explore the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety. A summary of the findings from the qualitative (Phase 1) and quantitative (Phase 2) research follows. The chapter continues with the development of a framework for school safety that the DBE, GDE and SGBs, and school managers can use to ensure legal safety compliance. The proposed school safety management framework (SSMF) has been developed as a flexible and dynamic tool for the execution of safe school operations. The SSMF is comprised of 12 building blocks: six primary and six supportive building blocks, as illustrated in Figure 7.1 and Table 7.1.

Chapter 8:   Conclusion and recommendations

This chapter presents a summary of the research, discusses the research implications and significance to answer the primary objective related to the exploration of the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety. A summary of the research ethics outlines the research principles that were followed in the study. In addition, the chapter outlines several recommendations to the DBE and GDE to assist with the implementation of and compliance to occupational school safety. The final section (Section 8.8) outlines areas for future research, and the concludes with an expectation that through the implementation of the SSMF all schools could be legally compliant with the OHS Act No. 85 of 1993 and its supporting regulations.

Figure 1.3 presents a flow diagram of the chapter outline.
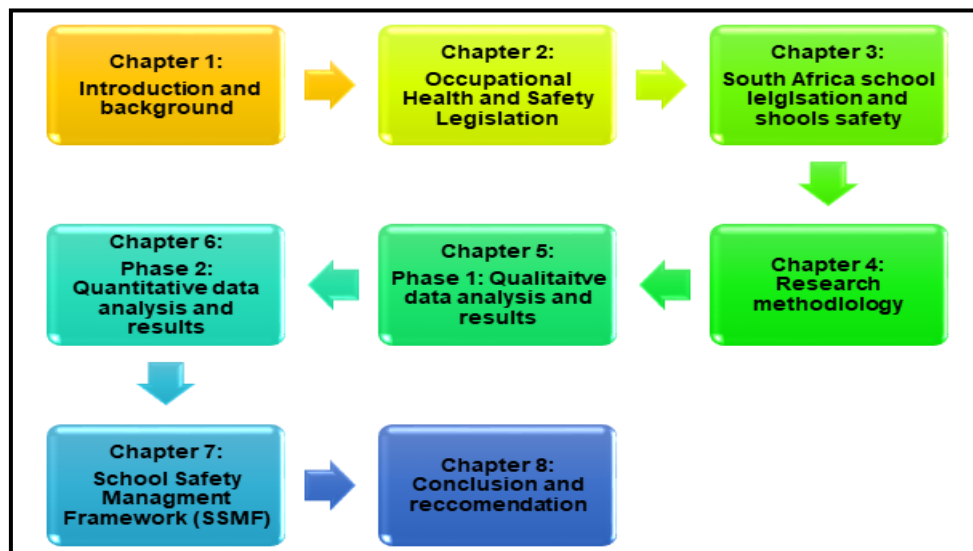
Figure 1.3:   Chapter outline

Source: Researcher's own compilation

1.13 CONCLUSION

This chapter presented an overview of and background to the research related to school safety in South Africa, where it outlined several key safety concepts. The chapter discussed the significance of the study, the problem statement, research objectives, research hypotheses, and contribution of the study. This was followed by a literature review that examined safe schools and the South African perspective on safe schools. The literature review explored school safety under the DBE and discussed the SASA No. 84 of 1996 in relation to the implementation of safety. This was followed by an investigation into the NSSF of 2011 and the educators' and scholars' right to a safe school environment, provided an overview of school safety research studies and reviews of school safety in developed and developing countries, inclusive of BRICS. The chapter presented a discussion of the research design and methodology, research philosophy and approach, population and sample and explored the research instruments used in the qualitative (Phase 1) and quantitative phase (Phase 2) of the study. The chapter continued with a discussion of the data collection and data analysis procedures that were implemented, setting the foundation for descriptive and inferential statistics. This was followed by a discussion of validity, reliability, delimitations and limitations to the study, and the ethical considerations of the study.

The next chapter presents a review of the relevant literature in relation to safety legislation, and how the OHS Act No. 85 of 1993 links to a school environment.

CHAPTER 2:
OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION

CHAPTER 2. OVERVIEW

- INTRODUCTION
- HISTORICAL OVERVIEW OF SAFETY AND THE DEVELOPEMENT OF SAFETY LEGISLATION
- SAFETY RISK THEORIES
- DEVELOPMENT OF SAFETY LEGISLATION
- SOUTH AFRICAN LEGISLATION
- OCCUPATIONAL HEALTH AND SAFETY (OHS) ACT NO. 85 OF 1993
- OCCUPATIONAL HEALTH AND SAFETY (OHS) ACT NO. 85 OF 1993. SAFETY REGULATIONS
  - General Administrative Regulations
  - General Safety Regulations
  - Asbestos Regulations
  - Environmental Regulations for Workpalces
  - Facilities Regulations
  - Regulations for Hazardous Chemical Substances
  - Noise-Induced Hearing Loss Regulations
  - Ergonomics Regulations
  - General Machinery Regulations
  - Pressure Equipment Regulations
- SAFETY MANAGEMENT SYSTEMS (SMS) AND FRAMEWORKS
  - South African National Standards (SANS) 31000 of 2009
  - South African National Standards (SANS) 45001 of 2018
- SCHOOL SAFETY FRAMEWORKS
  - National School Safety Framework (NSSF) of 2016
- INTERNATIONAL SAFETY LEGISLATION
  - Australia. Work Health and Safety Act of 2011
  - United States of America: State and Federal Laws
  - Canada: Canadian safety legislation
- BRICS
- SYNOPSIS OF SCHOOL SAFETY FRAMEWORKS
- CONCLUSION

2.1 INTRODUCTION

The primary purpose of this chapter is to explore South African safety legislation, highlighting important aspects of the Constitution of South Africa Act No. 108 of 1996. This Act is the highest law of the country and provides a legal foundation where the rights and duties of South African citizens are outlined. The chapter also reviews the Occupational Health and Safety (OHS) Act No. 85 of 1993 and regulations to explain the legal prescripts in a school context.

The chapter begins with a historical overview of safety legislation, followed by a synopsis of two safety risk theories, the jurisprudence (legal) and safety theory. The development of safety legislation is followed by a breakdown of South African legislation, namely, the OHS Act No. 85 of 1993, and the related safety regulations that are brought into the context of school safety. The chapter reviews aspects of the Constitution of South Africa Act No. 108 of 1996 as the supreme law of the country that forms the legal foundation in South Africa. The chapter reviews safety management systems and frameworks to gain an understanding of available management systems, such as the South African National Standards (SANS) 31000 of 2009 and SANS 45001 of 2018, as developed under the International Organisation for Standardisation (ISO), and frameworks that are being used across the globe.

The chapter continues with a review of international safety legislation related to schools to gain a perspective on how the UK, Australia, the USA, and Canada implement safety legislation in schools. A discussion of the South African National School Safety Framework (NSSF) of 2016 is followed by a synopsis of school safety frameworks. The chapter finally presents a summary of the BRICS nations and school safety.

The next section presents a historical introduction to the development of safety legislation.

2.2 HISTORICAL OVERVIEW OF SAFETY AND THE DEVELOPMENT OF SAFETY LEGISLATION

The literature suggests that safety has been in existence since creation and is not something new. Any study on safety needs to firstly, gain an understanding of the past and where safety began. It gives safety professionals a sense of perspective and

continuity. A review of the literature on historical safety developments indicate that safety studies can be dated back as early as 2000 B.C. to ancient Babylonian times. One such historical document is known as the *Code of Hammurabi* (Code of Hammurabi, n.d.; Goetch, 2011; Pearson Higher Education, n.d.; Rielander, 2012:34; History.com, 2020b). Most of the labour during this time was conducted by slaves. The evidence that remained in the temples shows that slaves were not treated well, as can be seen in the Code of Hammurabi that addressed aspects of injuries and a fee paid to doctors for medical services. The code covered money paid by those who caused injuries (employer) to slaves (employees), where a doctor's fee would incur ten silver shekels for a gentleman, five shekels for a freedman, and two shekels for a slave (Code of Hammurabi, n.d.; Pearson Higher Education, n.d.; Goetch, 2011; History.com, 2020b).

An Egyptian ruler of note was Ramazzini (1633-1714), a physician and professor of medicine. He promoted research in various areas which is still relevant today, such as the measurement for improving ventilation in the workplace, the impact of rest periods during work, better posture (ergonomics) application, personal hygiene and various occupational diseases based on chemical exposure (Pearson Higher Education, n.d.; Goetch, 2011; Rielander, 2012:34;).

The First Industrial Revolution which began at the end of the 18th century is a good starting point when reviewing the historical development of the safety movement. During the First Industrial Revolution, the economy was changed from agriculture to industry with the introduction of machines in factories and the invention of the steam engine. This changed the perspective on safety, and demonstrated depressing social conditions and environments, unhealthy and deplorable working conditions, slums, and the dangers of child labour, which together with malnutrition, signified safety concerns. It led to an increase in safety hazards, risks, and the occurrence of more injuries and diseases (History.com, 2020a).

Safety equipment during this era was rare, and pollution was high. The lack of ventilation, heating, and poor sanitary facilities were a common occurrence, which gave rise to unhealthy and unsafe working conditions (Pearson Higher Education, n.d.; History.com, 2020a). Child labour during the First Industrial Revolution was common, and school attendance was not a priority (Quora, n.d.). Children were required to work from an early age to help support the family (Rumsey, n.d.; History Crunch, 2021).

The Second Industrial Revolution (IR 2.0) began at the end of the 19th century and was driven by the discovery of electricity, gas and oil and the invention of the combustion engine. The development of the combustion engine saw many new inventions, such as motor vehicles, trains and aeroplanes. In addition, mechanical production increased. At the same time, steel and chemical-based products entered the market. The development of the telegraph, and later the telephone, saw new technological developments. During this time there was no legislation to make workplaces safe, and people (labourers) were often women and children used as cheap labour. Factories (workplaces) were dusty, dirty and dark, and safety hazards were everywhere (Historyonthenet, 2019; ARYU Networks, 2020).

The Third Industrial Revolution (IR 3.0) began during the second half of the 20th century and opened the arena of electronics and nuclear power that increased in both the USA and the UK. The IR 3.0, according to research, was fully evolved in 2012. During IR 3.0, wages were low, and employees easily replaced as unemployment was on the rise (Historyonthenet, 2019; ARYU Networks, 2020).

The Fourth Industrial Revolution (Industry 4.0) has seen the advancement of technologies with a shift to renewable energies such as solar power, wind and geothermal energy, and an acceleration of digital technology in the form of cell phones and internet. This, on its own, has paved the way for cloud technology and artificial intelligence. In Africa, the digital revolution is not just about technology but could be a powerful tool to make manufacturing more effective. This became even more critical during the Covid-19 pandemic, as industries needed to adapt, evolve, and innovate (Alexander, 2021; Floyd, 2021).

Industry 4.0 is, however, taking priority over the needs of humanity, and profit is taking priority over purpose and safety. With this revelation, industry has begun to recognise the shift, and attempts are now being made to use technology and innovation to service and improve humanity, while the Fifth Industrial Revolution reacts to advancements in Industry 5.0. The main fear of Industry 4.0, namely, that humans in the workforce will be replaced with technology will be addressed by Industry 5.0 which aims to put humans back into the workplace (ARYU Networks, 2020; Floyd, 2021). Industry 5.0 plays a vital role in identifying solutions to resource, climate change and social stability challenges. It helps to recognise the power of industry to become a strong provider by making employers respect the boundaries of the planet and by

placing the well-being of the employee at the center of the process (Xu et al, 2021:530).

From the foregoing discussion related to the historical overview of safety and the industrial revolutions, it is vital that the development of safety legislation is understood. To understand safety and legal compliance requirements, various safety theories are considered.

2.3   SAFETY THEORIES

A framework is a blueprint of any research that forms the structure that reinforces the scholarly research theory (Stewart & Klein, 2016:616; Labaree, 2021). It is a lens through which the researcher views the study and allows the researcher to conceptualise the study (Ahmad, 2019:3 and 6). Theory is defined as an idea to explain or understand a concept. It describes the research question and predicts or challenges existing knowledge (Stewart and Klein, 2016:616; Labaree, 2021). The next section presents a discussion on two safety theories relevant to the current study.

2.3.1   Jurisprudence (legal) theory

Jurisprudence or legal theory relates to the study of law and constitutes the principles of law that are enforceable in a court of law. In addition, a legal theory aims to provide a framework of moral, societal, philosophical and legal discourse (Wade, 2019). The purpose of legal research is to expose complex legal problems to legal solutions. The fundamental legal research theory that was studied for the purposes of the current study allowed the researcher to gain a deeper understanding of safety law. Ako and Olawuyi (2017:237) stated that a legal theory is a coherent group of developed propositions explaining and supporting a legal question. These authors further stated that well-tested legal theories include natural law and constitutionalism (Ako & Olawuyi, 2017:230, 237).

The legislative theory of a human institution (school) endeavours to explain the fundamental facts regarding the institution (school). These theories are divided into descriptive or normative categories. A descriptive theory describes how the institution (school) works and was structured to review the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature, extent, and implementation of legislated school safety. The normative theory provides action and

procedures to answer practical questions and to set the foundation of the normative theory that explains goodness, fairness, justice of what is right (Burgess-Jackson, 2021:229).

The next theory of note in a school context is safety risk theory.

2.3.2 Safety risk theories

With the inception of the OHS Act No. 85 of 1993, it was stated that safety should be at the core of all activities in any workplace, inclusive of schools. However, safety research has followed a pragmatic approach, were today's research reviews safety and security individually and independently. As such, each discipline and department has its own research concerning safety and security. According to research it is not possible to integrate international and information security, fire safety, and work health and safety, as the content cannot be combined and is not cooperative (Lukas, 2016:146).

Within the safety milieu, safety risk theory has been widely used in several scientific disciplines based on threat and risk identification, and serves as the means of risk management and of controlling these threats and risks. As such, risk management is an essential element in safety and security as its focus is on minimising the risk, impact, and damage caused by these threats and risks. The safety risk theory is thus used as a methodology to determine the possible negative impacts which could cause harm and/or destruction, and allows an organisation to quantify the risk. The safety risk theory is linked to risk management and can be used in various fields, including education, to develop theoretical and practical applications to address threats and risks. Safety and security can apply the risk theory to protect the physical, information, administrative, and crisis aspects of safety and security (Lukas, 2016:147).

Schools are daily responsible for the health and safety of every scholar in the school. In today's dynamic world, an effort should be made to integrate safety and security (Figure 2.1) to provide a common framework to manage all kinds of risks. Various theories have been identified based on long-term research for developing an integrated framework. These theories include, but are not limited to, the risk theory, crisis theory, casualty theory, and the domino theory related to the sequence of incidents and accident causation and control (Gov.uk, n.d.; Lukas, 2016:150; IRMI, 2021).

Figure 2.1: **Theory of safety**

Source: Adapted from Lukas (2016:150)

According to the International Labour Organization (ILO), 2.78 million employees die annually due to occupational-related injuries and disease, accounting for 5% of global deaths. Every person is exposed to hazards on a daily basis, as we constantly interact with several hazards and risks at work and home (Fasanya, 2020:1; ILO, 2022). A school environment is no different.

In 1931, Heinrich developed a set of safety theories, known as the "axioms of industrial safety". One such theory purports that accidents are a chain of events of unsafe acts and/or conditions. Heinrich described this chain of events as the domino effect (theory), where one event would lead to the collapse of the next event (Heinrich, 1931; Fasanya, 2020:1). Heinrich also developed the accident pyramid theory (Heinrich's pyramid) (Figure 2.2) for industrial accident prevention in 1931. This theory indicated that one out of every 300 accidents with no injuries would result in one fatality, and at least 29 of those would result in a minor injury (Klatt, 2019).

In 1966, Bird reviewed the Heinrich pyramid theory of 1931 (Figure 2.2). Bird proposed that for every 600 near-miss accidents that went unreported, there would be one serious/catastrophic accident. Bird and Germain (1966:5) further stated that for every 600 near-miss accidents there would be 30 that results in property damage and 10

that would result in minor injuries. He also argued that reducing the number of minor accidents and near-misses would significantly decrease major and serious accidents (Bird & Germain, 1966:5; Opus Kinetics, 2020). This can apply specifically to the numerous school incidents that have occurred in South African schools and the potential number of near-misses, and unreported structural incidents (Dlamini, 2019).
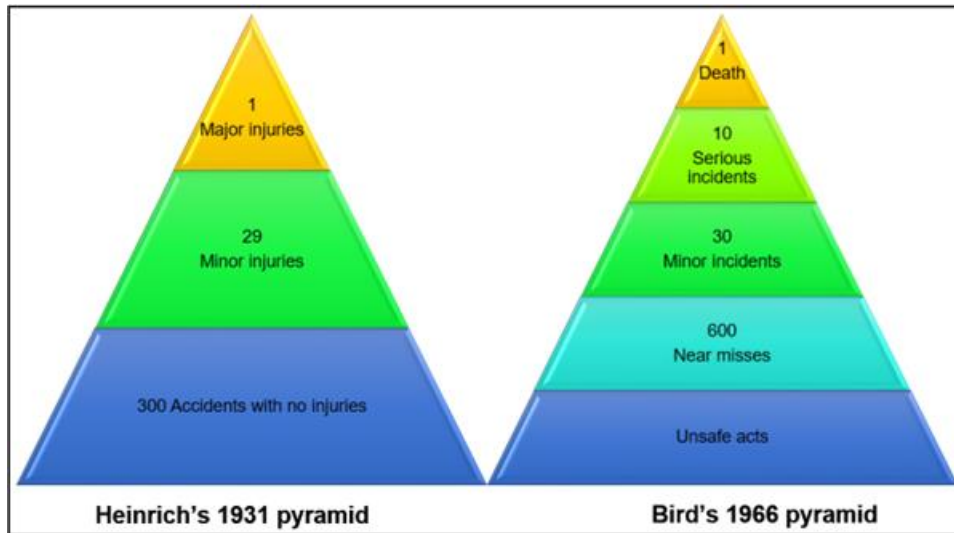
Figure 2.2:   Heinrich's 1931 pyramid versus Bird's 1966 pyramid

Source: Adapted from Klatt (2019)

Another of the safety risk theories is the ABC Theory of Safety, where the ABC represents attitude, behaviour, and conditions that allows research to understand what influences safety behaviour. It is argued that employee behaviour is the ultimate factor in workplace safety as it plays a vital role in tasks performed by employees, either negatively or positively. For example, consider an educator's behaviour who arrives at school in a bad mood due to having had an incident on their way to school. The educator's attitude and behaviour (bad mood) could manifest as antagonism, irritation, or even aggression in the classroom. The condition in the classroom as a result of the educator's attitude and behaviour (consequence) could result in unruly scholars in the classroom that could lead to potential injuries (Agir, 2019:204; Darling-Hammond *et al*, 2020; Grindle & Gwilt, 2020:98).

The next section presents a discussion on the development of safety legislation.

2.4   DEVELOPMENT OF SAFETY LEGISLATION

The success of safety depends on legislation to guide and enforce safety across all industries, such as, government institutions and manufacturing industries. The first Factory Bill was adopted by Sir Peel (1841-1850), a British congressman who served as the Prime Minister of the UK. He promulgated a limitation of working hours to 12 hours a day. The Factory Bill of 1833 required the installation of ventilation and lime washing of workplaces. The Factory Bill later became the Health and Morals of the Apprentice Act (42 Geo III c. 73) of 1802. The Factory and Works Act (Althorps Act) of 1833 required factory inspections and "medical men" (doctors) to conduct investigations on industrial accidents. It attempted to regulate working hours, especially for child labour, between the ages nine and 13 years, to 10 hours a day (Bennett, 2018; National Archives UK, 2019). The Factory and Works Act of 1833 also legislated that children working in factories were to receive two hours of education per day. In 1844, the Ragged Schools Union was established whereby schooling was offered to poor children; school attendance was made compulsory in 1880 (Quora, n.d.; Kotinsky, 2019).

In 1883, the protection of life and limb was included in the Precious Stones and Mineral Mining Rights Act No. 19 of 1883 (Bennett, 2018). The remainder of the 1800s saw the promulgation of various forms of legislation. By the end of the 1800s persons employed in dangerous occupations were required to undergo compulsory medical examinations by a certified surgeon, and notification of industrial diseases was required (Baker & Coetzee, 1983; Rielander, 2012:35).

The first workers' compensation legislation that was promulgated in 1902 in Maryland, a mid-Atlantic region of the USA, was followed by a public response in 1906 that led to the protection of employees against unsafe working conditions (Baker & Coetzee, 1983; Guyton, 1999:108; Rielander, 2012:35; Insureon, 2019). This was followed by the Mines and Works Act No. 12, promulgated in 1911, to control mining conditions (Bennett, 2018), and the American Standards Association in 1918, responsible for the development of standards at home and the workplace (ANSI, 2018, 2021). The Factories Act No. 28 of 1918 included maternity benefits for factory workers.

In 1941, the Factories, Machinery, and Buildings Works Act No. 22 replaced the Factories Act No. 28 of 1918. In the same year (1941), the Worker's Compensation

Act No. 30 of 1941 allowed for compensation to be paid as a result of workplace incidents and some industrial diseases (Government Notice (GN) 394, 1994; Bennett, 2018).

In 1952, the Coal Mines and Safety Act (CMSA) (Public Law 82-552) was promulgated. In 1968, the USA's President Johnson appealed for the promulgation of federal occupational safety and health laws. In 1970, President Nixon signed the Occupational Safety and Health Act No. 738 of 2002 (OSH) Act (Public Law 91-596), which led to the development of the OSHA administration, as well as the introduction of the National Institute for Occupational Safety and Health (NIOSH) (Baker & Coetzee, 1983; Rielander, 2012:35; NIOH; 2021). The National Research Institute for Occupational Disease (NRIOD) was established in the 1950s, mainly for the study of occupational diseases (Rees, Ross & Davies, 2006; NIOH, 2019), while the Association of Societies for Occupational Safety and Health (ASOSH) was established in 1978 (Bennett, 2018).

In 1983, a shift in legislative focus took place in South Africa. The focus was more on OHS with the promulgation of the Machinery and Occupational Safety (MOS) Act No. 06 of 1983, which focuses on the safety of employees at work, excluding conditions of employment (Ruiters, 2015:7). In 1993, there was further development in safety legislation with the promulgation of the Occupational Health and Safety (OHS) Act No. 85 of 1993, which includes both industry and state entities (Ruiters, 2015:7). The OHS Act No. 85 of 1993 refers to the Compensation for Occupational Injuries and Disease Act (COIDA) No. 130 of 1993, which acknowledges specific workplace injuries and diseases (Baker & Coetzee, 1983; Bennett, 2018).

The next section discusses the considerable development in South African legislation in recent years.

2.5   SOUTH AFRICAN LEGISLATION

Occupational Health and Safety (OHS) compliance in South Africa is inadequate and should be broadened to include H&S management as a means of addressing employer-employee conflict within the work (school) environment (Esterhuyzen, 2017:20). Management is defined as how employees get things done, and is divided into the following four uninterrupted and interrelated functions: planning, organising,

leading and controlling (Hatten, 2015:407). Maseko (2016:28) stated that South African legislation does not stipulate a management model for workplace safety, and that the OHS Act No. 85 of 1993, section 8(1) reserves this decision for the judgment of employers. Therefore, safety legislation requires employers to give evidence of responsibility and accountability related to workplace safety (Maseko, 2016:28).

The Constitution of South Africa, which took effect on 4 February 1997, is the supreme law of the country and forms the legal foundation in South Africa (Brand SA, 2017; SA History Online, 2017, 2018). The purpose of a constitution is to set out the social values of the country, to establish the structure of government, their powers and authorities, the rights of the citizens of the country, as well as the relationship between them and government (South Africa, 1996; Paralegal Advice, n.d.). South Africa is a compound country consisting of multiple ethnic groups, cultures, religions, languages, and its complex history needs constitutional principles to protect the rights of every South African citizen (News24, 2015a).

The Constitution is important to every South African citizen, as it guarantees their most basic rights to life, freedom and equality within a democratic system, establishing every citizen's right to education of children in a culture and language of their choice (News24, 2015a). Chapter 2 of the Constitution, the Bill of Rights, addresses aspects of human rights for South African citizens (South Africa, 1996).

The Bill of Rights relates to all laws and should be adhered to by all branches of government and government bodies. It protects South African citizens and establishes equality, human dignity, the right to life, freedom and security. It further establishes the right to an environment (section 24) that is not harmful to the health and well-being of a person (South Africa, 1996:1). Children's rights are outlined in section 28 of the Bill of Rights, while section 29 outlines aspects of education, where every child has the right to basic education (Paralegal Advice, n.d.; South Africa, 1996:13-14).

The Constitution of South Africa and the Bill of Rights lay the foundation for all other laws established in South Africa. With reference to the rights of each South African citizen, an important law is the OHS Act No. 85 of 1993 and the related safety regulations to ensure the health and safety of employees in the work environment, as well as other persons who may be affected by an organisation's unsafe acts and/or unsafe conditions.

With the importance of the historical overview of safety and the development of safety legislation, it is essential to link the South African safety legislation, namely, the OHS Act No. 85 of 1993, and the related safety regulations into the context of school safety in South Africa.

2.6 OCCUPATIONAL HEALTH AND SAFETY (OHS) ACT NO. 85 OF 1993

Although all aspects of the OHS Act No. 85 of 1993 and the regulations (RSA, 1993b) are important for all organisations, this section debates the critical safety legislative requirements pertaining to a school environment. The ambit of the OHS Act No. 85 of 1993 applies to most industries and areas of employment activities, as well as the use of machinery in South Africa (Benjamin, 2011:25; Labour guide, 2018a). This section provides context to the legal requirements of a school environment in relation to the OHS Act No. 85 of 1993.

The OHS Act No. 85 of 1993 comprises of 50 sections and 22 safety regulations, which are sub-divided into four groups, namely, general, health, mechanical and electrical (RSA, 1993b). The purpose of the OHS Act No. 85 of 1993 is to provide for the health and safety of persons at work and the protection of persons other than employees against hazards to their health and safety arising from the workplace (RSA, 1993b; Lexis Nexis, 2017:7). The objective of the OHS Act No. 85 of 1993 is to be proactive regarding the prevention of work-related incidents, accidents, and injuries.

Section 1 of the OHS Act No. 85 of 1993 defines important safety definitions, which helps to understand and interpret the meanings in accordance with safety legislation. The next sections explore the fundamental aspects of the OHS Act No. 85 of 1993 and link it to school safety.

2.6.1 Section 8: General duties of the employees

Section 8(1) of the OHS Act No. 85 of 1993 requires that every school principal as an employer maintains a school environment that is safe and without risk to the health of persons. Section 8(2) of the OHS Act No. 85 of 1993 lists various duties and responsibilities of the school principal (employer), such as ensuring and maintaining the classroom environment that is safe and without risk to the health of educators and scholars. These duties require taking steps to eliminate and mitigate any hazard

and/or potential hazard that may affect the health and safety of educators in the workplace (Darlow & Louw, 2004:12; RSA, 1993b; Lexis Nexis, 2017:9, 2021:9). It is the responsibility of the school principal to ensure the effective management and maintenance of school buildings, inclusive of ventilation, lighting in classrooms, and other facilities that should be in working order and it should be sufficient for the purpose(s) intended (Souls, 2005:65; SACE, 2020:13).

The "scope of authority" as set out in section 8 states that every educator (employee) should receive a written appointment to ensure that they are informed of their legal safety duties and responsibilities (Darlow & Louw, 2004:14; RSA, 1993b; Lexis Nexis, 2021:10).

2.6.2   Section 13: Duty to inform

Section 13 of the OHS Act No. 85 of 1993 relates to the school principals' (employers') duty to inform educators (employees), scholars and other role-players regarding hazards in the school environment (workplace), which could have an impact on health and safety. This section should be read in conjunction with section 8 which addresses inspections and investigations of formal inquiries (RSA, 1993b:17; Darlow & Louw, 2004:19; Lexis Nexis, 2021:11).

The duty to inform employees (educators) regarding hazards and risk is a key responsibility of the employer (school principal), as well as how these hazards and risks are to be managed (Maseko, 2016:29). It is the school principal's duty, in terms of section 13(c), to inform the appointed H&S representatives of any incidents (an occurrence at work (school) which arises out of or in connection with activities), accidents, or injuries that occur on the school premises (RSA, 1993b:18; Darlow & Louw, 2004:19; Lexis Nexis, 2017:9-10).

2.6.3   Section 14: General duties of employees at work

Section 14 is another important section of the OHS Act No. 85 of 1993, as it addresses the general duties of employees (educators) at work. It requires every educator (employee) to ensure the health and safety of him/herself and any other person(s) that could be affected by their actions in the workplace. The purpose of this requirement is to ensure that every educator (employee) has a moral obligation through the responsibility for their actions, which may or may not, result in a safety incident.

Section 14 requires that every educator (employee) cooperates with the school principal (employer) to ensure that the duties prescribed by the OHS Act No. 85 of 1993 are adhered to and complied with. It requires every educator to carry out orders and/or instructions given by the school principal in relation to H&S. Any unsafe act or condition is to be reported to the school principal and/or H&S representatives as soon as reasonably practicable (Darlow & Louw, 2004:20; RSA, 1993b:18; Lexis Nexis, 2021:11).

2.6.4 Section 17: Health and safety (H&S) representatives

Section 17 of the OHS Act No. 85 of 1993 relates to H&S representatives. Every employer with more than 20 employees in any workplace is required to appoint, in writing, H&S representatives (RSA, 1993b; Lexis Nexis, 2021:11). However, this does not mean that employers with less than 20 employees can be negligent in terms of health and safety. Employers are still required to ensure a healthy and safe workplace, irrespective of the number of employees (Darlow & Louw, 2004:24). An appointed H&S representative should be employed on a full-time basis and should be familiar with the workplace for which he/she has been appointed. Section 17 demarcates the legally appointed number of H&S representatives within a given workplace, where the legal appointed ratio is one H&S representative per 100 employees (1:100) for office environments and low-risk workplaces. The legal appointed ratio of H&S representatives is one representative per 50 employees (1:50) in workplaces that have a high-risk environment (RSA, 1993b:20; Lexis Nexis, 2017:11; 2021:12).

Within a school context, the school principal (employer) should ensure the appointment of H&S representatives in the context of section 17. When appointing H&S representatives, the school principal should also consider aspects of vacation leave, sick leave, maternity leave, and after-hour activities, such as sport coaching, for educators not being at work. The legal functions (section 18) of appointed H&S representatives within the school environment are required to (1) identify potential hazards, (2) conduct workplace inspections, (3) carry out incident investigations, and (4) investigate any complaint related to H&S within the school environment (workplace) (RSA, 1993b:20; Lexis Nexis, 2021:11-12).

It is important to share the important premise that a H&S representative may not be held civilly liable for any act/omission in relation to the OHS Act No. 85 of 1993 (RSA,

1993b:18; Lexis Nexis, 2021:12). Civil liability is defined as the person being legally liable and having an obligation to pay for damages, and refers to a person being exposed to punishment for a crime (Boshoff, 2018; Farlex, 2018; Labour Guide, 2018a).

It is the responsibility of the school principal (employer) to consult with the H&S committee(s), which is discussed in the next section, with the aim of initiating, promoting, developing, maintaining and reviewing measures to ensure the H&S of educators and scholars within the school environment (RSA, 1993b:18; Lexis Nexis, 2021:12). It is a legal requirement in the OHS Act No. 85 of 1993 that H&S committee meetings should be held at least once every quarter (three months) and procedures for these H&S meetings are determined by the H&S committee (RSA, 1993b:18; Lexis Nexis, 2021:12).

2.6.5   Section 19 and 20: Health and safety (H&S) committees

Section 19 outlines the H&S committee responsibilities requiring of employer to consult with the H&S committee with the view of initiating, promoting, maintaining, and reviewing H&S measures. In section 19(2)(4) requires that H&S committees meet at least once every quarter. Section 20 of the OHS Act No. 85 of 1993 highlights the functions of the H&S committee. The primary function of the H&S committee is to identify hazards, make H&S recommendations, initiate, develop, promote, maintain, and review measures in the workplace related to the H&S of employees at work (Darlow & Louw, 2004:27). These H&S committee functions strengthen the H&S recommendations to the school principal (employer) through a record-keeping process (RSA, 1993b:23-24; Lexis Nexis, 2021:12-13).

2.6.6   Section 24: Reporting of occupational incidents and diseases

Section 24 of the OHS Act No. 85 of 1993 outlines aspects that must be reported to a Department of Labour (DoL) inspector regarding certain occupational incidents. This section requires that every incident that occurs in a school and results in an unconscious state, the loss of a limb or part thereof, disability, or injury to the extent where a person is unable to work for 14 days, or dies, must be reported within the prescribed period of 24 hours, but no later than seven days after the injury (RSA, 1993b:27; Lexis Nexis, 2021:13).

2.6.7 Section 25: Reporting of occupational diseases

Section 25 relates to the reporting of occupational diseases to the chief inspector by any medical practitioner who examines and medically treats a person (educator or scholar) for any occupational disease, as outlined in the Compensation for Occupational Injuries and Disease Act (COIDA) No. 130 of 1993, schedule 2. As the COIDA No. 130 of 1993 relates to compensation for occupational injuries and diseases, it should be read in conjunction with sections 24 and 25 of the OHS Act No. 85 of 1993 in the event of a reported work-related injury and/or disease (Darlow & Louw, 2004:32; RSA, 1993a; Lexis Nexis, 2017:14). The COIDA No. 130 of 1993 will not be discussed in this study as the focus is on the implementation of safety in relation to the OHS Act No. 85 of 1993.

2.5.1 Section 37: Acts or omissions by employees and contractors

Section 37 focuses on the acts or omissions by employees, contractors, and sub-contractors. This section relates to activities which the employer (school principal) did not approve, and which were not in the employee's/contractors scope of work, and where the employer (school principal) took all the required actions to prevent unsafe acts (Darlow & Louw, 2004:42; Lexis Nexis, 2021:17).

2.6.8 Section 43: Regulations

Section 43 of the OHS Act No. 85 of 1993 focuses on prescribed regulations attached to this Act (Darlow & Louw, 2004:47; Lexis Nexis, 2021:19) which is discussed in detail in relation to a school environment in Section 2.7.

2.6.9 Section 47: State-bound

Section 47 binds the state to the requirements of the OHS Act No. 85 of 1993. The State is the employer in accordance with the OHS Act No. 85 of 1993. The Director-General of each State department is regarded as the Chief Executive Officer (CEO), as prescribed in section 16.1 by the OHS Act No. 85 of 1993. Bringing this into a school context, the Gauteng Department of Education (GDE) is regarded as the CEO and employer, and is thus legally obliged to comply with the OHS Act No. 85 of 1993 and regulations (Darlow & Louw, 2004.:49; Lexis Nexis, 2021:20).

By reviewing the purpose of the OHS Act No. 85 of 1993 and all sections described above it should be noted that within a school environment, it is essential that the minimum safety legislative requirements should provide for the health and safety of educators and scholars and their protection. Unsafe and unhealthy practices impact the health and safety of educators and scholars, thus imposing considerable compensation costs related to occupational injuries and diseases. Therefore, with the inception of the OHS Act No. 85 of 1993, regulations were developed to address the responsibilities related to health and safety. The next section explores safety regulations, as linked to the OHS Act No. 85 of 1993 in relation to school safety.

2.7 OCCUPATIONAL HEALTH AND SAFETY (OHS) ACT NO. 85 OF 1993: SAFETY REGULATIONS

A safety regulation is a legally prescribed document issued by the government to carry out legislation and prescribes the employer's workplace safety responsibilities (West's Encyclopedia of American Law, 2018; Bolton, 2021:5). The OHS Act No. 85 of 1993 has four categories under which specific regulations have been adopted, namely, general, health, mechanical and electrical.

Not all the regulations adopted in the OHS Act No. 85 of 1993 apply to a school environment. An analysis of the regulations in the OHS Act No. 85 of 1993 that have an impact on a school environment are highlighted in Table 2.1. Although all the regulations are important, not all will influence a school environment, and only those regulations that have a low, moderate, or critical impact on a school environment, are highlighted in Table 2.1.

Table 2.1: Analysis of the OHS Act No. 85 of 1993 regulations in relation to a school environment

General	Impact
General Administrative Regulations (GARs)	*
General Safety Regulations (GSRs)	**
Major Hazardous Installations Regulations (MHIRs)	*
Explosive Regulations (ExRs)	*
Construction Regulations (CRs)	*
Regulations on Hazardous Work by Children in South Africa (RsHWCSA)	*
Health	
Asbestos Regulations (ARs)	***
Diving Regulations (DRs)	*
Environmental Regulations for Workplaces (ERsW)	**
Facilities Regulations (FRs)	***
Hazardous Chemical Substance Regulations (HCSRs)	**
Lead Regulations (LRs)	*
Noise-induced Hearing Loss Regulations (NIHLRs)	**
Draft Ergonomics Regulations (ERs)	**
Mechanical	
National Code of Practice of Lifting Machine Operators Regulations	*
Driven Machinery Regulations (DMRs)	*
General Machinery Regulations (GMRs)	**
Lifts, Escalators and Passenger Conveyor Regulations (LEPRs)	*
Certificate of Competence Regulations (CCRs)	**
Pressure Equipment Regulations (PERs)	**
Electrical	
Electrical Installations Regulations (EIRs)	*
Electrical Machinery Regulations (EMRs)	*

Legend: * Low impact on a school environment
  ** Moderate impact on a school environment
  *** Critical impact on a school environment

Source: Adapted from Lexis Nexis (2021:5)

The OHS Act No. 85 of 1993 regulations, as presented in Table 2.1, are complex as there are risks in everything, while no industry, inclusive of schools, can guarantee that employees will be free from harm, injury and illness while at work. The level of acceptable risk in schools that ensures a healthy and safe working environment that prevents harm, injury and illness can be measured in two ways: (1) the quality of the

implementation of safety legislation, and (2) the level of resources allocated to ensure quality safety policy implementation (Benjamin, 2011:9).

The enforcement of the aforementioned safety legislation is entrusted to the chief inspector in the DoL, who has the legislative authority to stop any unsafe school-related activities, and close any school due to unsafe and dangerous activities or facilities (Hermanus, 1994:6; Lexis Nexis, 2021:14).

The first regulation appended in the OHS Act No. 85 of 1993 is the General Administrative Regulations (GARs). Within the context of the legal prescript of the OHS Act No. 85 of 1993, reference is made to each regulation as Regulations.) The GARs focus on general safety aspects such as access to premises, H&S committees and representatives, and the conducting and recording of investigations.

2.7.1 General Administrative Regulations (GARs) General Notice Regulation (GNR) 929 of 2003

The GARs expand on the appointment of H&S representatives and the establishment of H&S committees, as outlined in sections 17 and 19 of the OHS Act No. 85 of 1993 (South Africa, 2003a:21; Lexis Nexis, 2017:12, 20). Depending on the size of the school, there could be more than one H&S committee, as the H&S committee is the pivotal point to guide the school regarding the legislative requirements (DoL, 2003a:3).

Due to hidden hazards and risks, high-risk classroom activities, such as science classrooms, require consideration when appointing school and student H&S representatives (DoL, 2003a:5; Persson, 2021). The appointed H&S representatives should be employed full-time by a school and within a specific classroom. Should a student be appointed as a H&S representative they would have no responsibility for the school environment. They are appointed solely to assist with H&S inspections, and should be appointed within a classroom they are familiar and acquainted with (Persson, 2021).

As an employer, the school principal is the accountable authority within a school who should report incidents within seven days, as referred to in section 24 of the OHS Act No. 85 of 1993 (DoL, 2003a:5; South Africa, 2003a:25; Lexis Nexis, 2017:20; Lexis Nexis, 2019:20). These could be incidents such as in a science or biology laboratory, a catering classroom, a technical machine, metal, or woodworking classroom where

there is the possibility of any flying or falling object. After reporting a school-related incident, as identified in section 24 of the OHS Act No. 85 of 1993, it should be investigated by the designated H&S representative (South Africa, 2003a:25; Lexis Nexis, 2017:21; Lexis Nexis, 2019:21). The investigation should establish the cause of the incident and make recommendations on safety measures to be implemented (DoL, 2003b:6). These investigated incidents should be recorded according to the GAR Annexure 1, which spells out how the recording of incidents must be handled (South Africa, 2003a; Lexis Nexis, 2017:21; Lexis Nexis, 2019:21). The investigation should be discussed at the school's H&S committee meetings to prevent re-occurrences and to ensure the safety of school educators and scholars. The administrative aspects of the GARs are universal and multi-purpose, and will influence the legislative requirements within a school environment.

The next regulation residing under the general category of the OHS Act No. 85 of 1993 is the General Safety Regulations (GSRs). The GSRs focus on aspects of first aid, personal protective equipment, the admittance of persons, display of notices and signs, flammable liquids, welding, and soldering, inclusive of other aspects not relevant within a school environment.

2.7.2   General Safety Regulations (GSRs) GNR 1031 of 1986

The GSRs elaborate on aspects of general safety in an organisation and apply to any school. They include aspects such as:

- the issuing of personal protective equipment (PPE),

- the appointment of first aiders,

- the content of first aid boxes,

- working in confined spaces,

- intoxication,

- stacking and storage, and

- the danger of working in areas of fire engulfment.

GSRs address the use of PPE where it is impossible to implement other safety measures (South Africa, 1986; Lexis Nexis, 2021:26). PPE terminology is used holistically to incorporate all aspects of protective equipment and clothing used by an

employee. It is essential that the employer understands that the use of PPE should be the last resort (the last line of defence) (Akass, 1994:242; Appleby & Smail, 2012:24; EHS, 2017). In the context of a school environment, PPE may be required in a classroom setting, such as in a woodworking and/or technical workshop, a catering component, science and/or biology laboratory, and other high-risk classrooms.

Another area of concern is the school grounds and garden facilities, where groundsmen and staff could be exposed to high noise levels from lawnmowers, weed eaters, saws, and other noisy equipment. A consideration is the use of protective clothing against cuts, abrasions, falling and/or flying objects while conducting gardening and similar activities (South Africa, 1986; Lexis Nexis, 2021:25-32).

The GSRs focus on the aspect of intoxication while at work where a school principal (employer) may not allow any person to conduct work-related activities while intoxicated. Should a staff member (employee) be taking medication under medical supervision that could result in the educator being incapacitated, the school principal may not allow such a person to conduct work-related activities if the side effects could constitute a health and safety threat (South Africa, 1986; Lexis Nexis, 2017:24, 2021:25). Intoxication in a school environment may occur amongst educators, scholars, and other members of staff (Wichstrom, 2009:413; Van Hoof, Klerk & Van der Lely, 2018).

A regulation of note residing under the GSRs, is regulation 3, which outlines the provision of first aid, emergency equipment, and procedures. First aid aims to reduce the effects of an injury suffered by any educator or scholar. It requires the school principal (employer) to take reasonable steps to ensure prompt and immediate first aid treatment in cases of injury and/or emergency (Appleby & Smail, 2012:136) for the preservation of life, to relieve pain where possible, and to protect an unconscious person (Government of South Australia, 2019). In addition, this regulation requires that if there are five or more employees, the employer should provide access to a first aid box in the workplace. If there are more than 10 employees, a person with a valid certificate of competence in first aid should be appointed (South Africa, 1986; Lexis Nexis, 2017:25, 2021:26). A certificate of competence in first aid may be issued by the South African Red Cross Society, St Johns Ambulance, South Africa First Aid League, or a person/organisation approved by the DoL's chief inspector (DoL, 2018; Lexis Nexis, 2021:26).

First aiders should be appointed at a ratio of one first aider to every 100 (1:100) educators and scholars (employees) at a school (workplace), as stipulated in the Basic Conditions of Employment Act No. 3 of 1983. The appointed first aider(s) should be readily available on the school premises (South Africa, 1986; Lexis Nexis, 2017:25).

The GSRs require the school principal, as the employer, to clearly and prominently display notices and signs related to the first aid stations, first aiders, and first aid boxes in the workplace. The GSRs outline the minimum requirements of first aid boxes in the GSR annexure (Lexis Nexis, 2017:25, 28). It is the employer's responsibility to determine the first aid box requirements in relation to the identified risks, as well as the number of employees (Appleby & Smail, 2012:137). Considering the composition of schools, appointed, trained and competent first aiders should ensure safe and prompt first aid attention to educators, scholars, and other persons on the school premises.

The GSRs also focus on the use and storage of flammable liquids. This may not have much relevance to a school environment; however, consideration should be given where experiments are conducted in science and biology laboratories. GSRs require from a school principal (employer) to ensure that no flammable liquids are used in areas other than a room or enclosure constructed for this purpose (South Africa, 1986; Lexis Nexis, 2017:25). The researcher's concern regarding a school environment is whether science and biology classrooms have been constructed considering the specifications and standards required for such applications.

Aspects of welding, soldering, flame-cutting, and other similar operations may be found in schools that offer technical subjects, such as wood- or metalwork. The GSRs outline aspects related to activities conducted within an area designed for such activities (South Africa, 1986; Lexis Nexis, 2017:27). Ladders are also mentioned in the GSRs and it is the responsibility of the school principal (employer) to ensure that ladders are constructed of suitable material and are used for the intended purpose. A school principal should not allow any educator, scholar or contractor to use a ladder that is broken, cracked, or with missing rungs/steps, and which does not have any non-slip foot covering (Lexis Nexis, 2017:28).

Ramps are also referred to in the GSRs, and it is required from an employer to ensure that they are constructed according to the National Building Regulations (NBRs), also

referred to as SANS 10400 of 2012 (South Africa, 1986; SABS, 2012:55; Lexis Nexis, 2021:28).

The GARs and GSRs address the general safety aspects within a school environment. For example, the asbestos regulations should be evaluated in a school environment, and is discussed below.

2.7.3   Asbestos Regulations (ASRs) GNR 155 of 2020

Asbestos exposure results from dilapidated conditions of asbestos school buildings (temporary classrooms) that release asbestos fibres into the immediate air. The National Institute for Occupational Health (NIOH) indicates that one in every eight schools in Gauteng contains asbestos (NIOH, 2013, 2017). Many of these asbestos structures have been neglected, and this results in the exposure of asbestos fibres. These loose, exposed asbestos fibres are inhaled by educators, scholars, and other persons in the vicinity (Grant & Otter, 2017a). The exposure to asbestos leads to a health risk, and the development over time of asbestosis, which is a deadly respiratory disease (NIOH, 2017, 2018).

The use of asbestos was banned in 2008 (Grant & Otter, 2017c). The Asbestos Regulations (ASRs) were promulgated in February 2002 to facilitate the sustainable management of asbestos, and the DoL plays an important role in asbestos management in South Africa. The ASRs are an essential regulation that school principals, as employers, should be familiar with, as it focuses on the assessment of exposure.

Regulation 3(a) requires the identification of asbestos by a competent person, as prescribed in the OHS Act No. 85 of 1993. Regulation 4 requires an employer to ensure that a competent person draws up an asbestos inventory, and that all identified asbestos facilities are listed in the asbestos inventory. The requirements of the asbestos inventory are listed in regulation 4(3). Regulation 4(4) requires the review of the asbestos inventory by a competent person every two years, or revised as required in relation to regulation 4(5). Regulations 4(8) and 4(9) stipulate the requirements for the removal of asbestos by a registered asbestos service provider, and the potential exposure to air-borne asbestos fibres. Regulation 4(10) requires that asbestos structures, as listed in the asbestos inventory, are clearly labelled with signage under regulation 20 (labelling and signage).

An exposure assessment should be conducted every two years, while records should be kept of all asbestos-related products, equipment, and removal, and in accordance with the ARs (South Africa, 2002a; Lexis Nexis, 2017:90, 2021:212). The Minister of Basic Education, as the section 16(1) appointee in terms of the OHS Act No. 85 of 1993, should ensure that the contractor supplies a disposal certificate to the school principal, detailing where the asbestos was removed to ensure that there is no legal liability if the asbestos is incorrectly disposed. The Minister, as the section 16(1) appointee in terms of the OHS Act No. 85 of 1993, is also responsible for ensuring that all educators (employees) undergo medical surveillance concerning the regulation where potential asbestos exposure has been identified (South Africa, 2002a; DoL, 2003a:13a; Lexis Nexis, 2017:94).

The Minister of Basic Education (Angie Motshekga) signed the ARs in 2013, stipulating the minimum school infrastructure requirements and standards that all South African public schools should meet. In addition, asbestos classrooms needed to be replaced with safer prefabricated or brick classrooms over a period of three years (NIOH, 2017) (this has not yet fully taken place). According to the GDE, there is still uncertainty regarding the exact number of school buildings and structures containing asbestos (Grant & Otter, 2017c). Where in 2017 it was estimated that 243 of more than 2 000 public schools in Gauteng had asbestos structures many of these schools are based in townships, such as Soweto, Tembisa, Vosloorus, Mamelodi, Hammanskraal, Thokoza, and Kathlehong. In 2020 there were approximately 214 partially asbestos school listed by the GDE (NIOH, 2021). Furthermore, it may have a health effect on over 300 000 scholars and 10 000 educators, excluding non-educational members (Grant & Otter, 2017a, 2017c).

The DoL requires the Minister of Basic Education, as the employer, to identify asbestos containing structures, facilities, and equipment. The Minister is required to compile a written asbestos inventory (register) to ensure that asbestos is maintained in a good state of repair to ensure that employees are not placed at risk (Grant & Otter, 2017b). Occupational hygienists from the NIOH have expressed the need for the DBE to conduct a risk assessment at every school to determine the number of asbestos structures. The DBE should develop an asbestos management plan to address the concerns relating to asbestos structures (Grant & Otter, 2017b). In 2021 there were still schools (214) with asbestos structurers in Gauteng, clustered mainly in townships

(NIOH, 2021; Shange, 2021). No reference could be found to an asbestos management plan by the GDE or DBE since the promulgation of the ARs in 2020.

Due to the inherent risk of asbestos fibres, it is illegal for the Minister of Education, school district directors, and school principals (employers) to put any educators (employees), scholars, or any other persons at risk of asbestos (NIOH, 2017). The NIOH (2021) has reiterated this by stating that the GDE did not compile inventories or maintenance plans for any of the 214 listed asbestos-containing schools (NIOH, 2021). A statement made by the GDE indicates that all schools containing asbestos structures were to be removed by November 2020 (Grant & Otter, 2017c; NIOH, 2017).

In 2018, members from Equal Education (union) picketed outside the GDE to demand that the Gauteng Provincial Minister of Education (Panyaza Lesufi) replace all asbestos classrooms. According to members of Equal Education, the commitment made for replacing asbestos classrooms by 2020 was insufficient. These members also stated that allowing teaching in asbestos classrooms was 'inhuman' as it exposes educators and scholars to the risk of asbestosis (Postman, 2018).

In 2021, it was confirmed that the eradication of asbestos in schools was moving at a snail's pace. While a spokesperson for GDE stated that there were delays, their commitment to eradicating asbestos in schools remains unshakeable (Shange, 2021). It is the researcher's opinion that the asbestos regulation is an essential piece of legislation that the DBE, the Minister of Basic Education, school district directors, and school principals need to take cognisance of to ensure the safety of educators and scholars.

The literature related to asbestos as outlined in this section, reflects on the safety challenges school principals face to ensure the health and safety of educators (employees), scholars, and other parties who may be affected by the inherent dangers of asbestos structures.

The environmental regulations for workplaces are an additional regulation of importance to ensure safety within a school environment. This regulation addresses aspects of ventilation, heat and cold, lighting, and fire precautions.

2.7.4 Environmental Regulations for Workplaces (ERsW) GNR 2281 of 1987

The Environmental Regulations for Workplaces (ERsW) were promulgated in 1987 as part of the OHS Act No. 85 of 1993. It supports cooperative environmental governance, grounded on the principle that every person has a right to an environment that is not harmful to their health or well-being, as well as the protection of the environment for future generations (South Africa, 1996:11).

Legislation aimed at the prevention of pollution and the prevention of ecological degradation, environmental protection and the health of people includes the National Environmental Management Act (NEMA) No. 107 of 1998; the National Environmental Management Protected Areas Act No. 57 of 2003; the Protected Areas Act No. 57 of 2003, amended Act No. 31 of 2004; and the National Environmental Management Waste Act No. 59 of 2008 (Barnard, Barnard, Massyn & Botha, 2011:9-13; Rhodes University, 2017). Taking these Acts into consideration, there are social, economic, political and ecological considerations related to environmental education. It has evolved internationally as a complex understanding of human interaction with all aspects of the environment (Irwin & Lotz-Sistka, 2014:41).

Furthermore, the ERsW consider the aspect of windows and ventilation, where the school principal (employer) should ensure that the classroom is ventilated either through artificial (air conditioners) or natural (window) ventilation. It should also be confirmed that the air breathed in by educators and scholars does not affect their health and safety. The air within the classroom environment should be free of high concentrations of dust, gases, hazardous biological agents (viruses, bacteria, mould, algae and spores), and carbon-dioxide concentrations. In general, most public schools make use of natural (window) ventilation (South Africa, 1987; Lexis Nexis, 2017:112, 2021:161).

Another environmental issue that needs attention in schools is housekeeping. As housekeeping has not been defined in the OHS Act No. 85 of 1993, nor in the EWsR, it is vital for the purpose of this study that housekeeping should be defined. Housekeeping refers to the physical means of controlling the work environment to eliminate workplace hazards, ensuring that school classrooms are clean, neat and unobstructed by waste material, and that fire hazards are prevented. The ERsW also focuses on fire precaution and means of egress (regulation 9) related to aspects of

evacuation routes, fire doors, and emergency escape stairs from each level, and ensuring that firefighting equipment is in place and serviceable (South Africa, 1987; Lexis Nexis, 2021:161).

The following regulations of importance in a school context are the facilities regulations (FRs) which were promulgated in 2004, and which address aspects related to buildings, such as sanitation, facilities of safekeeping and change rooms.

2.7.5 Facilities Regulations (FRs) GNR 924 of 2004

The Facilities Regulations (FRs) focus on aspects related to facilities or buildings. It should be considered in combination with the application of the NBRs, commonly known as SANS 10400 of 2012, together with the Building Act No. 103 of 1977, as amended in 2011.

The FRs deal with sanitation and the availability of drinking water that should be used in accordance with SANS 10400, Part F is related to site operations. Part P is related to drainage, while Part Q is related to non-water borne means of sanitary disposal (Schefferlie, 2012; SABS, 2012:1).

A problem in South Africa is that children's rights have been compromised, where the DBE and SGBs have failed to address the safety concerns related to pit latrines. In South Africa, more than 3 000 schools still make use of pit latrines (Bhagwan, 2018; Fihlani, 2018; Fokazi, 2021). In 2014, an incident occurred where a five-year old fell into a pit latrine at a school in the Limpopo Province. In August 2018, a five-year old fell into a pit latrine at a school in the Eastern Cape Province, placing the spotlight on school sanitation and the number of toilets per scholar (Bhagwan, 2018).

In 2009, the Minister of Basic Education established norms and standards related to school infrastructure that addressed school facilities, buildings, and sanitation to promote health and hygiene standards, as set by the NBRs, SANS 10400 of 2012, and the Water Service Act No. 108 of 1997 (Section27, n.d.). These norms and standards refer to the unacceptable use of pit and bucket latrines, highlighting the need to address the implementation of appropriate sanitation technology (DBE, 2009).

A national government survey conducted in 2018, found that 3 898 schools made use of pit latrines. Another 3 040 schools had proper toilets; however, pit latrines were still available and accessible on the school premises (Hazvineyi, 2018).

The DBE, with the intervention of President Ramaphosa, has announced a plan for the eradication of all pit latrines in South African schools. The Sanitation Appropriation for Education (SAFE) initiative has indicated that they are working towards eradicating pit latrines at 2 753 schools across six provinces. However, only 903 projects were completed by August 2021 (Yates, 2018; Bhengu, 2021).

Table 2.2 outlines the number of pit latrines versus provincial/municipal latrines in South African schools, as identified from the national government survey (Hazvineyi, 2018).

Table 2.2:   Pit latrines versus provincial latrines in South African schools

	Provincial/municipal latrines	Pit latrines
Eastern Cape	1,598	323
Free State	156	42
Gauteng	0	5
Kwazulu Natal	1,365	1,477
Limpopo	507	853
Mpumalanga	127	278
North West	145	47
Northern Cape	0	15
Western Cape	0	0
TOTAL	3,898	3,040

Source: Adapted from Hazvineyi (2018)

The national minimum norms and standards for school infrastructure set out the minimum requirements related to the number of water closets (WCs) (toilets) per secondary school. Secondary schools require between two to 12 WCs and one to eight water basins for female educators and scholars, respectively, and one to five urinals and one to three water basins for male educators and scholars, respectively, in a school, depending on the number of enrolled scholars and educators. In accordance with the minimum norms and standards for public schools of 2013 all should be brought into compliance by November 2020. However, this date has been repeatedly revised by the DBE, and the last target date was set for March 2022. In this regard, the South African Human Rights Commission (SAHRC) indicates that South Africa has 5 167 schools that do not have proper sanitation facilities (DBE, 2009; Quintal, 2022).

A survey conducted at schools in the Limpopo Province in 2009 indicated that from 18 to 57 scholars were sharing one WC (toilet). The survey revealed that one in every

four schools did not comply with the minimum requirements, while an average of 18 scholars were sharing one toilet (Section27, n.d.). The sharing of WCs, urinals, and water basins required per educator and scholar in the Limpopo Province survey do not adhere to the national minimum norms and standards as set by the DBE.

Part O of SANS 10400 of 2012 refers to the ventilation and lighting requirements in sanitation facilities (SABS, 2012:1). The FRs further requires that the Minister of Basic Education, school district directors, and school principals provide educators with personal safekeeping facilities (Lexis Nexis, 2021:173), which may also be extended to scholars.

As indicated in the FRs, hazardous chemical substances (HCSs) could raise some concerns within a school environment. It is thus imperative that the Regulations for Hazardous Chemical Substances (RsHCSs) in the OHS Act No. 85 of 1993 are discussed, as certain school activities may make use of HCS, with specific reference to biology and science laboratories. The following section focuses on the regulations related to HCSs.

2.7.6 Regulations for Hazardous Chemical Substances (RsHCSs) GNR 1179 of 1995

This regulation may not be entirely applicable to the school context, as HCSs are defined as any harmful, toxic, dangerous, and poisonous substance/liquid, inclusive of irritants, corrosive and asphyxiate (suffocating) substances that present a danger to a person (Lexis Nexis, 2017:124, 2021:218). However, these HCSs could be found in school biology or science laboratories.

The health risk related to exposure to HCSs in the workplace is governed by the RsHCSs, as part of the OHS Act No. 85 of 1993 (OCSA, n.d.a.), and should be read in conjunction with the HCS Act No. 15 of 1973. The Act stipulates the requirements for the control of HCSs related to the application, use, disposal, and dumping of all hazardous substances. An HCS is a harmful and toxic substance inclusive of dust, fumes, vapour, gases and mists that could have a detrimental health effect on the human body when exposed to toxic concentrations (Chem Safety, 2017).

The RsHCSs require the Minister of Basic Education, school district directors and school principals to provide training, instruction and information (also links to section

13 of the OHS Act No. of 1993) to educators and scholars regarding any potential exposure to HCSs. In addition, it requires of the Minister (as the section 16(1) appointee) to conduct a risk assessment in every school to determine their HCS risk exposure profile.

A record related to the risk assessment should be maintained, by the Minister of Basic Education (as the section 16(1) appointee), detailing the following: (1) the HCSs to which educators and scholars are exposed; (2) the physical form in which the HCSs could result in exposure; (3) the health effects of the HCSs; (4) the nature of work processes; and (5) any potential deterioration, failure, or control measures required (South Africa, 1995; Lexis Nexis, 2017:125). The HCS risk assessments should be conducted every two years.

In contrast, air monitoring should be performed by an Approved Inspection Authority (AIA) annually when the HCSs exceed the Occupational Exposure Limit (OEL), and every two years for those HCSs that are within the recommended OEL (OCSA, n.d.a.).

Incidents related to HCS exposure should be investigated according to section 25 of the OHS Act No. 85 of 1993, and recorded as prescribed by the GARs, regulations 8 and 9 (South Africa, 1995; Lexis Nexis, 2021:221). As previously indicated, the RsHCSs may not apply to a school environment. Therefore, only those schools that have biology and/or science laboratories would be affected by the RsHCSs.

Another aspect of note in a school environment is noise, with specific reference to schools with technical machine and woodworking classrooms that use mechanical and electrical machinery. The regulation of note for noise environments is the Noise-Induced Hearing Loss Regulations (NIHLRs), which were promulgated in 2003.

2.7.7   Noise-Induced Hearing Loss Regulation (NIHLRs) GNR 307 of 2003

Noise-Induce Hearing Loss (NIHL) is one of the leading health-related occupational diseases reported globally (Lei *et al.*, 2016:351; Chen, Su & Chen, 2020; Pretzsch, Seidler & Hgewald, 2021:344). To protect educators and scholars, the OHS Act No. 85 of 1993 and the Noise Induce Hearing Loss Regulations (NIHLRs) play an essential role in ensuring the safety of educators and scholars against annoying and unwanted physiological damaging sound while at school. The NIHLRs state that no person should be exposed to a noise level above 85 decibels (dBA), which is the acceptable

occupational exposure limit (OEL) used to determine permanent disability resulting from hearing loss caused by excessive noise and trauma (Labour guide, 2007; CCOHS, 2019b).

The Minister of Basic Education, as the OHS Act No. 85 of 1993 section 16(1) appointee, school district directors and school principals, as the OHS Act No. 85 of 1993 section 16(2) appointees, are required to determine a baseline in relation to noise levels. The assessment should be conducted to determine the dBA rating of specific noise sources above 85 dBA, to determine noise-zones, and to apply recommended noise and engineering controls, where required, within a school environment. Where engineering controls are not reasonable, educators (employees) and scholars should be provided with relevant and effective PPE, such as ear protection (South Africa, 2003b; Lexis Nexis, 2017:159).

The NIHLRs address aspects of (1) medical surveillance, (2) maintenance of medical surveillance systems, (3) medical surveillance programmes, such as a base-line audiogram required for every employee (Lexis Nexis, 2021:182-183), and (4) the use of personal dosimeters (Boshoff, 2017).

Linking this to a school environment, the researcher does not foresee that noise may be a concern. However, attention is needed in schools with technical workshops, such as machinery and woodworking workshops that use noisy machinery and equipment that could potentially exceed the noise OEL above 85 dBA. The school staff, groundsmen, and gardeners could also be at potential risk working with noisy lawnmowers and weed eaters. A noise assessment should be conducted to determine any potential noise problems above the legally accepted OEL of 85 dBA (OCSA, n.d.b).

The next regulation of importance in a school context is the ergonomics regulations, where regulation 8 of the FRs (South Africa, 2004) addresses the aspect of ergonomics in relation to the fit of the employer to the work activities (Lexis Nexis, 2021:174). Prior to 2018, ergonomics was not an aspect linked to the OHS Act No. 85 of 1993. The Ergonomics Regulations (ERs) were promulgated in December 2019.

2.7.8   Ergonomics Regulations (ERs) GNR 1598 of 2019

Ergonomics is defined as a scientific discipline related to an essential understanding of human interaction and other elements in a system to enhance the well-being of school employees and children, making objects fit the person and not the person to fit/adapt to the object (Kroemer, Kroemer & Kroemer-Elbert, 2001:15; Labour guide, 2018b, Lexis Nexis, 2021:202). The Minister of Labour gave notice in 2017 regarding the proposed ERs, which should focus on a programmed approach to address the physical and cognitive ergonomics in schools (Labour guide, 2018b), ensuring the quality of life in schools.

The ERs outline the duties of persons at risk of ergonomics exposure in schools, addressing potential discomfort and defective equipment that could result in musculoskeletal disorders, which are important for medical surveillance (Labour guide, 2018b:28). The Minister of Basic Education, school district directors, and school principals are responsible for ensuring that an ergonomic risk assessment is conducted in relation to regulation 3 of the ERs in every school to identify ergonomic risk factors (Lexis Nexis, 2021:203).

This ergonomic risk assessment should include ergonomic hazards and risk factors as identified for each educator, to analyse those risks, and evaluate the risk factors based on a documented method. Furthermore, the Minister, school district directors, and school principals are responsible for ensuring that documented plans and safe school procedures are developed to mitigate the risk factors identified, and monitor and review the ergonomic work plan. In addition, the Minister of Basic Education, school district directors, and school principals should address the risk controls, namely, administrative and/or engineering risk controls as identified from the risk assessment (Labour guide, 2018b:30, Lexis Nexis, 2021:202-204).

The researcher's view is that the ERs could have an extensive impact on schools, considering that educators are constantly on their feet. Another impact of this regulation is the arrangement of school benches in relation to the blackboard and the effect of ergonomics on scholars related to incorrect posture. It is envisaged that the DoL would give a phase-in period whereby the Minister of Education, school district directors, and school principals (employers) should conduct their risk assessment to determine their ergonomic risks. In addition, regulation 7 relates to risk control

measures to prevent exposure to ergonomic risks. Regulation 8 relates to the medical surveillance of educators (employees) and other staff where applicable, and under the direct supervision of an occupational medical professional (doctor) (Lexis Nexis, 2021:203).

Reference is also made to the potential noise and ergonomic dangers of machinery used in school technical workshops. It is thus essential that the regulations related to the use of machinery are explored. The General Machine Regulations (GMRs) address aspects of operating machines, the safeguarding of machines, and supervision are discussed next.

2.7.9 General Machinery Regulations (GMRs) No. 1521 of 1988

The General Machinery Regulations (GMRs) may not be a regulation of much concern for schools. However, the Minister, school district directors, and school principals (employers) are responsible for ensuring that these regulations are in place at all schools. It focuses on aspects of machine supervision and machine usage by a competent person(s). The GMRs define a competent person as someone who has completed an apprenticeship in an engineering trade, inclusive of machinery operation and maintenance (South Africa, 1988; Lexis Nexis, 2017:187).

The GMRs focus on machine safeguards, which are physical barriers to safeguard moving parts of a machine that could cause an injury to a person (EHS, 2018). The school principal and educator should ensure that all machinery used in schools are suitable for the purpose intended. The machines should be insulated and have machine safeguards in place and maintained to prevent exposure to scholars. This ensures that any dangerous exposed parts of the machinery are effectively guarded and maintained (South Africa, 1988; Lexis Nexis, 2021:288). The GMRs address operating machinery, working on moving or live electrical machinery, and safety devices to start and stop machinery (Lexis Nexis, 2021:289).

According to the GMRs, any person operating the machinery should be declared competent to do so. These competencies are outlined in the regulations concerning a Certificate of Competency (CoC).

The next regulation of importance in a school context is the Pressure Equipment Regulations (PERs), which relate to fire precautions and fire equipment.

2.7.10 Pressure Equipment Regulations GNR No. 734 of 2009

In the context of a school, a fire extinguisher that is classified as pressure equipment, resorts under the Pressure Equipment Regulations (PERs). The PERs focus on manufacturing, design, operations, repair, inspection, maintenance, and testing of all pressure equipment. The terminology 'pressure equipment' applies to steam generators, pressure vessels, transportable gas containers and fire extinguishers (South Africa, 2009; RSA, 2017:117; Lexis Nexis, 2017:202).

Pressure equipment may not be used unless provided with all required safety precautions and accessories. The PERs address aspects linked to the use, inspection, maintenance, refilling and testing of fire extinguishers. Under the PERs, only authorised persons may inspect, test, refill, recharge, repair, modify, and/or recondition fire extinguishers (Lexis Nexis, 2021:305). The SANS 1825 of 2014 addresses aspects related to emergency and fire equipment, and it is crucial to include SANS 10400 of 2012, part W, which focuses on fire installations (National Building Regulations (SA), 2017; SABS, 2012, 2014).

In 2020, the world virtually came to a standstill when the Covid-19 pandemic emerged. This changed the way in which safety is observed and implemented in many businesses.

2.7.11 Covid-19. Consolidated direction on occupational health and safety measures in certain workplaces

The global pandemic of Covid-19 has changed the in which the world views safety. During the Covid-19 pandemic of 2020 to 2022 in South Africa, the Minister of Employment and the Minster of Labour developed a consolidated directive on OHS measures in certain workplaces in terms of regulation 4(10) of the National Disaster Management Act (NDMA) No. 57 of 2002, as amended (Gov.za, 2021b; Lexis Nexis, 2021:371; RSA, 2021b:2)

Regulation 3(1)(a) of the directive requires employers to conduct a risk assessment concerning the Regulations for Hazardous Biological Agents (RsHBAs) requirements of the OHS Act No. 85 of 1993. The risk assessment should be completed within 21 days after any amendment of the directive made by the government under sections 8 and 9 of the OHS Act No. 85 of 1993. Regulation 3(1)(b) requires that the risk

assessment plan to be developed or amended under the amended consolidated directive on OHS measures in certain workplaces (Gov.za, 2020; Gov,za, 2021b; RSA, 2020:7; Lexis Nexis, 2021:371; RSA, 2021b:6).

Regulation 4(1)(a) requires that employers with more than 50 employees should submit their Covid-19 plan, including record of the risk assessment, as required under section 7(1) of the OHS Act No. 85 of 1993. In addition, the employer should establish a Covid-19 H&S committee, as required under section 19 of the OHS Act No. 85 of 1993. Regulation 4(1)(e) stipulates that the employer should appoint a Covid-19 compliance officer that manages the Covid-19 plan and adherence to H&S measures required in relation to the directive. Furthermore, regulation 4 outlines aspects for identifying Covid-19 symptoms, minimising the number of employees in the workplace, and minimising direct contact (Lexis Nexis, 2021:371; RSA, 2021b:8).

Regulation 5 of the consolidated directive on OHS measures stipulates the need for social distancing in the workplace to ensure limited contact for exposure control. Regulation 5(4) requires that every employer should ensure social distancing through supervision in the workplace, as well as in community areas (Lexis Nexis, 2021:372; RSA, 2021b:13).

Regulation 6(1) of the consolidated directive on OHS measures requires employers to conduct screening to identify potential exposure symptoms. Regulation 6(2) requires employers to conform to the National Department of Health (NDoH) guidelines. Regulation 6 further addresses aspects of isolation, employee contact, and low and high-risk exposure (Gov.za, 2021b; Lexis Nexis, 2021:372; RSA, 2021b:16).

Regulation 7(1) specifies that hand sanitisers should have an alcohol base of at least 70%, as recommended by the Department of Health (DoH). Regulation 8(2) stipulates that hand sanitisers should be provided to employees in the workplace free of charge, as well as where the public has interaction (Lexis Nexis, 2021:373; RSA, 2021b:17-18).

Regulation 8(1) requires that everyone needs to wear a cloth mask when out in public and in the workplace to limit the possibility of exposure. In addition, regulation 8(2) requires an employer to supply employees with at least two cloth masks free of charge, and to provide training and instruction on using a cloth mask (Lexis Nexis, 2021:373; RSA, 2021b:18-19).

Regulation 10(1) outlines aspects to ensure adequate ventilation in the workplace to which the public has access. Regulation 11(1) outlines specific PPE, as and when prescribed by the National Department of Health (NDoH) and the NIOH. Small businesses are addressed in regulation 12, worker obligation in regulation 13, and refusal to work due to exposure in regulation 14. Finally, monitoring and enforcement of the consolidated directive on OHS measures are described in regulation 16 (Lexis Nexis, 2021:374-375; RSA, 2021b:20-25).

Although the Covid-19 regulations were lifted in the second quarter of 2022 the OHS Act No. 85 of 1993 and the attached Covid-19 regulations remains to form the minimum guidelines to ensure legal compliance to OHS in the school environment (as the workplace). To achieve legal compliance, the DBE and SGBs should implement a safety management system based on a specific school safety framework that considers the school's individuality and uniqueness.

2.8 SAFETY MANAGEMENT SYSTEMS AND FRAMEWORKS

A safety management system (SMS) is an integral part of industry and large-scale organisations. A management system is a method used to organise and manage inter-related components within a specific organisational profile to achieve the set objectives (ISO, 2018b). The OHS management system, SANS (ISO) 45001 of 2018 can be customised to address individual school safety when dealing with workplace safety hazards, and it can ensure a safe workplace for employees through the implementation of an SMS (Makin & Winder, 2008:935; ISO, 2018a). The DBE should consider including aspects of the SMS as outlined in SANS (ISO) 45001 of 2018 in the NSSF as an attempt to address legislation safety in schools.

Hazard identification is the foundation of a safety programme that determines the scope, content, and complexity of the SMS. If the hazard identification process is not conducted or followed correctly, the effectiveness of the SMS in protecting the health and safety of employees is limited to a paper exercise (Makin & Winder, 2008:935; Sambasivam *et al.,* 2017:584). Utilising a safety system approach and applying the Deming model of Plan-Do-Act-Check (PDCA) cycle across the three control strategies (safe place, person, and system), it allows for the emergence of various management system building blocks that can be adapted to a school environment (Makin & Winder, 2008:941).

School safety is important, and should not be seen as another legal burden. The purpose of a school SMS is to create and ensure a safe school environment through the management of unsafe hazards and risks. As such, a school SMS should address aspects such as potential asbestos exposure, noise, facilities, such as swimming pools on school premises, and ergonomics. The school SMS should assist the school in meeting its safety, health, and well-being obligations according to specific key elements. The school safety strategy should outline the schools leadership capability and commitment to mitigate health, safety and wellbeing risks through continual improvement (Victoria Education Department, 2021:5) as illustrated in Figure 2.3.
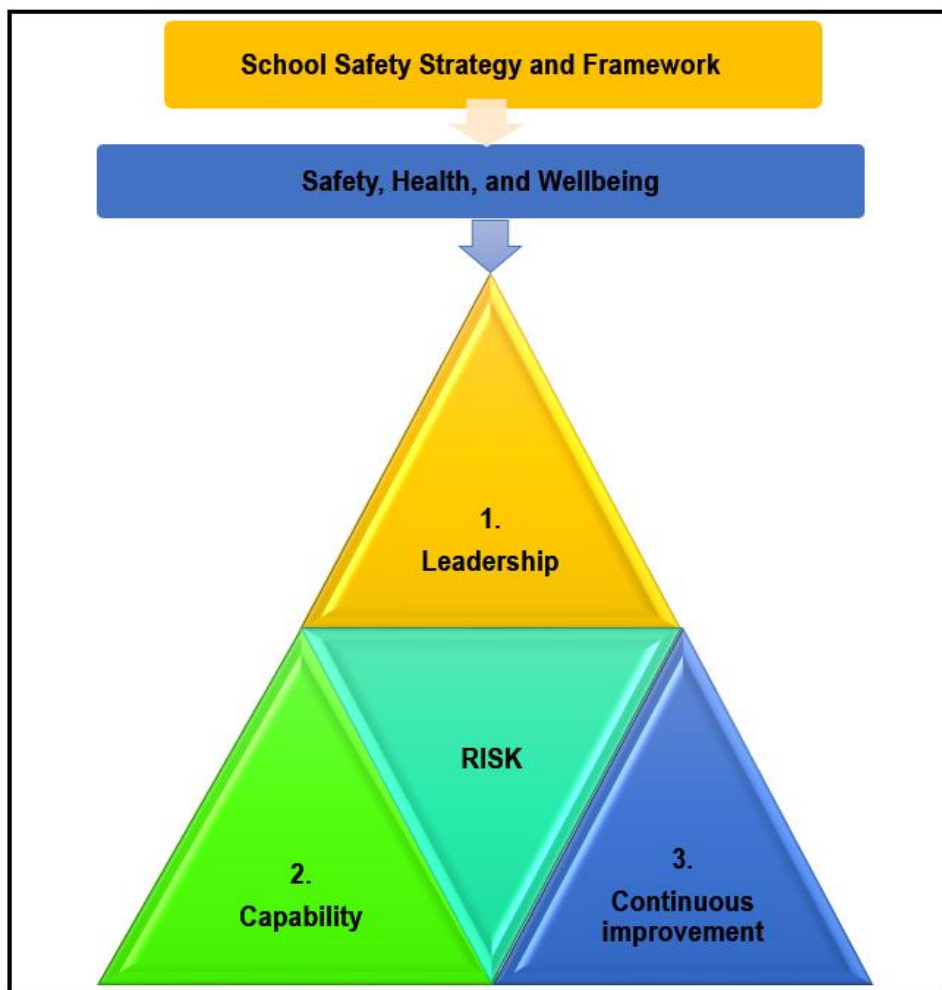
Figure 2.3:   Key elements of safety, health and well-being obligations

Source: Adapted from Victoria Education Department (2021)

Several management system building blocks (Makin & Winder, 2008:935) can be observed within the ISO management system standards. Most ISO management systems follow the same structure to integrate more than one management system

(ISO, 2018a). In terms of safety risk management, safety professionals make use of the South African National Standards (SANS) 31000 of 2019.

2.8.1 South African National Standards (SANS) 31000 of 2019

A systematic approach to safety management is fundamental, and ethically it is the right thing to do, especially, within a school environment. Safety management systems and frameworks in the safety milieu include the risk management principles and guidelines embedded in the SANS 31000 of 2019, as derived from the ISO 31000 of 2019 (SABS, 2018a; SABS, 2019).

The SANS 31000 of 2019 (SABS, 2019) outlines the legislated risk management framework as an integral part of management, and sets the foundation on which risk management activities in schools are embedded (SABS, 2019:13). This ensures that the risk management processes are effectively reported and used as a foundation for the accountability and decision-making processes in schools, ensuring an effective school culture and practice, tailored to its unique business processes (SABS, 2019:8).

This risk management framework addresses risk identification, analysis, evaluation, and treatment through a continuous improvement loop of monitoring and evaluation (SABS, 2019:14). The risk management principles and guidelines of SANS 31000 of 2019 should be used in combination with SANS 31010 of 2010 in risk assessment activities in schools as it outlines specific risk assessment techniques that can be used. SANS 31000 of 2019 allows for the creation of a protection value to improve performance and to attain the objectives. It forms an integral part of the school processes and decision-making process. It also ensures a structure, and addresses areas of uncertainty (SABS, 2009:7; Marsden, 2017).

An OHS management system drives an SMS and framework. Prior to 2018, the OHS management system used was the Occupational Health and Safety Assessment Series (OHSAS) 18001 of 2011. The OHSAS 18001 management system has since been updated and published as an ISO standard, namely, the SANS (ISO) 45001 of 2018 (SABS, 2018a).

2.8.2 International Organisation for Standardization (ISO) 45001 of 2018: Occupational Health and Safety

The occupational health and safety assessment series (OHSAS), commonly known as OHSAS 18001 of 2011, was developed under the International Organization for Standardization (ISO) to assist organisations to minimise and control OHS risks. By implementing an SMS within a school environment, the SGB should demonstrate commitment to the health and safety legislative requirements (UNISA, 2019).

The ISO statistics show that more than 7 600 employees die globally on a daily basis as a result of work-related accidents or occupational diseases, averaging 2.78 million occupation-related deaths per annum. Due to the occupational injuries and disease burden, the ISO has developed an international occupational H&S standard, called ISO 45001, which allows for integration with any of the other ISO standards (ISO, 2018a).

The aim of the ISO 45001 is to provide a safe and healthy workplace and to prevent work-related injuries and diseases, which allow for the management of OHS risks to support legal compliance and improved performance (Field & Taylor, 2018). The ISO 45001 was developed following a generic management system approach that is also found in the quality standard ISO 9001 and the environmental standard of 14001 to allow for the integration of these standards into one management system (ISO, 2018a).

The SANS (ISO) 45001 of 2018 framework is based on Deming's PDCA cycle which was developed in the 1950s by Dr Edwards Deming. It specifies the requirements for an OHS management system, which assists schools in gaining safety legal compliance, achieving its safety objectives, and assisting with the continual improvement of OHS performance (ISO, 2018b).

The SANS (ISO) 45001 of 2018 aims to provide an OHS management framework that will allow schools to manage their H&S risks and opportunities, and prevent work-related incidents, accidents, injuries, and diseases (SABS, 2018b:vi). The SANS (ISO) 45001 of 2018 management system should be considered for implementation in a school environment. In addition, the National School Safety Framework (NSSF), as developed by the DBE in 2016, should also be reviewed. The next section explores international safety legislation.

2.9 INTERNATIONAL SAFETY LEGISLATION

The WHO launched the Global School Initiative (GSI) in 1995, aiming to strengthen health promotion and education at global, national, and regional levels. It aims to increase the health of educators, scholars, families, and the broader community. The GSI strategy also includes research to improve school health programmes, strengthen national capabilities, and collaborate between health and education (WHO, 2017a, 2017b). This section explores the safety legislation within an international context focusing on developed countries that acknowledge school safety and how they link safety legislation in schools. The first of these international countries is Australia and its Australian Work Health and Safety Act (WHSA) No. 137 of 2011.

2.9.1 Australia: Work Health and Safety Act (WHSA) No. 137 of 2011

Australian safety legislation resides under the Work Health and Safety Act (WHSA) No. 137 of 2011 with specific risk regulations (Queensland government, 2018a; 2021). The WHSA No. 137 of 2011, as amended to the WHSA No. 36 of 2020, states that every employee is responsible for their own health and safety, and the health and safety of others. The primary purpose of the WHSA No. 36 of 2020 is to provide a balance to secure health and safety through the national constituted framework. In addition, it requires employees to take reasonable care of their actions to ensure that there are no adverse H&S consequences (Queensland government, 2018b; Government of Western Australia, 2020:2). It also refers to general H&S duties and primary duty-to-take-care in section 19 (WHSA, 2011:3-4; ILO, 2017:18; Government of Western Australia, 2020:44). The researcher has noted that the content of the WHSA No. 137 of 2011, as amended in the WHSA No. 36 of 2020 has a similar foundation to the OHS Act No. 85 of 1993 as used in South Africa.

Principals and managers are responsible for ensuring the health, safety, and well-being of people working under their direction. Providing, managing, and implementing health and safety in a school requires a simple, yet proactive process (Queensland government, 2015, 2018a; 2021), including disaster and emergency management, H&S incident recording, notification and management. It also includes health, safety, and well-being committees, the management of first aid, and maintaining areas outside the school grounds (Queensland Government, 2018c).

School officers play an essential role in managing the school environment and performing various activities to ensure the safety of scholars (Queensland government, 2018a; 2021). The Australian government has a specially developed school officer's portfolio that outlines various responsibilities, such as safety induction, electrical safety, risk assessment, sun safety, and asbestos management (Queensland government, 2016).

The National School Safety Framework of Australia (NSSFA) was developed in 2011 by the Ministerial Council for Education, Early Childhood Development and Youth to the Australian Affairs (MCEECDYA). This NSSFA was revised in 2018 to become the Australian Student Wellbeing Framework (ASWF) of 2018. The guiding principles of the ASWF support scholars in developing an understanding of safety, to promote their own safety, and to build a positive learning environment (Government of Australia, 2017, 2020). Australian state schools commit themselves to provide a safe, secure and supportive learning environment for educators, scholars, and the wider school community (Queensland government, 2015, 2021).

The maintenance of a School Safety Management System (SSMS) within a school environment is an ongoing process and includes school structures and facilities, school activities, practices, and procedures. An SSMS is used as a tool to develop and improve school safety programmes, and comprises the following five key success factors: (1) policies and communication, (2) planning, (3) implementation, (4) measurement of performance, and (5) auditing and reviewing (Health and Safety Authority (HSA), 2013; HSA, 2017:6 & 8). Children's rights are described in the Convention of Rights for Children and express the importance of child protection, quality of life, and the right to be educated in a safe environment (Cross *et al.*, 2011:398; Unicef, 2019).

The next developed country that acknowledges legislated school safety is the UK.

2.9.2   United Kingdom: Health and Safety at Work Etc. Act (HSWA) of 1974

The Health and Safety at Work etc. Act (HSWA) of 1974 is the primary H&S legislation in the UK. The regulations set out more detailed action required by an employer (Legislation.gov.uk, n.d; Liptrot, 2021). The UK government states that schools are responsible for the day-to-day safety and health of children under the care of the SGB (UK Department for Education, n.d.). The UK does not have a limit on class size, in

relation to the number of scholars per class related to safety and health. However, schools should have a safety and health policy, which should describe how the school will manage its H&S activities and commitment, who will do what, when, and how. Incidents, accidents, and serious diseases should be reported to the Health and Safety Executive (HSE) (Legislation.gov.uk, n.d; Liptrot, 2021).

The HSWA of 1974 states that the school, as employer, is responsible for the health and safety of educators and scholars and should take reasonable steps to ensure that educators and scholars are not exposed to risks and dangers to their health or safety (Coventry, 2017). The UK government is determined to reduce the burden on schools and to simplify H&S requirements, while focusing on scholars' emotional and physical well-being (UK Department for Education, 2022). Health and safety standards in the UK schools focus on how risks are managed through a risk assessment approach and ensure that control measures are suitable.

In linking this to the South African DBE and schools, school principals and educators are encouraged to follow safe work systems and practices to comply with the legislative requirements and ensure a safe school-related environment free from injury and ill health (Coventry, 2017).

The next section explores the safety legislation of the USA, and how this legislation links to a school environment.

2.9.3 United States of America: State and Federal Laws

As previously indicated, the USA Workplace safety legislation comprises of state and federal laws with specific standards to decrease the risk of accidents, incidents, injury, and diseases in the workplace. The first OHS legislation was promulgated in 1970 under the Occupational Safety and Health (OSH) Act No. 738 of 2002, Public Law 91-596 [S. 2193] (ILO, 2014; US Department of Labor, n.d.). The OSH Act No. 738 of 2002, Public Law 91-596 [S. 2193] requires of employers to inform employees regarding existing hazards in the workplace. Employees also have a responsibility towards their employer, namely, to inform the employer of any workplace hazards. Any identified workplace hazard should be treated, terminated, or transferred to prevent future incidents, accidents, injuries, or diseases (HG.org Legal Resources, 2018).

Specific standards are introduced as federal regulations under the banner of the OSH Act No. 738 of 2002, and are administered by the Occupational Safety and Health Administration (OSHA). OSHA is responsible for the physical inspection of workplaces, and issues citations on any identified violations (HG.org Legal Resources, 2018). These regulations are promulgated as Codes of Federal Regulation (CFR) under the OSHA, and are published in the USA as Regulations (Standards) 29 CFR. The regulation (standard) number is placed behind the CFR, such as the 29 CFR 1910 that is divided into 20 sections. An example is 29 CFR 1910 Subpart G which relates to occupational health and environmental control (OSHA.gov, n.d.; U.S. Federal Government, 2021). Linking this back to South Africa and the OHS Act No. 85 of 1993, these 29 CFR 1910s have similar content to that of the safety regulations of the OHS Act No. 85 of 1993.

School safety programmes in the USA date back to the 1970s, where school violence, disciplinary problems, and drug and alcohol abuse amongst scholars became pivotal points across the USA's national school system (Brock, Kriger & Miró, 2017:7). Federal efforts continued in 1980 to curb school violence and drug and alcohol abuse. During the 1990s, the USA government operated in tandem to manage school violence and disciplinary problems.

In 1994, the USA government introduced the Safe Schools Act (Public Law 103-227), aimed at ensuring a safe and violence-free school environment (Brock *et al.,* 2017:7). Federal statistics after the introduction of the Safe Schools Act (Public Law 103-227) [S. 2193] indicated an improvement in schools, with at least a 10% decrease in school violence (Brock *et al.,* 2017:8). In 1984, the National School Safety Center (NSSC) was developed by President Reagan as a joint initiative between the USA Departments of Education and Justice. The purpose of the NSSC is to promote a safe and secure school environment (NSSC, n.d.).

In 1998, President Clinton organised a school safety conference that aimed to bring educators, scholars, parents, and communities impacted by school safety and security issues together (Brock *et al.,* 2017:9). As a result, President Clinton introduced two school safety discretionary grant programmes to address school safety and security problems. These programmes have become the most significant school safety initiative in the USA (Brock *et al.,* 2017:9). The programmes (introduced in 1998) have continued to grow and develop. In 2001, the USA congress introduced the "secure our

school programmes" that assisted schools in the USA in obtaining the latest technology in safety systems, and services to investigate aspects of school safety and security (O'Meara, 2013:34; Brock *et al.,* 2017:10).

The 2018 school safety conference chaired by President Trump led to the introduction of a commission that was appointed to provide actions and recommendations related to improving school safety and enhancing building security. This commission also has to investigate the social and emotional well-being of scholars. During this conference, President Trump was quoted as follows: "Every child deserves to grow up in a safe community, surrounded by a loving family and to have a future filled with opportunity and hope" (U.S. Department of Education, 2018a).

The DBE in South Africa has a responsibility to ensure the safety and health of children in schools. As such, the USA's 2018 school safety conference could be used as a starting point in South Africa to include aspects of legislated safety, and to not only concentrate on violence, bullying, and security safety. The next section explores the safety legislation of Canada and its link to a school environment.

2.9.4   Canadian safety legislation

The Canadian safety legislation sets out the rights and responsibilities of the employer and employees. In addition, it has a 'right-to-know' aspect that links to hazardous products (CCOHS, 2019a). Canada's OHS is controlled by 14 jurisdictions, of which one is federal, 10 provincial, and three are territorial, while each of these has their own OHS legislation. The Canadian federal health and safety legislation is referred to as the Canada Labour Code Part II, with additional regulations under this Code. The Code applies to organisations and sectors across provincial and international boards. Approximately 6% of the Canadian workforce resides under federal jurisdiction, while 94% reside in provincial and territorial agencies (CCOHS, 2019a).

As there is a vast number of OHS legislation in Canada, the researcher will not discuss each legislation individually, but will focus on the general aspects of the legislation. The intention of Canadian OHS legislation is to ensure the safety of employees within the workplace, while outlining the responsibilities of employers, employees, and supervisors. This results in a joint responsibility related to workplace health and safety. The employer should ensure workplace safety and train employees regarding potential dangers in the workplace. The employer also has the responsibility to report workplace

incidents to the government department responsible for OHS (CCOHS, 2008, 2019c). Employees are responsible for ensuring that they comply with OHS legislation, that PPE is used as directed, and to ensure the safety and protection of fellow employees (HRSDC, 2018; CCOHS, 2019c; Government of Canada (GoC), 2019).

In accordance with the Canadian OHS legislation, it is the responsibility of the Canadian government to enforce OHS legislation, to conduct inspections within workplaces, and to promote safety education, training, and research. The Canadian OHS legislation awards employees the right to refuse to conduct any unsafe work-related activities, and the right to be informed about potential workplace hazards and dangers (CCOHS, 2019c).

Canada has a national, non-governmental safety council, with the mission to guide and direct safety efforts for the reduction of work-related injuries, deaths, and (economic) losses, inclusive of school safety (Law Central Alberta, 2015). In addition, the Canadian Safety School's Network (CSSN) is committed to ensuring that schools are safe and free of violence, while working in partnership with the police, government, education, organisations, and communities to understand problems faced by schools regarding safety issues, and to find solutions (CSSN, 2018, 2019).

The Canadian Schools Act, Chapter No. 421 of 1996, legislates the responsibility to a school to ensure that educators and scholars are provided with a safe, caring, and welcoming learning environment. This Act requires school boards to implement and maintain school policies that contain aspects outlined in the Act (Alberta government, 2016:2). For example, school boards are responsible for (1) establishing fire drills and ensuring that these drills are conducted regularly; (2) maintaining school facilities, buildings, furniture, and equipment, and to ensure that the school facilities are insured; (3) developing the school policy statement, safety plans, and safety policies to ensure a safe school environment, inclusive of action plans; and (4) investigating unsafe acts, violence, and safety incidents (CCOHS, n.d.). This Act requires scholars and parents to ensure that conduct on the school premises contributes positively towards a respectful, caring, and safe learning environment (Alberta government, 2016:2).

In reviewing international legislation, the researcher has noted similarities in the safety legislation prescribed by Australia, the UK, the USA and Canada. The main purpose of the safety legislation in these countries is to ensure the health and safety of

employees, and this applies equally to the school environment. The next section discusses a school safety framework.

2.10 SCHOOL SAFETY FRAMEWORK (SSF)

Education is the building block of South African society, and it is essential for all South African scholars to gain an education. The need for school safety and security has transformed the schoolyard, and the emphasis on school security and the protection of school property has shifted to that of the safety of educators, scholars, and school support staff (Van Jaarsveld, 2011:xiv). With school safety in mind, the DBE developed the National School Safety Framework (NSSF) in 2016 to provide standards for safety in schools.

2.10.1 National School Safety Framework (NSSF) of 2016

The main focus of the DBE is to educate young South Africans, thus making schools an essential area for developing responsible and educated adults for the business environment. Together with the DBE, the South African government is committed to improving education in South Africa (DBE, 2014). Schools should be considered holistically as places where scholars are able to learn and acquire knowledge (Burton, 2008:1; Makota & Leoschut, 2017:20).

The DBE developed a National School Safety Framework (NSSF) in 2016 to serve as a management tool. It focuses on school violence, preventing and managing safety incidents, and creating a safe and supportive learning environment in schools (DBE, 2016b:2). The NSSF aims to create a safer learning environment for educators, scholars, administrative staff, the SGB, and all participating role-players with the main objective to understand and identify all security threats and issues (DBE, 2016b:2). In addition, the DBE focuses on school values and ethics, and has instituted policies and measures to address and ensure the safety of educators, scholars, and other role-players (DBE, 2017a).

Schools have become commercial institutions (Sujatha, 2017), and as a result, school safety cannot be effectively managed, unless the DBE and the school management manage the school environment holistically to ensure a safe and healthy school and learning environment. Burton (2008:12) as well as Makota and Leoschut (2017:20)

referred to a school safety system where the safety of scholars can be monitored and integrated into a database.

As indicated in Chapter 1 (Section 1.6), the purpose of the study was to investigate the legislated safety characteristics, as legislated by the OHS Act No. 85 of 1993 (RSA, 1993b). Chapter 1 (Figure 1.2) linked the legal frameworks of safe schools in South Africa, where the primary objective (Section 1.7) was to explore the legal imperatives of the OHS Act No. 85 of 1993. To ensure these legal imperatives as based on the OHS Act No. 85 of 1993, the NSSF should be based on legislative safety requirements, and the SASA No. 84 of 1996 to ensure that these legal imperatives are implemented.

An OHS steering committee was established in Gauteng in 2018 to ensure OHS standards for all provinces. The OHS steering committee has the authority to enter any building and to take appropriate steps to ensure the health and safety of the occupants (Lewis, 2018; Mailovich, 2018).

The next section presents a synopsis of the school safety frameworks reviewed in the literature.

2.10.2 Synopsis of school safety frameworks

This chapter delineated various school safety frameworks. Table 2.3 summarises the literature review related to school safety frameworks.

Table 2.3:   Synopsis of school safety frameworks

	South Africa	Australia	UK	USA	Canada
Framework	National School Safety Framework (NSSF of 2016).	The National School Safety Framework of Australia (NSSFA) was amended in 2018 to the Australia Student Wellbeing (ASW).	No specific framework. School safety is linked to the Health and Safety at Work etc. Act (HSWA) of 1974.	The NSSC is a joint initiative to promote a safe and secure school environment.	The Canadian Schools Act Chapter No. 421 of 1996.
Purpose	Provide a standard for safety in schools. Endeavours to prevent and manage safety incidents. Focuses on school violence, bullying and abuse. The main objective is to identify all security threats and risks in schools.	The ASW emphasises the importance of scholar safety and well-being, supported by a number of guiding principles to promote individual (own) safety.	UK schools are responsible for the day-to-day safety and health of children under the care of the School Governing Body (SGB) as stipulated in the Health and Safety at Work etc. Act (HSWA) of 1974.	The purpose of the NSSC is to promote a safe and secure school environment.	To ensure that educators and scholars are provided with a safe, caring, and welcoming learning environment.
Legislative prescript	Constitution of the Republic of South Africa (RSA) Act No. 108 of 1996. South African Schools Act No. 84 of 1996.	Conventions of Rights for the Child of 1990.	Schools are required to have written H&S policies, describing the school safety management as outlined in the Health and Safety at Work etc. Act (HSWA) of 1974.	These regulations are promulgated as CFRs under the OSHA and are published as Regulations (Standards) as 29 CFRs.	Canada Labour Part II and regulations. Canadian Schools Act No. 421 of 1996. Canadian School Safety Network (CSSN).

	South Africa	**Australia**	**UK**	**USA**	**Canada**
Linked to safety legislation	South African Schools Act No. 84 of 1996 considers security safety. It is not linked to the OHS Act No. 85 of 1993.	Linked to the Conventions of Rights for the Child of 1990.	Linked to Health and Safety at Work etc. Act (HSWA) of 1974.	29 CFR 1910 that is divided into 20 sections of which Subpart G relates to occupational health and environmental control.	Linked to Canadian Schools Act No. 421 of 1996.
School safety management tool	National School Safety Framework (NSSF of 2016) is indicated as a school safety management tool	Maintain a School Safety Management System (SSMS).		The NSSC was developed as a joint initiative between the USA Departments of Education and Justice to promote school safety. The Safe Schools Act (Public Law 103-227), which was introduced in 1994 to ensure a safe and violence-free school environment.	Canadian School Safety Network (CSSN) is committed to ensuring schools are safe and free of violence, and it works in partnership with the police, government, education, organisations, and the community.
Safer school environment	It is linked to security safety. It does not consider safety in relation to the OHS Act No. 85 of 1993.	The ASW aims to promote individual (own) safety.	The focus is on the emotional and physical well-being of children.	The school safety conference aimed to bring educators, scholars, parents, and communities impacted by school safety and security issues together and to provide actions and recommendations for	Requires school boards to implement and maintain school safety policies.

	South Africa	Australia	UK	USA	Canada
				improving school safety.	
Holistic approach	No.	Yes.	Risk assessment approach.	A joint initiative between the USA Departments of Education and Justice.	Has a partnership with the police, government, education, organisations, and the community.
Addresses aspects of violence, bullying and abuse	Focuses on school violence, bullying and abuse.	The guiding principles include: ▪ Leadership commitment ▪ Supportive school culture ▪ School safety policies and procedures ▪ Professional learning ▪ Positive behavioural management ▪ Engagement and skills development ▪ Student well-being and ownership ▪ Early intervention and support	Not addressed.	Not addressed.	The CSSN is committed to ensuring that schools are safe and free of violence.

	South Africa	Australia	UK	USA	Canada
		▪ Partnerships with family and community.			
Safety incidents	Linked to security safety.	Not addressed.	School governing bodies and educators are responsible to ensure an injury-free environment.	USA Workplace safety legislation comprises of state and federal laws with specific standards to decrease the risk of accidents and incidents.	Not addressed.

Source: Researcher's own compilation

The analysis of the synopsis of the school safety framework, as outlined in Table 2.3, indicates that the NSSF of South Africa does not address the aspects of legislated safety but considers factors linked to security safety. South Africa could gain vital information from the guiding principles addressed in the ASW Framework. Similarly, considering that the CSSN partners with the police, external organisations, and the community to ensure that schools are safe, could be of support to the GDE and DBE.

The next section investigates the relationship between Brazil, Russia, India, China and South Africa, referred to as the BRICS nations.

2.11 BRICS NATIONS

The need to strengthen relations between countries to ensure more sustainable and mutual benefits led to the establishment of BRICS. The first BRICS summit was held in 2009 (Press Information Bureau, 2017; Brics2018.org, 2018). In 2013, an initiative was taken to develop a BRICS league for education that became an academic platform for expert cooperation and international educational projects. This initiative brought together representatives from leading educational institutions, including South Africa (Seregin, 2013:1; Granello, 2016:1).

It was emphasised that education is universal. It sets the tone for the world of the future and requires cooperation between nations. The Beijing Declaration on Education was adopted at the fifth BRICS meeting in July 2017, which committed these nations to the United Nations' (UNs) sustainable development goal (SDG) number 4, for education 2030. This SDG aims to ensure a comprehensive and reasonable education of quality and the promotion of life-long learning opportunities (Beijing, 2017:6, 8). This Declaration emphasises the cooperation amongst the BRICS nations and collaborations in education, research and innovation (Beijing, 2017:8).

2.11.1 Brazil: Safety legislation

The Brazilian safety legislation is overseen by the Minister of Labour, and is based on a Consolidation of the Labour Laws (CLL) that includes both individual and industry standards, and contains specific statutory regulations (PILZ, 2016). The Brazilian regulatory standards are referred to as "Norma Regulamentadora" (NRs)

(Gov.br, (2020), and these define the procedures related to safety in the workplace. Brazil has a total of 37 NRs that relate to safety as listed in Table 2.4.

Table 2.4:   "Norma Regulamentadora"

NRs	Description
1	General provisions and management of occupational risks
2	Prior inspection (Revoked)
3	Embargo and interdiction
4	Services specialized in safety engineering and occupational medicine
5	Internal accident prevention commission
6	Personal Protective Equipment (PPE)
7	Occupational health medical control program
8	Buildings
9	Assessment and control of occupational exposure to physical chemical and biological agents
10	Safety and electrical facilities and services
11	Transport, handling, storage and handling of material
12	Work safety in machinery and equipment
13	Boilers, pressure vessels, pipes and metallic storage tanks
14	Ovens
15	Unhealthy activities and operations
16	Dangerous activities and operations
17	Ergonomics
18	Safety and health at work in the construction industry
19	Explosives
20	Safety and health at work with flammables and fuel
21	Open sky works
22	Occupational health and safety in mining
23	Fire protection
24	Health and comfort conditions in workplaces
25	Industrial waste
26	Safety signalling
27	Professional registration of work safety technician (Revoked)
28	Supervision and penalties
29	Regulatory standard for safety and health in port work
30	Safety and health in waterway work
31	Safety and health at work in agriculture, livestock, forest exploration and aquaculture
32	Safety and health at work in health services
33	Safety and health at work in confined spaces
34	Working conditions and environment in ship construction, repair and dismantling industry
35	Working at heights
36	Safety and health in slaughtering meat and meat processing industry
37	Safety and health on oil platforms

Source: Adapted from Gov.br (2020)

There appears to be no significant school policies for schooling in Brazil. The last educational legislation was passed in 1996, with no specific reference being made to school safety in the Brazilian schools (Marteleto, Marschner & Carvalhaes, 2016:101-102).

2.11.2 Russia: Safety legislation

In Russia, the Ministry of Health and Social Development (MHSD) is responsible for establishing safety and health policies and workplace programmes. The Basic Laws on Labour Protection (BLLP) of 1993 make provision for the protection of workers' health and safety. Article 4 of the BLLP of 1993 states that workers have the right to a safe and healthy working environment. Article 4 requires that the workplace is protected against hazards that could result in occupational injuries or diseases and makes provision for compensations related to these occupational injuries and diseases. Article 9 of the BLLP of 1993 relates to management responsibility for ensuring a safe and healthy workplace (Fedotov, Saux & Rantanen, 2011).

The Constitution of the Russian Federation was adopted in December 1993, following a nationwide referendum (Egorov, 2002). The Labour Code of the Russian Federation No. 197-FZ of 2001, as amended in December 2007 (WTO, 2007), chapter 10, article 139, outlines the responsibility of managers to ensure safe and healthy working conditions through safety procedures and accident prevention. The Russian Labour Code comprises over two thousand safety regulations and instructions (Fedotov *et al.,* 2011).

Comparing the Russian safety legislation with that of the OHS Act No. 85 of 1993, the researcher believes that there are some overlaps concerning the protection of workers (employees) in the workplace, and that the responsibility is placed on management (employer) to ensure safe and healthy working conditions.

2.11.3 India: Safety legislation

Safety is legislated in India under the National Policy on Safety Health, Environment at Workplace (NPSHEW) of 2009. The NPSHEW aims to establish a safety and health culture in workplaces by preventing work-related incidents, injuries and diseases. The NPSHEW provides school safety by incorporating safety, health and environmental

awareness in schools. Scholars are invited to safety exhibitions and are included in safety marches.

Although the Indian government has undertaken the initiative to include occupational (workplace) safety in schools, it is not part of the teaching curriculum (Directorate General Factory Advice Service and Labour Institute (DGFASLI 3, 2018).

Comparing India's legislation with the OHS Act No. 85 of 1993, the researcher has found some similarities in relation to establishing safe and healthy workplaces. An area of note is that India has included in its NPSHEW safety awareness in schools. This is an aspect lacking in both the OHS Act No. 85 of 1993, and the SASA No. 84 of 1996.

2.11.4 China: Safety legislation

In China, safety is regulated under the People's Republic of China's (PRCs) State Administration of Workplace Safety (SAWS). A safety law was promulgated in China in 2014 that addresses the country's legal framework governing organisations and employees. This safety law endorsed comprehensive employer rules that relate to workplace incidents, and it requires employers to develop a responsible system for workplace safety. China also expanded its scope regarding organisations to which the safety laws apply, and included production and operational activities. The PRC safety laws also institute nationwide workplace inspections by the Chinese government (Huang, 2017).

In 2017, China saw a restructuring of its legal environment, where the SAWS was re-organised, resulting in the National Health Commission becoming responsible for safety legislation in China. With this restructuring, various new safety regulations were promulgated in 2018, such as the metallurgical enterprise and non-ferrous metal production safety regulations 04-01-2018 (Wang, 2018). The basis of the safety laws in China is to ensure governmental control over workplace safety and to reduce incidents and injuries in the workplace (Littler.com, 2015).

2.11.5 South Africa: Safety legislation

Safety legislation in South Africa is mandated under the OHS Act No. 85 of 1993 and the related regulations, as expanded upon in Sections 2.6 and 2.7.

The foregoing discussion related to safety legislation in BRICS nations identified some similarities between these BRICS nations and their safety legislation. India was the only nation that was found to have included an aspect of school safety in its legislation. As a member of BRICS, South Africa can gather vital information related to the implementation of school safety legislation from the BRICS countries. In Russia, the BLLP of 1993 makes provision for the protection of employee health and safety. In India, the NPSHEW of 2009 aims to establish a H&S culture in its workplaces. Safety in China has stipulated employer rules that require employers to develop a system for workplace safety. The safety legislation in China is not as comprehensive as the laws regulating safety in Russia and India. South Africa has adopted safety legislation that makes the employer and employee responsible for safety in the workplace. School safety legislation and the implementation in the BRICS nations will be examined in Chapter 3 (Section 3.8).

2.12 CONCLUSION

This chapter gave an overview of safety's historical background, where workplace safety began, how legislation developed, and how safety legislation is practised today in South Africa. It highlighted the South African Constitution as being the country's highest law. The Bill of Rights, stemming from the South African Constitution, highlight aspects of education, indicating that everyone has the right to education. With the inception of the OHS Act No. 85 of 1993, safety should be at the core of all activities in any school environment (workplace). The chapter reviewed system and safety theories to establish a relationship and link these theories to school safety. The OHS Act No. 85 of 1993 and the safety regulations were explored, and an indication was given regarding regulations that impact a school environment. The chapter presented an overview of safety frameworks and how these frameworks could be adapted in any school environment in South Africa. Various pieces of international safety legislation were reviewed, including Australia, UK, USA, and Canada to determine how legislated safety is practised and implemented in schools. The chapter concluded with a summary of the BRICS nations' safety legislation and its implementation.

As outlined in Chapter 1, the purpose of the study was to address legislated safety characteristics with the intention of promoting a safe school environment. With this in mind, and the legislation and frameworks outlined in this chapter, the next chapter will

explore the South African Schools Act (SASA) No. 84 of 1996 and how schools adopt safety related to the OHS Act No. 85 of 1993. Chapter 3 also reviews international school safety, school safety in developing countries, and the BRICS nations.

CHAPTER 3:
SCHOOL LEGISLATION AND SCHOOL SAFETY

CHAPTER 3. OVERVIEW

- INTRODUCTION
- OVERVIEW OF SCHOOL LEGILSATION
  - South African Schools Act (SASA) No. 84 of 1996
  - National School Safety Framework (NSSF) of 2016
- SCHOOL MANAGEMENT THEORIES
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- SCHOOL SAFETY IN DEVELOPING COUNTRIES
- BRICS
- CONCLUSION

3.1 INTRODUCTION

South Africa is a diverse country with many different ethnic groups, languages, and cultures that all impact education in varying degrees. The Constitution of South Africa Act No. 108 of 1996 promises the right of freedom and security to the entire South African population. At the same time, the Bill of Rights advocates the protection of children in a school environment that is safe and not harmful to their well-being. The purpose of the current study was to investigate the legislated safety as linked to the Occupational Health and Safety (OHS) Act No. 84 of 1993 and the South African Schools Act (SASA) No. 84 of 1996. This chapter explores the South African school legislation in relation to the SASA No. 84 of 1996 and how the Department of Basic Education (DBE) addresses school safety according to the legislative prescripts of the OHS Act No. 85 of 1993.

The chapter begins with an overview of school safety legislation in South Africa with reference to the SASA No. 84 of 1996 and the National School Safety Framework (NSSF) of 2016 to identify how the Department of Basic Education (DBE) applies and implements school safety within a South African context. This is followed by a synopsis of the management and systems theory in relation to a school environment. In addition, the chapter reviews the Hylayiseka Early Warning System (HEWS) toolkit developed in 2006. Thereafter, school safety within developing and developed countries is examined. The next section provides an overview of school legislation in South Africa.

3.2 OVERVIEW OF SCHOOL LEGISLATION IN SOUTH AFRICA

Prior to 1994, the South African schooling environment was unbalanced, where 19 education departments managed schools for the various ethnic groups across South Africa. Parents had little say in their children's education, and school duties and functions were restricted to school committees and school boards (Thekiso, 2013:20). Section 4 of the 2012 policy on the organisation, roles and responsibilities of educational districts addresses the educational roles, responsibilities, functions, and delegations of educational school districts (RSA, 2012).

An education department is defined as a department established in terms of the Public Service Act No. 30 of 2007 as amended, in Schedule 1, Section 7(2) of the Department of Public Service and Administration (DPSA) (DPSA, 2017).

The South African government introduced the Bantu Education Act No. 47 of 1953 to manage the educational structure for the black population. In 1981, recommendations were made by the De Lange Report that autonomy be given to parents, which allowed parents to share in the decision-making processes in schools. From 1988 to 1994 educational law underwent various changes, such as the educational law amendment, which allowed the establishment of school committees (Thekiso, 2013:20).

From 1995 onwards, South African laws experienced fundamental changes, which included changes to the educational legislation, and the first South African Schools Act No. 84 of 1996 was promulgated (South Africa, 2016:134).

In 2021, new education laws were planned for a Basic Education Laws Amendment Bill, and in 2022, certain proposals were submitted to parliament. However, no mention was made of safety in the Basic Education Laws Amendment Bill (B2-2022) (Businesstech, 2021; Parliament.gov.za, 2022b).

The South African Constitution abolished apartheid in South African society, inclusive of education. The Bill of Rights allows every South African citizen the right to education, where formal education was categorised into three streams, namely: (1) General Education and Training (GET) (Grade R to Grade 9), (2) Further Education and Training (FET) (Grade 10 to Grade 12 level), and (3) education and training at levels 2 to 4 under the National Qualifications Framework (NQF) (Smith & Oosthuizen, 2013:38; Western Cape Government, 2021).

In 2016, the DBE indicated that there were 29 749 established public and registered independent schools, of which 6 186 were secondary schools (DBE, 2018). In 2019, it was estimated that there were 24 998 schools in South Africa, of which 23 076 were public schools, and 1 922 private/independent schools with over 12 million scholars and approximately 386 600 educators (South African Market Insights, 2019; StatsSA, 2021). In 2021-22 Gauteng public schools had an estimated 2 606 schools across eighty-three cities (Schools4sa, 2022) with a projected 261 935 scholars and 71 263 educators. In 2021, the scholar to educator ratio in public schools was 32.6 to one (32.6:1), (Schools4sa, 2021b, 2022; Townsend, 2022).

The Department of Education drafted and implemented various advanced and ongoing policies to transform the educational system to address the past imbalances and increase access to quality education in South Africa (Carrim, n.d.; Smith & Oosthuizen, 2013:39). This brought about the establishment of the National Education Policy Act (NEPA) No. 27 of 1996. The NEPA No. 27 of 1996 was promulgated to record legislation, policies, monitoring, and to formalise the relationship between national and provincial authorities.

The NEPA Act No. 27 of 1996 also laid the foundation for the development of a Council of Education Ministers, heads of the education departments, and inter-governmental forums to develop new education systems. The policy has been updated to include Covid-19 changes to the school curriculum (Smith & Oosthuizen, 2013:39; South Africa, 2016:1; Acts online, 2021).

As explained in the next section, the SASA No. 84 of 1996 provides a unified educational system and is still in existence today. It sets out laws related to schools and prescribes the roles and responsibilities of educators.

3.2.1   South African Schools Act No. 84 of 1996

The SASA No. 84 of 1996, the Constitution of the South Africa Act No. 108 of 1996, and the NEPA No. 27 of 1996 are policies that guide school management, and acknowledge, appreciate, and protect the diversity within the South African school context (Van Vuuren & Van der Westhuizen, 2013:351; South Africa, 2016:1; Acts online, 2021). Section 24 of the Constitution of the South Africa Act No. 108 of 1996 states that every scholar has the right to a safe school environment that is not harmful to their well-being. Section 24 also states that scholars should enjoy a harmonious and carefree educational environment conducive to learning. This includes a safe physical school environment (Joubert & Prinsloo, 2013:14; Lynch, 2018; Firestone, 2021).

The SASA No. 84 of 1996 addresses the NEPA No. 27 of 1996, and requires all school managers and role-players to be accountable for the effective governance and management of schools. This Act also requires SGBs to follow constitutional values and principles to promote unity in the school's best interest, specifically with the establishment of specific school policies. The Act further prescribes the inclusion of specific national and provincial directions into school policy documentation for

management, such as a school safety policy (Van Vuuren & Van der Westhuizen, 2013:352; South Africa, 2016:1).

A school is considered an institution for learning and is expected to empower specific knowledge and skills. It is assumed that the home is the primary source of education, where parents instil certain norms, values, and beliefs in their children which are accepted within the community. The teaching of these acceptable norms, values, and beliefs continue at the school level, where scholars are taught to interact in various ways under changing and challenging conditions (Thekiso, 2013:31).

The SASA No. 84 of 1996 aims to ensure governance and unification within all schools in South Africa. The SASA No. 84 of 1996, Section 3(1) addresses aspects of compulsory school attendance, and specifies that parents should ensure that children attend school from the age of seven until the age of 15, or at least until Grade 9 (DBE, 1996, 2018c). Chapter 2 further addresses aspects such as school exemptions, school admission, the language policy of public schools, school curriculum and assessment criteria, and the prohibition of corporal punishment, to mention a few.

In chapter 2, section 8A discusses random searches, seizure, and drug testing in schools (RSA, 1996b:14). Chapter 3 addresses aspects related to the provision and merger of public schools, state and private property, SGBs, and terms of office (RSA, 1996b:14). Chapter 4 discusses the funding of public schools and SGBs' responsibilities. Chapter 5 addresses independent schools, while chapter 6 considers transitional provisions. As these are not directly related to school safety they will not be discussed in the study (Education Labour Relations Council (ELRC), n.d.:B-8 and B-22).

Chapter 7 addresses the code of conduct for scholars that must be adopted in consultation with parents, scholars and school educators. The purpose of a code of conduct is to establish a disciplined school environment and must address processes for safeguarding the scholars' interest or any other parties involved in potential disciplinary actions. It further addresses the duty to provide information about the school that is reasonably required without disclosing a person's rights, and within the framework of the POPI Act No. 04 of 2013 (ELRC, n.d.:B-22, B-23; South Africa, 2013). As these items are not directly related to school safety, they will not be discussed in detail.

Section 58B(2)(c) of the SASA No. 84 of 1996 relates to the safety of learners or staff that are threatened. Section 61(a) relates to regulations and states that the 'minister' may make regulations in public and independent schools that will provide for safety measures (ELRC, n.d.:B2-B-7; RSA, 1996b:3 and 51, Gov.za, 2018).

The literature review that the current study conducted concerning the SASA No. 84 of 1996 does not support the understanding that school safety is applied within the context of the OHS Act No. 85 of 1993. Sulkowski and Lazarus (2017:7) stated that educators are not only responsible for preventing school violence and bullying but are also required to ensure the safety of every scholar. They further indicated that school safety has become a significant issue amongst legislators and educational policy-makers and enforcers. According to Sulkowski and Lazarus (2017:26), a safe and supportive school is achieved by ensuring the physical safety of the school environment through school safety policies and procedures, and promoting physiological school safety amongst scholars and educators.

The researcher noted from the literature review that no reference was made in the SASA No. 84 of 1996 to safety, as legislated in the OHS Act No. 85 of 1993. In addition, the OHS Act No. 85 of 1993 is not referred to in the SASA No. 84 of 1996. However, further investigation in the area of school safety identified a school safety framework as developed in 2015 by the DBE. This framework was issued as a standard for safety in schools in the form of the National School Safety Framework (NSSF). The DBE committed itself to preventing and managing safety incidents in schools, and creating a safe and supportive learning environment through this framework. It was developed to provide a holistic, all-inclusive strategy in a coordinated manner to address school violence. In addition, the NSSF discusses the importance of achieving safe schools (DBE, 2016b:3; UNESCO, 2021b).

3.2.2 National School Safety Framework (NSSF) of 2015

Education is the building block of the South African society, and it is essential for all young South African scholars to receive an education. The DBE developed the NSSF of 2015 to provide a management tool that will allow school managers to manage aspects of school safety in relation to risks and threats in the school environment (DBE, 2016b:2; UNESCO, 2021b).

School safety, however, does not originate from a single source but is the product of various conditions such as peer pressure, jealousy, deficient social skills, overcrowding in schools, and a lack of academic success. These sources are also affected by internal and external activities within the school. To resolve these problems, the most effective way is to adopt a practical course of action through the development of school policies, programmes and practices. In addition, it requires an improved communication network and support from all school members and the community to create a whole-school approach (Joubert & Prinsloo, 2013:14; Sulkowsi & Lazarus, 2017:24; Darling-Hammond *et al*, 2020:98-99).

The DBE regards the NSSF as essential to empower responsible school officials in understanding their responsibilities related to school safety (DBE, 2016b:2). The NSSF is a comprehensive document designed to guide schools to achieve a safe and healthy school environment and ensure a unified approach to school safety. The NSSF aims to incorporate existing school safety and prevention strategies and interventions, and link these into one policy. A key aspect of the NSSF is to provide the school system with resources to continually collect data related to school safety. Part A of the NSSF is a conceptual framework towards a common school safety approach, which explains various definitions in relation to school safety and violence. It also provides an overview of a 'whole-school approach'. Part B of the NSSF comprises of a manual and implementation tools that address aspects such as a step-by-step guide, easy-to-use instruments, and training manuals for bullying, homophobia and xenophobia (DBE, 2016:4).

The NSSF is critical in imparting discipline and endeavours, through the DBE, to sustain children's rights, to realise the vision as set out in the NDP 2030, and to ensure a safe educational environment (DBE, 2015, 2021; NPC, n.d.). Essentially, this is to ensure the prevention and management of safety incidents in schools, while the objectives of the NSSF are to understand, identify and provide guidance relating to security threats and issues (DBE, 2015:3, 2016:2). Furthermore, the NSSF is applicable to all schools and should be implemented by the school management in accordance with their needs and/or requirements. The NSSF focuses on prevention through a four-pillar approach of (1) preparedness to manage safety-related aspects, (2) requiring that schools know what is transpiring in the school environment, (3) requiring that schools are ready to 'take action', and (4) requiring that schools 'take

care' by building relationships between all members, as well as developing a network for the support of educators and scholars (DBE, 2016:3, 2021).

The NSSF promotes school safety as part of the school cultural norms and policies, while the implementation of the NSSF is aimed at assisting schools by assessing the school's safety compliance. Schools should be proactive through early intervention and safety management. In addition, schools should build a caring environment through exemplary inter-relationships with all role-players (Makota & Leoschut, 2017:19-20). Furthermore, the NSSF is based on the Hlayiseka School Safety Tool Kit (Section 3.4) of 2006, developed by the Centre for Justice and Crime Prevention in collaboration with the DBE. Research conducted in relation to the Hlayiseka School Safety Tool Kit of 2006 identified that the classroom is the area where most incidents of violence occur (DBE, 2016:3). Research also reviewed the national and international safety legislation and policies to determine what works and what did not work concerning school incidents and violence (DBE, 2016:4).

International legislation addressing the NSSF embraces the Convention on the Rights of Children (CRC) that sets global standards to ensure children's rights and needs by adopting minimum standards for their protection. The CRC explains who children are, their rights, and governments' responsibilities towards children (DBE, 2016:12; Unicef, 2021). With regard to the rights and welfare of children, the African Youth Charter considers children's rights and responsibilities to be inclusive of education. It supports the legislative, educational and administrative measures on child protection, with an emphasis on physical injury (DBE, 2016:12). The African Youth Charter addresses the provision and development of life skills within the educational curriculum and ensures that the youth are protected. South Africa adopted these Charters in May 2009 (DBE, 2016:12).

The NSSF addresses the following national legislation and policies: The South African Constitution Act No. 108 of 1996 and The Child Justice Act No. 75 of 2008 that addresses criminal procedures against a child under the age of 14 years (DBE 2016:12; RSA, 2018:2). Matters relating to children that give effect to the rights of children as per the Constitution are addressed in the Children Act No. 38 of 2005, which aims to protect children against abuse, neglect, maltreatment, discrimination, exploitation, and physical, emotional, and moral harm, and promote the development and well-being of children (DBE, 2016:12). The National School Health Policy and

implementation guidelines assist in providing health services, health promotion, and health education, inclusive of life skills training. The NDP 2030 claims that the safety of scholars requires a coordinated approach to improve the quality of education (DBE, 2016:13; UNESCO, 2021a; Gov.za, 2022b; RSA, 2022).

Educational Acts and policies addressed in the NSSF include the South African Schools Act (SASA) No. 84 of 1996, which aims to address past school inequalities and to provide a high-quality educational system. The NEPA No. 27 of 1996 indicates that the school principal, in terms of the SASA No. 84 of 1996, is accountable and responsible for ensuring that no child is subject to "crimen injuria" by educators and scholars, or other persons. Educators have a duty of care (*loco parentis*) to ensure the protection of scholars (DBE, 2016:13). The Employment of Educators Act No. 79 of 1998 regulates the conditions of educator's services, discipline, retirement, and improper physical contact with scholars (DBE, 2016:13).

Regulations for safety measures at all public schools address safety aspects in relation to dangerous weapons and drug-free zones (DBE, 2016:13). The Government Gazette 24165 of 2002 prohibits initiation practices in schools (South Africa, 2002b). These regulations allow for the protection of scholars from physical or mental violence while in the care of a *loco parentis.* It has been stated that the educator's responsibilities are increasing while parents' responsibilities are being reduced (DBE, 2016:14; Mampane, 2018).

The legal reference and undertakings lead to the development of principles and objectives in the NSSF to contribute towards ensuring a safe school environment. It also allows for the safety and 'feeling safe' on the school premises to create a positive learning outcome and well-being of scholars. In addition, it provides a shared understanding regarding safety and violence, which involves a sense of safety risks and how they could affect educators and scholars. An additional aspect is that of a common approach that allows for the integration of school-specific knowledge and experience. Finally, the framework also refers to symbolising a restorative and proactive approach for creating a safe learning environment (DBE, 2016:15).

Schools form an essential part of modern society throughout the world; a safe school depends on well-trained and adequately staffed educators and management (Sambasivam *et al.,* 2017:580). The NSSF describes a whole-school approach (Figure

3.1) as consisting of various elements or components, such as the school principal, SGB, school management, educators, scholars, parents and caregivers. These elements (components) interact with each other in the holistic system of the school, home, and community, allowing for a specific, targeted, and coherent system and programme. The success of a whole-school approach depends on each element (component) being aware of their roles and responsibilities (DBE, 2016:15-16; Darling-Hammond *et al*, 2020:98-99). A whole-school approach is illustrated in Figure 3.1 as a continuous cycle of actions, from the school principal through to the actions of the SGB and the school safety committee. This whole-school approach includes interactive, and interrelated activities of educators, scholars, student bodies, parents, inclusive of the community, and other school staff.
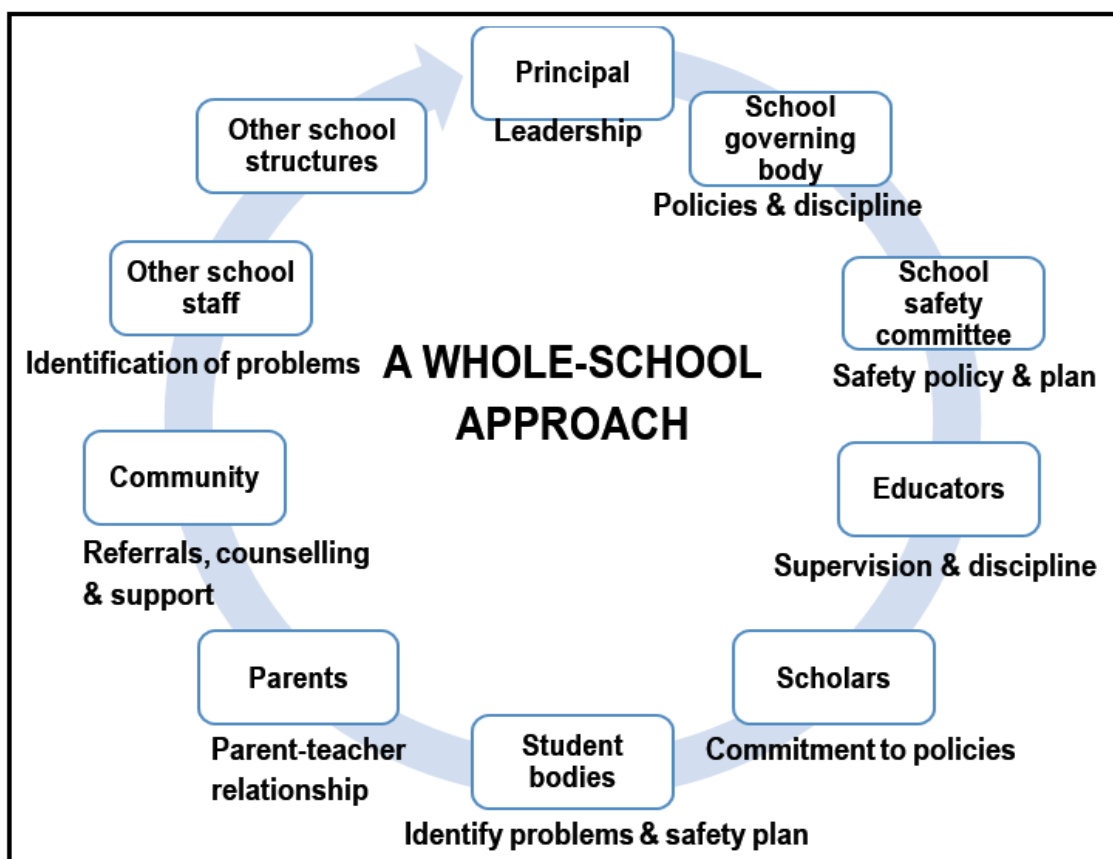
Figure 3.1:   Whole-school approach

Source: Adapted from DBE (2016:16)

Safe schools are developed through commitment and focused planning by the school principal, school management and educators. Planning begins with a school safety audit (external and internal) which determines safety hazards and risks. A practical approach takes the shape of a strength, weakness, opportunity and threat (SWOT)

analysis. The safety audit outlines minimum safety requirements, including the required safety policies and procedures relating to school safety. Safety policies and procedures should be implemented and enforced by the school management and educators. In addition, a safety plan should be developed and implemented to address the safety threats, hazards, and risks identified during the audit. Continual communication and engagement are required through the whole-school approach and process (DBE, 2016:18).

As the whole-school approach follows a continuous cycle (Figure 3.1), the researcher believes that schools following a whole-school approach will have an advantage over schools that do not follow this approach, as well as leading to a safer school environment. The next section explores school management theories. The NSSF is a comprehensive school management tool, however, the implementation of the NSSF is not compulsory and as such does not form part of the legislative framework of the SASA No. 84 of 1996.

3.3   SCHOOL MANAGEMENT THEORIES

Chapter 2, Section 2.3 indicated that a theoretical framework is the blueprint of research and describes the research concepts and theories that are used to provide theoretical, epistemological and methodological support to the study. Section 2.3.1 introduced the jurisprudence (legal) and safety theories. In this section of the study, the management and system theories will be explored in relation to school safety.

3.3.1   Management theory

Managers are vital to any organisation, regardless of whether it is to motivate employees, allocate resources or make decisions, they are essential for the success of an organisation (Hashaw, 2019) and schools are no different. Smith, Babich and Lubrick (n.d.:15) defined management as a process of planning, leading, organising, and controlling in combination with the assistance of resources to achieve the organisational objectives. The management process is also a series of well-organised actions and tasks that are executed in the educational milieu. It is regarded as a discipline to manage educational institutions and to execute educational policies (Ghaswmy & Hussin, 2014:1; Smith *et al.,* n.d.:15). Smith *et al.* (n.d.:15) stated that

leadership is a social relationship and a macro-approach to shape an educational and academic organisation.

For centuries, management theories have been developed and used as a standard part of best practices. The older theories, such as Von Bertalanffy's systems theory of 1968, are still relevant and are continually being adapted as new theories are being developed in accordance with current business trends. In addition, specific standard management theories have been integrated into modern organisations, such as the classical, behavioural, and modern management theories (Von Bertalanffy, 1968; Hashaw, 2019). Modern and contemporary management theories are categorised into a quantitative or contingency approach, or a systems theory, that emphasises techniques to analyse and understand the interrelationship between management and the employee. Classroom management creates an effective learning environment that encourages scholar independence to allow for better educator-scholar engagement. Management theories advocate organisational management strategies as guidelines and rules that help managers (principals and educators) manage the organisation (schools). These management theories focus on the role of supervision and group performance, whereas earlier theories are based on leadership (Achonu, Okoro & Ozomadu, 2019; Technofunc.com, 2020).

Management practices and thinking have reached a stagnation point, and only by discarding these old management theories can school managers (ministers, directors, and principals) begin to develop new management theories that are focused and more meaningful for school safety. In addition, students develop interdisciplinary content in many educational and academic environments that covers vast knowledge and understanding. Therefore, educational, academic managers and administrators can secure a more holistic inter-disciplinary approach/theory (Smith *et al.,* n.d.:49).

Education today is vital for our survival, as knowledge, skills and competence are considered instruments of human sustainability. Education as a whole gives a workable advantage to the changeable conditions of life and work, and represents the scientific discipline of educational management. Management in education should be considered an integral part of all educational institutions in the 21st century. Educational management and leadership were not needed when schools had only one classroom led by a teacher (Tasić, Tubić, Tasić & Mitie, 2011:326, 328). Nowadays, schools are more complex and require a more integrated managerial system that

focuses on all aspects of school management and school safety. The next theory of note in an education environment is that of the systems theory.

3.3.2 Systems theory

The general system's theory, as developed by Von Bertalanffy and Miller in 1968, aimed to formalise the concept of 'life'. In 1978, Miller constructed the theory of 'living systems' by focusing on concrete matter energy and interaction systems. Miller adjusted Von Bertalanffy theory by distinguishing eight hierarchical levels, such as the cell, organ, organism, group, organisations, community, society, and a supranatural system. He viewed every system in nature, society, and many scientific domains as trans-disciplinary and integrative (Von Bertalanffy, 1968; Environment and Ecology, 2021).

A systems theory is assumed to be complex, as it concentrates on several smaller systems in the more extensive system. A systems theory can be applied in several environments, such as a school environment, as it offers practical insight into various disciplines and research, as it views the holistic environment (Online MSW Programs, 2020). When Von Bertalanffy developed the systems theory, it was aimed at aspects of biology and had nothing to do with business. However, an organisation (school) consists of several sub-systems within a more extensive system governed by the same laws and behaviours as the original systems theory. Within the context of a school, the systems theory has the synergy to create something better and more significant within a holistic school management system (Sling by toast, 2021).

Von Bertalanffy's theory of 1968 provided a framework to enable the investigation and management of a holistic school approach. It could include the entire educational institution, academic division, and department in an educational setting. These educational facilities transcend the perception of individual differences, leading to the integration of a standard code provided by the systems theory (Mwangeka, 2020:2; Environment and Ecology, 2021).

Systems theory is an interdisciplinary theory that integrates various systems into one complex system, such as secondary schools within the greater system of safety and the DBE. A basic system comprises of five components, as follows: (1) an input, (2) a transformation process, followed by (3) an output that requires (4) feedback within a specified (5) environment. Mwangeka (2020:2-3) stated that using systems theory in

education is comparable to the education production function, where education prioritises producing human resources (educated individuals). As such, systems theory in education represents the functional relationship between the input by schools and educators, and the output (achievement) of scholars, able to function as working (feedback) individuals in society (the environment) (Mwangeka, 2020:3).

In addition, a school is regarded as a social system that aims to prepare scholars to take their place in society and accept their social responsibilities according to their capacity achieved after leaving school. The school as an institution is a system that plays an integral part in human society, as they are responsible for producing future leaders (Reddy & Sailakshmi, 2018:75-76).

Furthermore, schools interact in society as an open system. They are regarded as part of the systems theory approach, where the systems approach is an external standard used to measure the effectiveness of school sustainability (Saylor Foundation, n.d.). Betts (2021) stated that current education failures are found in past successes, where education has successfully prepared scholars for life after school. Betts (2021) suggests the reason for failure is the inability of schools to integrate new ideas (such as including safety). Instead, schools have remained within the boundaries of existing systems, namely, that of the SASA No. 84 of 1996 and the Hlayiseka Early Warning System (HEWS) of 2006, as incorporated into the NSSF of 2016. Therefore, an effort is needed to incorporate all elements of safety and education into a holistic and integrated school safety system.

The next section explores the aspects of the Hlayiseka Early Warning System (HEWS) School Safety Tool Kit of 2006, as incorporated in the NSSF of 2016.

3.4 HLAYISEKA EARLY WARNING SYSTEM (HEWS) SCHOOL SAFETY TOOL KIT OF 2006

The DBE pursued various strategies to adopt a system that addresses school safety to create a safe learning environment that observes innocence and values human dignity. The HEWS School Safety Tool Kit was developed to assist schools and communities in joining together in the fight against school-based violence and crime (security safety). The system aims to support schools in managing the safety aspects identified in schools, and to link specific policies and procedures that focus on

managing the safety aspects through education surveys (DBE, 2006a:1, 2006b:1, n.d.:5). In addition, the HEWS Safety Tool Kit capacitates schools to evaluate and monitor their performance, and extracts from existing policies and legislation, to merge teaching and learning processes (DBE, 2006a:iv-v).

The HEWS Safety Tool Kit considers safety spots to identify safety threats in relation to violence and bullying, and to identify areas where scholars feel unsafe on the school premises (DBE, 2016b:68-69). It also allows the school to prioritise safety threats and to select appropriate tools to understand and manage these identified safety threats (DBE, 2006c:2, 16). To show the importance of the HEWS Safety Tool Kit, its primary goals are to develop and maintain a welcoming, safe, and violence-free learning environment. In addition, it assists scholars in understanding acceptable behaviour within a school context, and in a broader society, encourages scholars to actively participate in the school and their community (DBE, 2006a:9, 11, 2016).

Based on the literature review, it is evident that the terminology related to the concept of safety, as used throughout the HEWS Safety Tool Kit, includes aspects of security, violence, dangerous objects, bullying, abuse and discrimination. Therefore, safety in this sense does not refer to the legislative requirements of a safe and healthy environment, as prescribed in the OHS Act No. 85 of 1993.

As such, the HEWS Safety Tool Kit of 2006 provides building blocks towards creating a safe school environment. These building blocks include the prevention and management of school problems as they arise, and the measures put in place, such as school safety policies and plans, a scholar code of conduct, a disciplinary procedure, and emergency plans. The HEWS Safety Tool Kit requires that management and educators should be aware of what is taking place on the school premises, inclusive of school security and school access control. They should take action by responding to early warning signs, and ensure safety incident management and the promotion of a human rights culture. Finally, it obligates management and educators to build a caring and safe school environment, together with community partnerships, and build continuous relationships and referral systems (DBE, 2006a:9-10).

Furthermore, the HEWS Tool Kit of 2006 includes a step-by-step guide in the form of a checklist. This includes the identification of safety hazards, risks and threats, and

the development of a School Safety Action Framework (SSAF). A poster of the SSAF can be downloaded from the DBE and Thotong website (DBE, 2006a:15, 2016b:40-41; Thotong South African Education Portal, n.d.). Schools utilise the SSAF to complete a safety audit checklist as a proactive tool, which provides a snapshot of the level of safety in the school and the areas requiring improvement. It is also a proactive tool that assists in providing a safe learning environment, as it concentrates on rules related to school property responsibilities, medical emergencies and treatment, and communication. Hence, the HEWS of 2006 and the NSSF of 2016 should be used in unison.

The review of the literature on school safety systems and frameworks led the researcher to the view that the HEWS of 2006 and the NSSF of 2016 do not address safety aspects, as legislated by the OHS Act No. 85 of 1993, even though they are referred to in the HEWS (DBE, 2006a:43-44). Minor adjustments and updates could be made to the HEWS of 2006 and the NSSF of 2016 to ensure that they are in line with the legislative prescripts of the OHS Act No. 85 of 1996.

The next section discusses international school safety legislation.

3.5 INTERNATIONAL SCHOOL SAFETY LEGISLATION AND FRAMEWORKS

This section benchmarks against world best practices and compares the accessible school safety legislation and frameworks of Australia, the UK, the USA and Canada, and their school safety frameworks to determine how school safety is practised and implemented.

3.5.1 Australia Student Wellbeing Framework (ASWF)

The Ministerial Council on Education, Early Childhood Development and Youth Affairs (MCEECDYA) guided the drafting of the National Safe Schools Framework of Australia (NSSFA) in 2003 (MCEECDYA, 2011:3). The NSSFA was revised in 2017 to the Australia Student Wellbeing Framework (ASWF). The ASWF adopts a whole-school approach (Figure 3.1) to safety by incorporating five key elements: leadership, inclusive and connected school culture, authentic student partnership, effective family and community partnerships, and support for positive behaviour and well-being (Education Council, 2017:4; Government of Australia, 2020).

The ASWF is based on evidence demonstrating an inter-relationship between safety, well-being and learning (Education Council, 2018:24). The revised ASWF highlights the importance of continuous professional learning for the development of cultural respect, the promotion of positive behaviour, and the importance of implementing a whole-school approach (Education Council, 2018:24).

The NSSFA had nine key elements (MCEECDYA, 2011:4) which have been reduced in the revised ASWF to five key elements, namely, leadership that should be visible and inspire a positive school community. Secondly, the inclusion of the whole school community as active participants in building a safe and welcoming school culture. Thirdly, a student voice where students actively participate in their learning and well-being. The fourth element is partnerships with the school between families and the community in support of student learning, well-being and safety. Finally, the fifth element is the support of educators, students as well as families to support positive behaviours and effective teaching (Government of Australia, 2020).

The school principal and educators have an active role in building a positive learning environment through the school's vision and mission. The whole-school approach (Figure 3.1) actively creates an inclusive and connected school culture that strives to achieve value diversity and respectful school relationships. Authentic student participation and a student voice provide the opportunity to be part of the decision-making process on matters that may affect them as educators and students. The ASWF proactively builds family and community partnerships in support of student learning, safety, and well-being, and actively engages with educators, students and parents in support of a positive school behaviour to promote resilience and well-being in alignment with the needs of the school (Education Council, 2017:7-11; ASWF, 2018; Government of Australia, 2020).

The revision of the NSSFA to the ASWF (2018) streamlined the framework to incorporate essential elements of a whole-school approach (Figure 3.1) and a safer school environment. In comparing these frameworks, the NSSF of South Africa could be streamlined to address the five key elements as outlined in the ASWF. In continuation with international safety legislation, the UKs Health and Safety at Work etc. Act of 1974 is reviewed below.

3.5.2 United Kingdom: Health and Safety at Work Etc. Act (HSWA) of 1974

The First Industrial Revolution (1760-1830) had an overwhelming effect on social change in the UK, with its squalid living conditions and various epidemics of infectious diseases. This led to the development of specific health and safety legislation, and the current health and safety system that was established under the Health and Safety at Work etc. Act (HSWA) in 1974 (Harrison, 2012; EU-OSHA, 2018).

Although the HSWA of 1974 was drafted more than 40 years ago, it is still the primary legislation governing health and safety in the UK, with various regulations developed under the HSWA, where these regulations set out the actions required by the employer. There are fundamental sections to the HSWA, where section 2 places a duty on the employer to ensure the health, safety, and well-being of employees. section 3 places a similar obligation on employees to ensure the health and safety of any non-employee affected by their work activities. section 7 places the duty of care on the employee to ensure their own health and safety. Finally, section 33 places the safety responsibility on directors and senior managers, inclusive of prosecution should they be found guilty of an offence. These duties apply in England, Wales, Scotland, and Northern Ireland (Legislation.gov.uk. n.d.).

The management of the HSWA amendment Regulation of 2006 requires employers to assess their safety risks to employees to identify H&S measures. The Regulation requires that measures be introduced to manage identified safety risks, inform employees regarding safety risks, and ensure employees' training in relation to health and safety (HSE, n.d.e; Legislation.gov.uk., n.d.).

The HSWA of 1974 states that employers have a duty towards employee's health, welfare, and safety while at work. Employers also have an obligation and duty in relation to the HSWA of 1974 to allow employees to promote and develop measures that would ensure their health and safety (Legislation.gov.uk., n.d.). The HSWA of 1974 outlines the structure, authority, and enforcement of the general duties of employers (school principals), employees (educators), contractors and other workplace (school) managers. The Act also established a system of workplace supervision through the creation of an H&S commission and health and safety executives (HSEs).

It allows for the empowerment of employees (educators) to enable greater leadership in the workplace (schools), including greater opportunities to improve OHS management in support of health and safety (Harrison, 2012; Janalta Interactive, 2021). The HSWA of 1974 addresses activities conducted within a school context, inclusive of activities conducted away from the school premises and school trips. The responsibility and accountability of safety reside with an employer in terms of the HSWA of 1974. The HSWA Act applies to a school environment (HSE, n.d.a), where the responsibility and accountability reside with school management and educators responsible for ensuring that risks within the school environment are managed effectively (HSE, n.d.c).

School health and safety risks include slips, trips, and falls, falling from heights, transportation movements, asbestos management, and construction and maintenance activities in and around the school (HSE, n.d.a; HSE, 2013). In the UK, the H&S management should focus on the risks that have the potential to cause harm, injury and/or damage. Educators should therefore follow a practical and balanced approach to H&S management, to promote risk awareness (HSE, n.d.b; HSE, n.d.e.).

The UK recognises OHS as a paradigm that combines health risk management with workplace assessment, rehabilitation, and promotion of health and well-being (Harrison, 2012; U.S. Department of Education, 2018). The HSE, in collaboration with the UK DBE, also has a website where frequently asked questions related to education and the HSWA of 1974 can be sourced. The UK HSWA of 1974 manages and reduces workplace incidents, accidents, injuries, illness and death by taking the relevant actions to reduce workplace risks (HSE, n.d.d). The next section reviews school safety in the USA.

3.5.3   School Safety in the USA

School safety in the USA is managed under the National School Safety and Security Service (NSSS) that views school safety as a balanced and comprehensive approach, while the human side of school safety remains a critical factor (National School Safety and Security Services, 2019). The literature has found that school safety in the USA has been addressed from the perspective of security, physical safety, and school violence (Seraph, n.d.).

In 2018, the president of the USA, Donald Trump, led the Federal Commission on school safety (FCSS) to provide significant recommendations and best practices to ensure school safety (U.S. Department of Education, 2018b; FCSS, 2018:11). The FCSS was tasked in 2018 by President Trump to conduct research, make recommendations, and improve school safety to ensure student safety (U.S. Department of Education, 2018b; FCSS, 2018:8). According to the FCCS report, no school will have the same school safety plan (U.S. Department of Education, 2018b; FCSS, 2018:36).

A Safe Schools Framework Implementation Toolkit (SSFIT) was developed by the Substance Abuse and Mental Health Service Administration (SAMHSA) to assist schools in achieving a comprehensive approach to school safety (U.S. Department of Education, 2018b; FCSS, 2018:12). The SSFIT addresses aspects of strategic processes and collaborative community partnerships, including elements such as promoting child well-being, while creating a safe and violence-free school environment. The principles of the SSFIT are cultural and linguistic competency, serving values and at-risk populations, development, sustainability, youth-guided and family-driven, and evidence-based intervention (National Center for Healthy Safe Children, n.d., 2022).

In collaboration with the SSFIT, the Safe Schools/Healthy Student Framework (SS/HSF) Implementation Toolkit assists with planning and implementing a comprehensive school safety approach through the implementation of best practices to prevent violence (FCSS, 2018:31; National Center for Healthy Safe Children n.d., 2022). The SS/HSF is a free online programme developed around best practices in a real-world setting (National Center for Healthy Safe Children, 2022).

In addition, the researcher notes that the SSFIT addresses aspects of school violence, security and health (National Center for Healthy Safe Children, n.d., 2022). Another framework developed and implemented during the Federal Commission was the System of Care (SoC) framework that includes all systems used to provide a service to children that provides a comprehensive, community-based mental health prevention and support service to scholars in the USA. In addition, it includes services such as social and juvenile justice services (FCSS, 2018:36).

As with the South African NSSF, the SSFIT, SS/HSF, and SoC of the USA do not focus on aspects of school safety in the context of legislated physical human and workplace safety, thus creating a gap in school safety legislation and implementation in both the USA and South Africa. In 2018, the FCSS explored ways to prevent violent incidents, such as school shootings, and to provide significant recommendations to ensure school safety (U.S. Department of Education, 2018b; FCSS, 2018:158). The next section presents an overview of school safety in Canada.

3.5.4   School safety in Canada

In Canada, the Canadian Federal Health and Safety legislation is referred to as Canada Labour Code Part II (CCOHS, 2019c). School safety in Canada is managed under the banner of the Canadian Safe Schools Network (CSSN) that foresees a school society that develops a caring and risk-free school environment (Canadian Safe Schools, n.d.). The Canadian Safety Council (CSC) is an association that aims to prevent injuries to children by promoting safety education and awareness through an interactive website on child safety (Canadian Safety Council, n.d.).

In 2016, the CCOHS published a school workers' health and safety guide that assists school management in managing safety risks in schools. It also guides school management in relation to assessing school workplace hazards, preventing injuries, and understanding the duties and responsibilities stipulated in the Canadian OHS legislation (CCOHS, 2008, 2016).

South Africa could utilise aspects of the school worker's H&S guide in the South African NSSF to assist with the identification of school workplace conditions and practices to suit the OHS needs within a school environment, and to establish safe work practices within a variety of school tasks (CCOHS, 2008, 2019a, 2021). In summary, Table 3.1 presents a synopsis of the school safety frameworks discussed.

Table 3.1:   Synopsis of school safety frameworks of South Africa, Australia, the UK, USA and Canada

South Africa	Australia	UK	USA	Canada
National school safety framework (NSSF)	**Australian student wellbeing (ASW)**	**Health and Safety at Work etc. Act (HSWA) of 1974, State and Federal Laws**	**Safe Schools Framework Implementation Toolkit (SSFIT)**	**The Canadian Schools Act Chapter No. 421 of 1996**
A comprehensive document aimed at guiding schools in the achievement of a safe and healthy school environment by following a whole-school approach (Figure 3.1).	It follows a whole-school approach (Figure 3.1) to safety and incorporates five key elements, namely: leadership, connected school culture, authentic student partnership, influential family and community partnerships, and support for positive behaviour and well-being.		The National School Safety and Security Service (NSSS) views school safety as a balanced and comprehensive approach.	
Developed to provide a management tool for school managers to manage aspects of school safety.	Demonstrates an inter-relationship between safety, well-being and learning.	Does not follow a school framework. School safety is included in the HSWA of 1974.	School safety in the USA is managed under the NSSS.	The CSSN aims to prevent injuries to children by promoting safety education and awareness through an interactive website on child safety.
It empowers school officials to understand their responsibilities concerning school safety.	It empowers continuous professional learning towards cultural respect, promoting positive behaviour, and implementing	The responsibility and accountability for school safety resides with school management and educators.	The SSFIT addresses SAMHSA.	A school worker's H&S guide assists school management in managing safety risks in schools, preventing injuries, and

South Africa	Australia	UK	USA	Canada
	a whole-school approach (Figure 3.1).			understanding the duties and responsibilities in schools.
Incorporates existing school safety, prevention strategies, and intervention into one policy.	Creates a connected school culture that strives to achieve value diversity and respectful school relationships.	The HSWA of 1974 addresses activities conducted within a school context, inclusive of activities conducted away from the school premises and school trips.	The SSFIT addresses aspects of strategic approaches and collaborative community partnerships.	
Provides the school with resources to continuously collect data related to school safety.		Educators follow a practical and balanced approach to H&S management to promote school risk awareness.		

Source: Researcher's own compilation

The next section discusses the global programme for school safety under the auspices of the Worldwide Initiative for Safe Schools (WISS).

3.6   WORLDWIDE INITIATIVE FOR SAFE SCHOOLS

The Worldwide Initiative for Safe Schools (WISS) is a coordinated global initiative for safe school implementation programmes from various countries. The United Nations (UN) Office manages the initiative for Disaster Risk Reduction (DRR). The WISS focuses on global support and motivation for the development of national safe schools' strategies that build on the Comprehensive School Safety Framework (CSSF) (United Nations office for Disaster Risk Reduction (UNISDR), 2017; GADRRRES, 2021).

The purpose of the CSSF is to reduce hazards and risks in the global education sector through the following pillars of school safety, namely, safe teaching and learning facilities, school disaster management, and resilience education and risk reduction. The goals of the CSSF are to protect educators and scholars from injury, illness, and death in schools; to plan for continuous education during any expected hazard and/or safety threat; and to strengthen risk reduction through education (United Nations International Strategy for Disaster Risk Reduction (UNISDR), 2017:2; UNDRR, 2021).

The CSSF is aligned with the SDGs of 2015 to 2030 with improved safe access to education (UNISDR, 2017:6). The CSSF target goal 3 links to the SGD goal 3 and relates to healthy lives and promoting an individual's well-being. The CSSF target goal 4 can be linked to SDG 4, while point 4.7 relates to reasonable education opportunities. The CSSF target goal 9 links to SDG 9 relating to sustainable and resilient infrastructure, inclusive of school buildings (UNISDR, 2017:6; UNDRR, 2021) and promoting an individual's well-being.

The CSSF undertakes to ensure global due diligence procedures in relation to the construction of schools to ensure that newly developed schools are safe. It undertakes to conduct international audits, encourage governments to assess their school facilities, and to implement safety actions to ensure educational facilities are safe. The CSSF also encourages the development and promotion of infrastructure and non-structural safety

measures within education facilities (UNISDR, 2017:8; UNDRR, 2021). This links to the next section, which reviews school safety in developing countries.

3.7 SCHOOL SAFETY IN DEVELOPING COUNTRIES

For the past 50 years, developing and ongoing education has been the primary frame of reference for change in schools and classrooms in developing countries. Progressive education has not replaced formal teacher-centred education, where the educator's role is changing from the transmitter of knowledge to that of mediator and facilitator (Guthrie, 2018:1, 104).

The World Economic Situation and Prospects (WESP) categorises countries across the globe into developed economies, economies in transition, and developing economies, reflecting the country's economic condition. Developing countries include Africa, East, and Western Asia, Latin America, and the Caribbean (WESP, 2014:143, 2022:7).

The education departments are concerned with the educational challenges in the school system and are under pressure to improve all aspects of school safety. The result of poor school safety has a detrimental effect on the social cost of education, without an increase in the rate of return or social school benefit (Legotlo, 2014:7). In addition, during 2020 and 2021, the Covid-19 pandemic had a detrimental effect on the economic cost of learning loss in developing countries that is still unknown as the pandemic is ongoing (Hanushek & Woessmann, 2020:7).

The Global Program for Safer Schools (GPSS) functions at global and country level, and focuses on obtaining evidence-based knowledge to provide a worldwide perspective on the promotion of a long-term approach to improve school infrastructure. At the country level, the focus of the GPSS is to design and implement safe school programmes, influence policies related to risk reduction, and advise on the long-term national strategy to promote and prioritise safer school environments (World Bank, 2018). The GPSS developed the roadmap for safer schools in 2014, to promote a systematic approach for safer schools and act as an operational tool to guide educational managers and stakeholders towards promoting school safety. The purpose of the roadmap for safer schools is to present governments with support and guidance in their effort to improve the

resilience and safety in schools (World Bank, 2018). The GPSS has identified opportunities to design risk-reduction strategies to ensure safer educational and school facilities (World Bank, 2018).

Developing countries do not have an effective health and safe environment in which to survive, and are dependent on developed countries for support. Research conducted by Legotlo (2014:7) showed that challenges in developing countries' educational systems, such as in South Africa, are mainly concerned with the inefficient use of educational resources, such as teaching staff, lack of prescribed school books, poorly maintained facilities, and a shortage of school facilities and classrooms (Legotlo, 2014:7-8; Mohamed, 2020:2-3).

A group of countries came together to address global governance and support each other in their endeavours to achieve educational success. These countries comprise of the BRICS group (Nayyar, 2016:575; Brics, 2019; Brics, 2021).

3.8   BRAZIL, RUSSIA, INDIA, CHINA AND SOUTH AFRICA (BRICS)

The first BRICS meeting was held in 2006, and the first summit took place in 2009 in Russia. In the years since inception, BRICS has continued to expand on its foundation (Brics2017.org, 2017; Miller, 2021).

The BRICS League for Education was developed in 2013 to become an academic platform for expert cooperation, comparative research, and international educational projects in fields such as technology and infrastructure. This initiative brought together representatives from leading educational institutions from BRICS nations (Seregin, 2013:1; Granello, 2016:2; Miller, 2021).

Since the establishment of BRICS, the BRICS Ministers of Education have agreed on various comprehensive educational themes to drive holistic educational development (Villette, 2018). They came together in 2021 and pledged to intensify their cooperation on education, collaborate on research, enhance education, and facilitate student progress. The purpose is to promote global education policies that consider common concerns regarding educational safety amongst these countries (Paul, 2017).

As reported in scholarly literature, the 2020-2021 the global Covid-19 pandemic caused havoc all over the world, and placed a strain on the education fraternity, along with challenges, inequities, vulnerabilities inclusive of human resourcefulness, not only in education but in many areas of daily life. Internationally, the education milieu suffered extensive disruptions and setbacks. The pandemic placed an additional burden on schools, as policies had to be urgently updated to address online education, and Covid-19 guidelines had to be developed. This section reviewed the education processes that were applied to each of the BRICS nations (Niemczky, De Beer & Steyn, 2021:182; RSA, 2021a). The section below discusses school safety in Brazil, followed by Russia, India, China, and South Africa.

3.8.1   Brazil: School safety

The standard of education in Brazil is regarded as poor because the public education system is underfunded and overwhelmed by structural problems and overcrowding (Expat Arrivals, 2019). However, the Brazilian Constitution sees education as a universal right, and education in Brazil is administered under the Federal Government through the Minister of Education who establishes the guiding principles.

In 1996, a National Education Bases and Guideline Law was promulgated (*Lei de Diretrizes e Bases da Educacao),* which outlined the educational system. In addition*,* local governments are responsible for developing guidelines and educational policy. Brazil has approximately 50 972 61 scholars, of which 43 053 942 are in public schools (Brazil Education info, 2022).

The Brazilian government launched a successful online school programme in 2009 in an attempt to curb school violence (Charassangsomboon, 2018). The global Covid-19 pandemic that forced the closure of Brazilian schools in March 2022, brought several challenges on how to deal with a fully online school academic year. Classroom teaching was replaced with online, distance education, and home schooling. This new way of teaching brought about its own challenges as parents now became the teacher, while continuing with their work responsibilities while working from home (Niemczky *et al.*, 2021:177).

3.8.2 Russia: School safety

As stated in Section 2.11.2, in Russia, the Ministry of Health and Social Development (MHSD) is responsible for the establishment of policies on safety and health and workplace programmes. However, the literature shows that Russia is experiencing challenges with school safety and security, as Russian schools have focused their safety policies on security in terms of acts of terrorism (Vavilova & Matveev, 2012). In addition, Russia focuses on improving the quality of school care through a National Safety and Health Project (Marten *et al.,* 2016:2166).

The Russian Federation Sustainable Development Goal (SDG) 3 relates to healthy lives for all citizens and promotes well-being. SDG 4 warrants an equitable quality education and promotes lifelong learning opportunities. In line with SDG 4, the revised 2014 Constitution of the Russian Federation (2021:10-11) states that every person has a right to education, and basic education is mandatory.

Similar to Brazil, the Russian Minister of Education recommended the closure of schools due to the Covid-19 pandemic in 2020. More than 9 000 schools were closed, with approximately 16.5 million scholars shifting to online education in Russia (Niemczky *et al.*, 2021:179).

3.8.3 India: School safety

In India, the Right to Education (RTE) Act of 2009, as amended in 2011, sets the minimum standards related to school location, quality and sets the foundation for a school management committee. It further provides guidelines pertaining to the implementation of minimum school safety standards (GoI, 2016:4). The Act fosters the identification of many safety hazards leading to unsafe schools. For example, many schools in India do not have ablution facilities, and scholars are forced to relieve themselves in the open, while the Indian government does not do much about the situation (Sujatha, 2017; GoI, 2021).

The RTE Act of 2011 states that education is free and compulsory until the completion of basic education. In addition, it fosters a system of child-friendly and child-centred learning. Furthermore, it prohibits physical punishment and mental harassment (GoI, 2021).

In response to the global Covid-19 pandemic, India followed suit with the rest of the world in 2020 by instilling a national global Covid-19 lockdown. This lockdown affected 1.5 million schools in India, with 8.35 million educators and 250 million scholars being affected by the school closures. As with Brazil and Russia, an online teaching system was initiated in India. The Indian government and the Ministry of Human Resource Development (MHRD) undertook specific measures to overcome the challenges that came with the global Covid-19 pandemic (Niemczky *et al.*, 2021:180-181).

3.8.4   China: School safety

China is characterised by progressive business and economic development, and its education system is said to be competitive and challenging (InterNations, n.d.). Furthermore, China has one of the largest public education systems in the world that strives to transform the health of the nation through a national curriculum of reform with fundamental implications to physical education. The state promulgates the school requirements to ensure uniformity and gives attention to safety, hygiene, and healthy conditions (Guthrie, 2018:83, 92; Meng, Horrel, McMillan & Chai, 2021:595).

China aims to develop a teaching and learning environment in schools that enables excellent performance from scholars and optimal productivity from educators. China conducted investigations on school buildings and school grounds to identify their geological hazards, and to develop safety plans (China Development Gateway, 2006; Rocchi *et al.,* 2013). The establishment of 'safekids.org' has allowed China to embark on various projects to improve school safety awareness and safety behaviour (WHO, 2017c).

In 2020, China became the epicentre to the Covid-19 pandemic resulting in the closure of schools that affected 200 million scholars (Niemczky *et al.*, 2021:182; Olufadewa *et al*, 2021:57).

3.8.5   South Africa: School safety

Education in South Africa is shared between the Department of Basic Education (DBE) and the Department of Higher Education (DHET). The DBE manages schools from Grade R to Grade 12. Various research studies related to school administration and security have been conducted in schools in Sub-Saharan African and South Africa. These studies

have identified a strong influence at higher policy levels with a minuscule paradigm shift to the classroom environment, attributing facility failure to structural conditions (Guthrie, 2018:117). In March 2020 the South African government initiated Covid-19 lockdown level five resulting in the closure of schools. During this time schools initiated an online learning system for scholars until the partial re-opening of schools on Covid-19 level three. Scholar numbers had to be restricted in classrooms and physical contact was restricted amongst educators as well as scholars. In 2020 the Department of Education announced a recovery plan that focused on teaching catch-up plans and efforts on promoting teaching and learning for scholars from home through internet-based education (Niemczky *et al.*, 2021:183-184).

3.8.6 A synopsis of the BRICS Nations

The main objective of education is to educate children in preparation for future life. During the World Education Forum in Dakar in 2000, the Dakar framework for education was established to address the basic learning needs of children under BRICS and to improve education globally. In addition, this included restructuring education and promoting equity and quality education (Van Jaarsveld, 2021).

A detailed discussion related to the OHS Act No. 85 of 1993 and the safety regulations was given in Chapter 2 of the study. In addition, the chapter described and investigated fundamental safety management frameworks. Furthermore, Chapter 2 explored international safety legislation and gave a short overview of the BRICS nations. This Chapter 3 concentrated on the SASA No. 84 of 1996, the NSSF and the HEWS School Safety Tool Kit to find a link between the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996. Section 3.5 also provided a brief overview of international school safety legislation, as well as school safety in the BRICS nations. As with other countries and the global Covid-19 pandemic, South Africa had no alternative but to close schools to curb the spread of the virus.

In summary, the global pandemic of Covid-19 had a significant impact on education in the BRICS nations and worldwide. It has changed the way of viewing the whole-school approach (Figure 3.1) where attempts made by the educational consortium in the BRICS nations have led to improved policies, and the development of new teaching and learning

strategies. The need to provide adequate education for all, regardless of the circumstance should be a priority for all educational facilities worldwide. The ability of every nation to manage any unique and extraordinary educational challenge requires solidarity, unification, and global participation (Niemczky *et al.*, 2021:185).

In the post Covid-19 era, an aspect of concern amongst the BRICS nations is that of school violence, and the inability of children to attend school, while governments across the world endeavoured to establish a means of delivering safe education. In 1995, the WHO launched the Global School Initiative (GSI) to strengthen education globally, nationally, and at regional levels. The GSI strategy includes research to improve school H&S programmes and collaboration between health, safety, and education in schools (WHO, 2017a, 2017b). A review of the literature on school safety in the BRICS nations, shows that the literature focuses on aspects of violence, bullying, abuse, and physical safety, and not necessarily on aspects linked to workplace (school) safety. Therefore, a gap has been identified in the literature concerning school safety.

3.9 CONCLUSION

This chapter gave an overview of school legislation in South Africa and examined the SASA No. 84 of 1996 and the NSSF of 2016 to link school workplace safety to school legislation. The review of the SASA No. 84 of 1996, showed that safety, as such, was not addressed as aligned with the OHS Act No. 85 of 1993. The SASA No. 84 of 1996 addresses security safety, violence, bullying, and vandalism; thus, presenting a gap in the literature regarding school safety legislation in South Africa.

The chapter then explored the theoretical framework and examined theories linked to school safety, such as the management theory (Section 3.3.1), as managers are vital to any organisation. Schools function as a system and a complex structure with several smaller sub-systems (classrooms) in the more extensive school system. The systems theory (Section 3.3.2) explored Von Bertalanffy's general systems theory, where the school context has synergy (working together) to create something better and more significant within a holistic school management system.

This was followed by an exploration of the HEWS School Safety Tool Kit that was developed to assist schools in joining together to fight against school-based violence and crime (safety). It considered safety threats in relation to violence and bullying. It allows schools to prioritise safety threats and select appropriate tools to manage their identified safety threats.

Next, the chapter presented a comparison of international school safety frameworks, such as the Australian ASWF, the UK HSWA of 1974, the USA SSFIT, and Canada's CSSN. This was followed by an exploration of the Worldwide Initiative for Safe Schools (WISS), a coordinated global initiative for safe school implementation programmes across several countries. The focus of WISS is on global support and the development of national safe schools' strategies that build on the Comprehensive School Safety Framework (CSSF) to reduce hazards and risks in the global education sector.

School safety in developing countries was examined under the Global Program for Safer Schools (GPSS) that functions at a global and national level. The focus of the GPSS is on obtaining evidence-based knowledge to provide a worldwide perspective to promote and improve school infrastructure. In addition, school safety in the BRICS nations was examined in terms of how each of the BRICS nations has addressed safety in education.

The next chapter presents the research design and methodology adopted in the study to quantify the identified gap between legislated school safety in public secondary schools in Gauteng. The mixed method research design and methodology employed in the study was split into two phases, where Phase 1 comprised of the qualitative research and Phase 2, the quantitative research, as discussed in Chapter 4.

CHAPTER 4:
RESEARCH METHODOLOGY

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CHAPTER 4. OVERVIEW
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4.1 INTRODUCTION

The choice of the exploratory sequential mixed method can improve academic research as it can draw on the potential of both qualitative and quantitative methodologies. This chapter describes both the qualitative and quantitative methodology used to identify, select, and process the collected data. The chapter begins with an overview of the problem statement, research questions, and research objectives. This is followed by a two-phased approach, beginning with the qualitative research design, research strategy, research paradigm, and methodology for this study, which was based on an exploratory sequential mixed method design. The initial qualitative data collection was conducted through interviews, followed by the study's second phase, which comprised a quantitative research design, using a questionnaire. The research environment outlines the target population, sample size, sample error, and response rate. The data collection section outlines the interview guide, questionnaire design, and pre-testing. It also addresses aspects of trustworthiness, validity and reliability for each of the phases. This is followed by the data preparation, processing, and analysis software, data cleaning, and treatment of missing values. The final section in this chapter presents the ethical considerations of the study.

4.2 PROBLEM STATEMENT

The problem that the current study set out to investigate is related to the legislated safety characteristics, as legislated by the OHS Act No. 85 of 1993, to close the legislative gap between the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to promote a safe school environment. The study is related to the lack of safety legislation being implemented and that is required to create a physically safe environment in public secondary schools in Gauteng.

The problem was confirmed through the study of Mabasa (2013:2), stating that teaching and learning is ineffective when educators and scholars feel unsafe. Similarly, Masitsa (2011:174) argued that although South Africa has safety and school legislation in place, many schools are still transgressing and are faced with serious safety concerns. One such concern is the asbestos in South African schools.

In addition, Gina and White (2014:208) debated that further research is needed relating to the safety of educational facilities. The study of Van der Voort and Wood

(2014:3) related to school improvement plans and legislated knowledge argued that appropriate and supportive school safety improvement plans are required. Van Jaarsveld *et al.* (2012:127) explored a safe school environment, and maintained that the DBE should make school safety a priority on the educational agenda.

A more recent study by Sinthumule (2017) on creating a safe and secure teaching and learning environment found that safety and security in schools is crucial for effective teaching and learning. Furthermore, the study revealed that any unsafe acts that are left unattended could erode the school environment and impact the school's performance (Sinthumule, 2017:26-27). A further study conducted by Esterhuyzen (2017) on occupational health and safety in small businesses found that legislated occupational health and safety compliance was inadequate in South Africa (Esterhuyzen, 2017:56).

As indicated, the study investigated the legislative gap between safety implementation in schools in accordance with the OHS Act No. 85 of 1993. In addition, the study compared the prescript of legislated safety in the OHS Act No. 85 of 1993 with the prescripts of safety in the SASA No. 84 of 1996 to promote a safe school environment in public secondary schools in Gauteng. The research problem led to the development of the research questions that the study aimed to answer.

4.3   HYPOTHESES AND RESEARCH QUESTIONS

A hypothesis is a statement based on a presumption of existing relationships between two or more variables (Dubey, Kothari & Awari, 2017). It is used to explain the relationship between legislated safety and school safety. The hypotheses for the study were outlined in Section 1.7.1 as:

H_1: There is a relationship between knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety.

H_2: Compliance to the OHS Act No. 85 of 1993 leads to the effective implementation of legislated school safety.

H_3: Implementation of legislated school safety creates a safe school environment.

The research questions that were formulated for the study in Section 1.7.2 are:

1. Is legislated safety practised in line with the OHS Act No. 85 of 1993 in public secondary schools in Gauteng?

2. What is the level of legislated safety knowledge amongst school educators in in public secondary schools in Gauteng?

3. What is the level of legislated safety compliance in public secondary schools in Gauteng?

The hypotheses and research questions for the current study stem from the research objectives.

4.4   RESEARCH OBJECTIVES

The study sought to address the research problem by developing the research objectives as formulated in Table 1.1 where the primary research objective is to explore the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety. The research was based on an exploratory sequential mixed method (qualitative and quantitative) approach, outlined in the next section.

4.5   QUALITATIVE AND QUANTITATIVE RESEARCH

This study integrated qualitative and quantitative research (Bryman, 2012:37; Creswell, 2014:43; Saunders *et al.,* 2016:169) through an exploratory sequential mixed method research using a multi-phased data collection methodology. Exploratory sequential research can also be conducted in reverse (quantitative then qualitative) or as a continuous research study allowing for a deeper understanding of the research needs (Berman, 2017:19; Biddix, n.d.; Gudikandula, 2018; Creswell & Plano Clark, 2018:65).

There are five distinctive mixed method research characteristics, according to five leading schools of thought as propounded by Greene (2007), Teddie and Tashakkori (2009), Curry and Nunez-Smith (2015), Plano-Clark and Ivankova (2016), Creswell and Plano-Clark (2018), and Poth (2018:36). The first of the characteristics of the mixed method is the generating of insight through integrating several sources of qualitative and quantitative data. The next characteristic is the use of design to guide the data procedures addressing the mixed method problem. Furthermore, the research should meet the ethical standard of conduct for qualitative, quantitative, and

mixed method research. In addition, the conduct of mixed method research is guided through philosophical perspectives and theoretical frameworks. Finally, research is shaped by the research context (Poth, 2018:37).

Qualitative research is generally used for theory development, and the research is dependent upon the participants selected for the study. The measurement instrument used is tailored to the context and is more flexible. It further allows for the investigation of perception and significance in a particular research setting. In contrast, quantitative research methods consider philosophies in relation to quantity, occurrences, numbers, and concentration (Saunders *et al.,* 2016:165; Salkind, 2018:173). The current study used a mixed method research in a two-phased approach, where Phase 1 consisted of the qualitative research and Phase 2 consisted of the quantitative research.

An exploratory sequential mixed method approach can improve academic research by drawing on the potential of both methodologies (Berman, 2017:5) to achieve meaningful results. Mixed method research collects and analyses both text and numerical data to provide a complete research understanding and strategy. In the case of the current study, it was useful to gain an in-depth understanding of safety trends in schools (Creswell *et al.*, 2015:269, 271).

4.5.1 Research philosophy and paradigm

Research philosophies are the researcher's thoughts that allow for the development of new and reliable research knowledge, adding to the research body of knowledge. Research philosophies emphasise different assumption while focusing on explaining the research methodological differences. Creswell and Poth (2018:315) propounded the view that a specific philosophical perspective provides the foundation for phenomenological studies that allows the researcher to experience the research through their senses and to report on the meaning as preserved by individuals. It enables the researcher to capture the 'essence' of the study. The research philosophy allows the researcher to refine and clarify the research method, and subsequently, gather evidence through data collection to answer the research objectives and/or research questions. The research philosophy also helps the researcher to avoid inappropriate and unrelated works, thereby allowing the researcher to be more creative and exploratory with his/her research methodology (Creswell & Poth, 2018:315).

The meaning of the term paradigm (or pattern) is defined in research as a "way of seeing the world that frames the research topic" and influences how the researcher views the research topic (Kamal, 2019:1388). A paradigm is a focal point and measurement stick; it is a belief about a specific problem and a set of agreements on how the problem should be approached and investigated. It is a means of reasoning, and how the researcher applies the theory and research methodology.

The research paradigm consists of the positivism, realism, interpretivism, and pragmatism philosophies and includes methodology, ontology, and epistemology (Kivunja & Kuyini, 2017:26; McGregor, 2018:28; Walia & Chetty, 2020:26). Ontology is a branch of philosophy related to assumptions made, and influences how a researcher perceives the study. Epistemology refers to the theory of knowledge, that which the researcher believes is sufficient information, and how the information can be used to build a logical argument. It is the process of generating knowledge and experience. In the post-positivistic paradigm, knowledge is objective, and in the constructivism, paradigm knowledge is subjective (Kivunja & Kuyini, 2017:27, Baran & Jones, 2020:5).

For the purpose of the study, the researcher followed a pragmatic philosophy that begins with a problem and aims to give a practical contribution. Pragmatism is both subjective (inductive) and objective (deductive), as well as being based on facts and values (Dudovskiy, 2018b). A pragmatic philosophy uses the most appropriate method to address research and makes use of accurate, vigorous, and dynamic knowledge by considering theories, concepts, ideas, and research findings through a specific framework. Pragmatism focuses on the problem, problem-solving, and future contribution (Saunders *et al.,* 2016:137, 142; 2019:150). It finds a solution to real-world problems and allows for the collecting and analysing of data in the context in which it occurs (Creswell & Poth, 2018:34). The research is value-driven, initiated, sustained, and nurtured by the researcher in an attempt to determine a practical solution to the implementation of legislated school safety.

When trying to understand a research problem, pragmatism argues that the "truth is what works best" as qualitative and quantitative methods have enough similarities to be compatible in a single study, as such, research collects and analyses data to provide a complete research understanding and strategy (Creswell *et al.,* 2015:271).

4.5.2 Research approach and methodological choice

The approach to theory development may be deductive, inductive, or abductive. Deductive reasoning aims to confirm the theory, while in contrast, inductive reasoning develops theory, and abductive reasoning expands on current theories (Saunders *et al.,* 2016:148). As the study was conducted in secondary public schools, the inductive approach was selected for the study, which allowed the researcher to use a 'bottom-up' approach (Patten & Newhart, 2018:9). It involves applying specific interpretations and assumptions to a target population. The inductive approach uses statements and conclusions to formulate a theory (Patten & Newhart, 2018:9).

Research is a systematic process undertaken by a researcher for the purpose of researching a specific topic and adding new knowledge. Research can be viewed as a plan that is conducted to maximise the validity of the findings. It is about how the researcher gets to know and enquire about the research problem through the use of various research methods (Saunders *et al.,* 2019:5; Walia & Chetty, 2020). Furthermore, Henning, Van Rensburg and Smit (2018:15) stated that research methodology and epistemology are intimately related, where methodology involves the researcher's philosophy, and where the researcher comes to know the study and epistemology involved and how the study is accomplished Furthermore, the methodology indicates the process of developing knowledge and the relationship between the knowledge and the research outcome (Davison, 1998; Saunders *et al.,* 2016:124, 726).

Research methodologies are varied and range from mono-method, multi-method to mixed method choices. As such, these methods make use of qualitative or quantitative data collection methods. A mixed method research uses both qualitative and quantitative data collection (Saunders *et al.,* 2016:166). The research methodology addresses the methods, techniques, and process, where the research onion (Figure 4.1) as outlined in Saunders *et al.* (2019:130) was followed in the research.
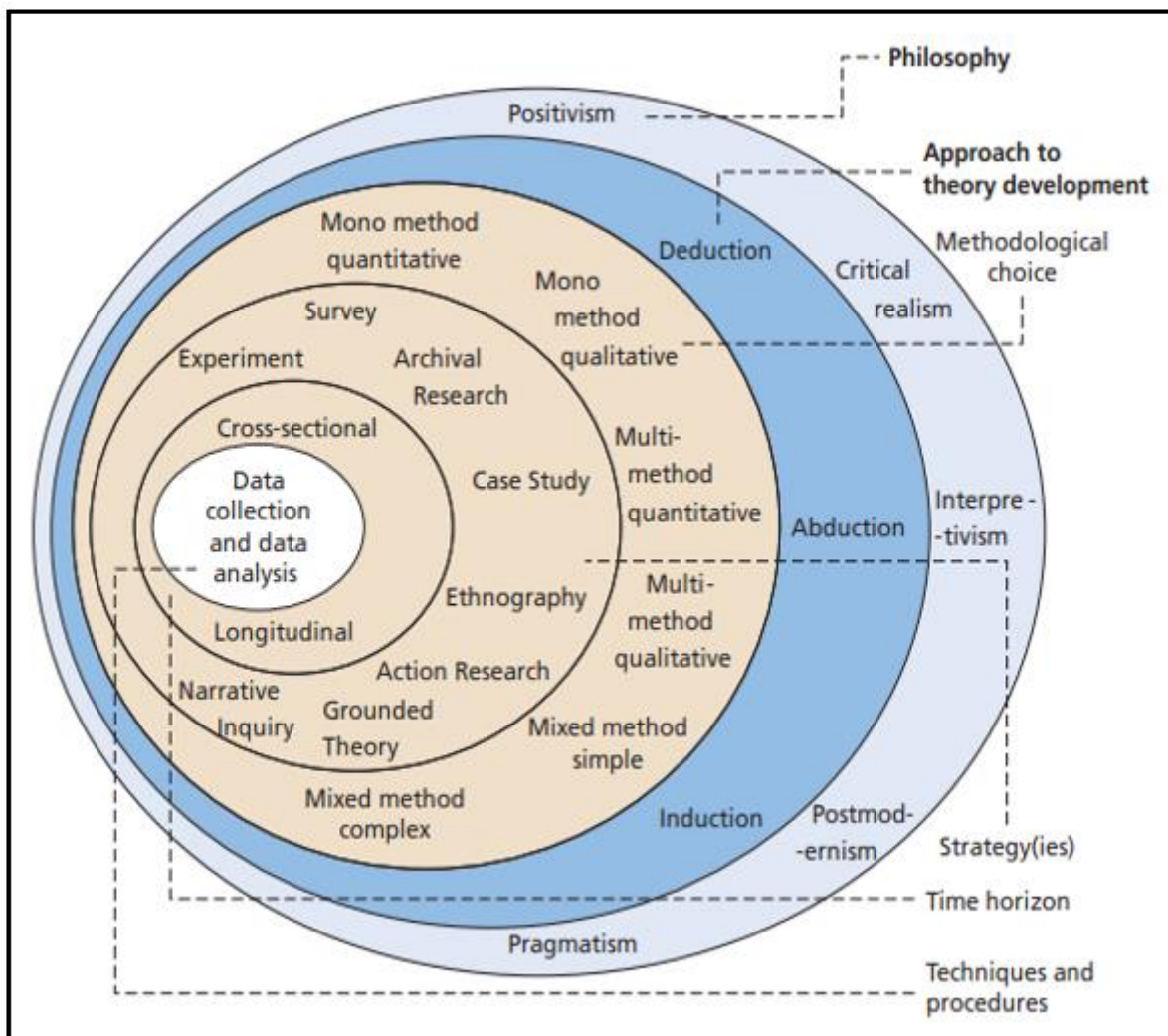
Figure 4.1:   Research onion

Source: Saunders *et al.* (2019:130)

In line with the research onion approach of Saunders *et al.* (2019:130), the researcher followed a research design, as outlined in Figure 4.2 and discussed in Section 4.5.4.
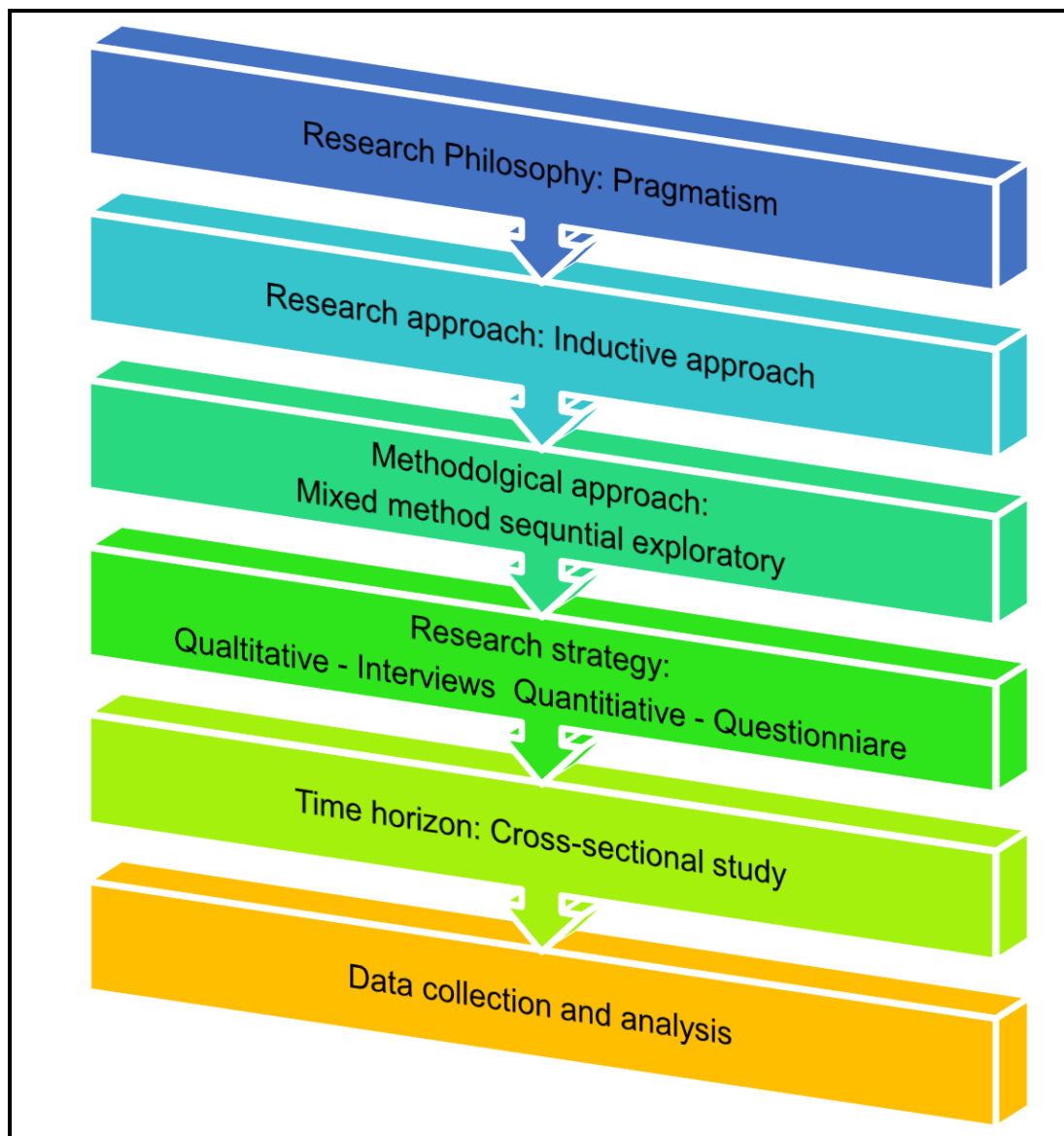
Figure 4.2:   Research design

Source: Researcher's own compilation

Phase 1 of this study followed a qualitative research approach that utilised an explorative approach to questions to collect data that could inform the DBE and management on school policy changes (Mouton, 2008:117; Patten & Newhart, 2018:22; Huber & Helm, 2020:237). The inductive approach uses testing, allowing the researcher to identify relationships and patterns in the research. Through the inductive approach, the selected target population and sample (secondary schools) could be generalised to the greater (secondary school) environment (Mouton, 2008:118; Dudovskiy, 2018a; Bhandari, 2020).

Phase 2 of the study followed a quantitative research approach that utilised inferential statistics to predict and generalise results and test the hypotheses. A cross-sectional

study was used to generate an overall picture of legislated school safety through the collection of information at a single point in time using a questionnaire (Du Plooy-Cilliers *et al.,* 2021:168). While there may be several different research approaches, not one is superior. Each approach is different and is used to satisfy the adopted approach (descriptive research approach) (Ako & Olawuyi, 2017:2636). For this study, both a descriptive and inferential research approach was followed.

Furthermore, quantitative research uses deductive reasoning and can be viewed as a 'real science' and is regarded as providing strong empirical research evidence (Bhandari, 2021a; Statistics Solutions, 2021).

An essential part of the research methodology is selecting the research strategy to ensure that the research is performed in a manner that adds value to the purpose of the study.

4.5.3 Research strategy and process

The purpose of a research strategy is to introduce the study's main elements, namely, the research topic, research problem, research design, and research methodology (Dinnen, 2014; Walia & Chetty, 2020). A research strategy is a plan of how the researcher will address the research study to answer the research objectives and/or questions. It is a plan of action for the achievement of a specific goal. It is a basic orientation and gives the researcher direction for their thoughts and efforts. It allows the researcher to conduct the study systematically to achieve quality results.

Research strategies are categorised as experiments, surveys, case studies, ethnography, action research and/or grounded theory. It uses of experimental research studies, hypotheses, and describes the interaction between the dependent and independent variables. Surveys are used in deductive research, where the qualitative data is analysed using inferential techniques. Case study research utilises an in-depth examination of a specific topic or setting. Ethnography is used in cultural and social studies, while action research is primarily conducted in organisations, where its participatory approach inspires organisational learning. Grounded theory seeks to understand and explain a culture's meaning to make sense of a given situation (Creswell, 2014:41; Saunders *et al.,* 2016:174; Salkind, 2018:20; University of Newcastle Library, 2020).

As indicated, research is a systematic process undertaken to study a specific topic and to contribute new knowledge to the field. A researcher can employ several research strategies, namely, qualitative, quantitative, descriptive, analytical, action, critical, interpretative, exploratory, or predictive.

The research design strategy followed by the study began with the development of the sample design and research instrument, namely, the questionnaire. This was followed by data preparation, data collection, data analysis and interpretation, and concluded with the research findings and recommendations. The study followed a deductive approach commonly used as a management research strategy (Esterhuyzen, 2017:198).

External secondary data was utilised to develop content construct in the research instruments that consisted of a mixture of open and closed-ended questions. The research methodology addresses the research methods, techniques, and processes by following the research onion (Figure 4.1), as outlined in Saunders *et al.* (2016:124, 2019a:130).

The study set out to determine the implementation of occupational school safety concerning the legal imperative of the OHS Act No. 85 of 1993 and SASA No. 84 of 1996. Through this approach, the safety knowledge of participants was established (Saunders *et al.,* 2019:150, 812). The study used an explorative mixed method research strategy, as summarised in Table 4.1.

Table 4.1:   Types of research strategies

Strategy	Definition	Purpose	Aim	Research method
Qualitative research strategy	A method to collect non-numerical data.	To understand the underlying reasons for not implementing safety in schools as legislated by the OHS Act No. 85 of 1993. It provides insight into the research and helps to achieve the research objectives.	An in-depth analysis (interview) of the participant's knowledge of school safety, as legislated by the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996.	Interviews through the use of an interview guide.
Quantitative research strategy	The collection of primary or secondary numerical data from the research questionnaire.	To investigate what, where, when and how of occupational safety, as legislated by the OHS Act No. 85 of 1993, is implemented in schools.	An in-depth analysis (questionnaire) of the participant's perception of school safety, as legislated by the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996.	Data collection through a questionnaire.
Exploratory research strategy	To gain insight and understanding of the problems and challenges regarding the implementation of occupational school safety. To work towards providing a solution to the research problem through the development of a school safety framework.	Exploratory research is undertaken when there is little to no earlier studies on the research topic.	To understand the depth of the problems and challenges faced by schools in the implementation of a school safety system.	Interview guide and questionnaire.

Source: Researcher's own compilation

Part of the research strategy is identifying the research process that will be followed throughout the research. A research process involves identifying, assessing, and analysing the data gathered to support the research objectives. The research process followed by the researcher is the interaction with the 'outside world', such as the research population and sample groups (Brynard, Hanekom & Brynard, 2017:10).

A research process follows several specific steps, starting with a problem to be solved and making recommendations. The research process followed in this study is outlined in the steps indicated in Figure 4.3.

1. Select a research topic

2. Develop research objectives and research questions

3. Determine the research design

4. Literature review
•Identify information type and source

5. Identify the population and sample

6. Develop research instruments
•Interview guide and questionnaire

7. Data collection
•Primary and secondary data

8. Data analysis

9. Research findings

10. Recommendations

Figure 4.3:   Research process steps

Source: Adapted from Brynard, Hanekom & Brynard. (2017:11); Esterhuyzen (2017:159)

The research process and approach of the study was aimed at investigating safety as legislated by the OHS Act No. 85 of 1993 to promote a holistic safe school environment. The next section outlines a cross-sectional time horizon. Stemming from the research strategy and research approach is the research design.

4.5.4   Research design

The research design is the strategy used to integrate different study components in a structured and logical manner. The function of a research design is to ensure that the data collected effectively addresses the research problem and research objectives. It forms the plan and theoretical framework (blueprint) for the research, collection and data analysis. In fact, the research design is the entire research process from conception of the problem through the data collection and analysis, data interpretation, and presentation of the findings and recommendations (Saunders *et al.,* 2019:4, 815). A research design has a logical arrangement that researchers follow in selecting a suitable research approach for their specific research goals and objectives (Sinthumule, 2017:107).

Research design can also be defined as the process of systematically collecting, analysing, and interpreting data (Leedy, Ormrod, & Johnson 2019:21). The research design is a research framework selected by the researcher that offers a sound scientific foundation to the research and demonstrates the researcher's understanding of existing knowledge (Ahmad, 2019; Kirshenblatt-Gimblett, 2019; Baran & Jones, 2020:27; Labaree, 2021). It is related to the research methods and techniques to collect and analyse data to answer the research objectives. It is a logical structure that is supported by the research purpose, and details the processes needed to obtain information to answer the research questions. The research design consists of the research philosophy, research strategy, target population, data collection method and instrumentation, data analysis techniques and method to ensure trustworthiness to provide justification of the data sources used (Saunders *et al.,* 2016:163, 726; Mabuda, 2017; Baran & Jones, 2020:27).

The study selected the mixed method design, as it allows for a predetermined and planned qualitative and quantitative method (Creswell & Plano Clark, 2018:53). Therefore, an appropriate research design needs to be developed pertaining to how the research will be managed.

4.5.5   Population and sampling

The study population is the total number of instances, models, patterns, or specimens that share the same characteristics and are available for the study (Creswell, 2014:204; Saunders *et al.,* 2016:274; Salkind, 2018:36). The population refers to the

group the research intends to examine, and is defined with specific characteristics such as gender, age, and occupation, and will be larger than the sample (Adams & Lawrence, 2018:112; McBride, 2021). A population can further be defined as a group of participants that the researcher intends to generalise the study results on (Salkind, 2018:185). Therefore, it is essential that the selected target population is relevant to the research topic and research questions (Devlin, 2018:312). A process to select a representative percentage of the population is referred to as sampling (Mbokane, 2009:86).

The selected population for the study is public secondary schools. South Africa has approximately 24 900 schools (primary and secondary) across nine provinces, and 86% of scholars in the education system are in public schools (DBE, 2018a; South African Market Insights, 2020; Schools4sa, 2021a). In addition, there are an estimated 6 000 high schools across South Africa, of which Gauteng has 2 606 schools across five regions, namely, the City of Tshwane, the City of Johannesburg, Ekurhuleni, Sedibeng and the West Rand, as illustrated in Figure 1.2 (Schools4sa, 2021a). With the planning and inception of the study, 60 public secondary schools were approved by the DBE for 2020 and 2021.

A sample is regarded as a portion or sub-set of the population chosen to participate in a research study (Greener & Martelli, 2015:62; Kellaghan & Lawrence, 2019:113). The sampling technique selects a group (sample) to determine characteristics linked to a larger group (population). The intent of selecting a sample (public secondary schools) from a common population (schools) is to demonstrate similar properties and characteristics between the sample and the population (Brynard, Hanekom & Brynard, 2017:57). The selection technique differs from research to research where the assumption has been that sampling is random (Brynard, Hanekom & Brynard, 2017:59). To ensure that the results obtained from the research are valid, a sample should be carefully selected to denote the population as a representative whole (McCombes, 2019:1).

Sample size is defined as the number of participants used in the study for data collection. For good estimation and calculation, a sample size should be large enough to represent population variability. As most research studies are faced with time and financial constraints, selecting the minimum sample number may not necessarily

jeopardise the study (Kumar, 2011:180; Patten & Newhart, 2018:110; Nanjundeswaraswamy & Divakar, 2021).

It has been stated that the wider the variation and characteristics of the population sample, the more uncertainty there is in the research findings. However, using a population sample with similar and uniform characteristics (homogenous), the sample size will effectively assess the research findings through the utilisation of focused interviews (Saunders *et al.,* 2016:303; Patten & Newhart, 2018:100; Crossman, 2020).

For this study a homogeneous, convenience, and purposive sample was used from a selection of public secondary schools in Gauteng. Homogenous sampling is a form of purposive sampling where each school had an equal probability of being selected using a homogeneous convenience and purposive sampling methodology (Cohen, Manion & Morrison, 2018:215; Patten & Newhart, 2018:100; McCombes, 2019).

The homogeneity (similarity) of the study was based on the shared values and experience, and sought to sample people that were similar to one another (educators) and it did not need to be mutually inclusive, meaning that the qualitative part of the research (Phase 1) could be conducted at the same time as the quantitative part of the research (Phase 2) with overlapping results (Given, 2008:353; Patten & Newhart, 2018:100).

Purposive sampling, as approved by the GDE, provides depth to this study and allows the researcher to rely on their judgment and insight when choosing participants from the target population (Cohen, Manion & Morrison, 2018:218; Alchemer, 2018; 2021). It is a non-probability sampling method that allows the researcher to use own judgement and knowledge of a known population to select participants believed to be a good source of information (Patten & Newhart, 2018:100). Purposive sampling is categorised into several types: heterogeneous, homogenous, and theoretical sampling. Purposive sampling, also known as judgement sampling, is an informative selection tool widely used in research. It is a non-random method that does not incorporate theories. As such, the researcher decides what is needed and identifies the sample accordingly by virtue of the participant's knowledge and experience (Tongco, n.d.:147). The purposive sampling method is beneficial as it uses a small homogenous sample size and should be large enough to represent population variability for good estimation and calculation.

The sample size in the study is vital as it may affect the statistical power, which similarly may influence the statistical tests of significance (Nanjundeswaraswamy & Divakar, 2021). The specific sample (secondary schools) was chosen to collect relevant and sufficient data from participants (school management and educators) for the study (Yin, 2011:88; Creswell *et al.,* 2015:178; Yin, 2015:93; Patten & Newhart, 2018:293). Therefore, data gathered from the sample group could be generalised to a more significant population (Struwig & Stead, 2016:130; Patten & Newhart, 2018:293). The participants were chosen from a selection of secondary public schools in Gauteng.

Probability sampling was derived from the researcher's target population (public secondary schools), where it draws randomly from the larger (school) population. Probability sampling is practical when making generalisations as it presumes creating representation in the wider population (Alchemer, 2018; Cohen, Manion & Morrison*,* 2018:214). A non-probability sample methodology is based on the availability and convenience of the sample population (Saunders *et al.,* 2016:713; Alchemer, 2018), namely, public secondary schools in Gauteng.

4.5.6   Time horizon

Participants in a cross-sectional study are selected based on specific variables of interest that can be observed as part of descriptive research. This type of research is useful when describing characteristics that exist in a specific population to gather preliminary data in support of further research (Cohen, Manion & Morrison*,* 2018:348; Cherry, 2019). The advantage of a cross-sectional time horizon is that it enables a researcher to compare various variables at the same time (Institute for work and health, 2015; Cohen, Manion & Morrison, 2018:349; Saunders *et al.,* 2019:212).

The time horizon applied in this study was a cross-sectional study as the intention was to determine the knowledge and implementation practices of legislated safety in schools. A. It measured the participant's responses to occupational school safety as a 'snapshot' at the same time, as opposed to a longitudinal study conducted over a prolonged period. A cross-sectional study is often used when conducting survey research. However, cross-sectional studies can also be used as part of the qualitative section of mixed method research based on interviews conducted over a short period (Saunders *et al.,* 2016:200).

4.5.7 Data saturation and triangulation

Researchers use several best practice methodologies to increase rigour and trustworthiness when conducting data collection. This includes a clear motivation related to the determination of the sample saturation with sufficient levels of participant interaction (Shetty, 2019; Johnson, Adkins & Chauvin, 2020:141). Data saturation is a yardstick towards estimating qualitative sample size and refers to saturation, which is defined as a point at which no additional data will add to the level of knowledge (Guest, 2020:1).

Samples for qualitative research are generally smaller than quantitative research, as qualitative research is concerned with meaning and not generalisations. Another aspect is that qualitative research is labour intensive, meaning a large sample size would be impractical. The qualitative sample size should ensure that sufficient data is obtained to the point of saturation where repetition does not occur (Mason, 2010:1-2; Cheah, 2020; Guest, Namey & Chen, 2020:2). It has been stated that data saturation is not linked to the sample size alone, but also how rich the quality of data given is, as well as the quantity of the data that is provided.

Furthermore, the choice of the sample size is important to ensure the best opportunity to reach data saturation (Aguboshim, 2021:181; Saunders *et al.,* 2016:297; Vasileiou, Barnett, Thorpe & Young, 2018:3). The interviewing technique allowed participants to give their opinions of the open-ended questions that helped to achieve data saturation.

Qualitative research is not based on statistical methods to ensure validity and reliability. Instead, it has strong humanistic factors based on values, beliefs, and social behaviour that cannot be quantified. Triangulation is a qualitative research method that combines multiple data sources to gain an in-depth understanding of the research phenomenon. Triangulation is also a strategy used to improve qualitative studies by using different perspectives, methods and theories that enable an understanding by considering the complexity of the study (Da Silva Santos *et al.,* 2020:656). Furthermore, it uses divergent groups of people to obtain various perspectives and to validate data captured (Fusch & Ness, 2015:1413). It has been found in qualitative interviews and homogenous sample groups that data saturation generally occurs between four to 16 participants (Saunders *et al.,* 2016:297; Vasileiou *et al.,* 2018:3).

For the purpose of this study, data triangulation for Phase 1 was done by conducting 14 interviews with participants from the selected high schools in Gauteng.

Evaluation is a method that determines accuracy and consistency through comparison with external criteria. Evaluation research is defined as a discipline and systematic inquiry for providing information that can be used in decision-making, and is aimed at determining the value of the research (Kellaghan, 2010; Saunders *et al.,* 2019:803).

Triangulation in quantitative research (Phase 2) makes use of multiple methods and data sources to develop a comprehensive understanding of the research phenomena. Triangulation is used to validate the accuracy of the research by merging information from different sources. In addition, it helps with bias that may arise from a single researcher's observation. It also helps explore and explain human behaviour through multiple methods to offer a balanced explanation (Noble & Heale, 2019:67). It can be used in both qualitative and quantitative research, as illustrated in Figure 4.6.
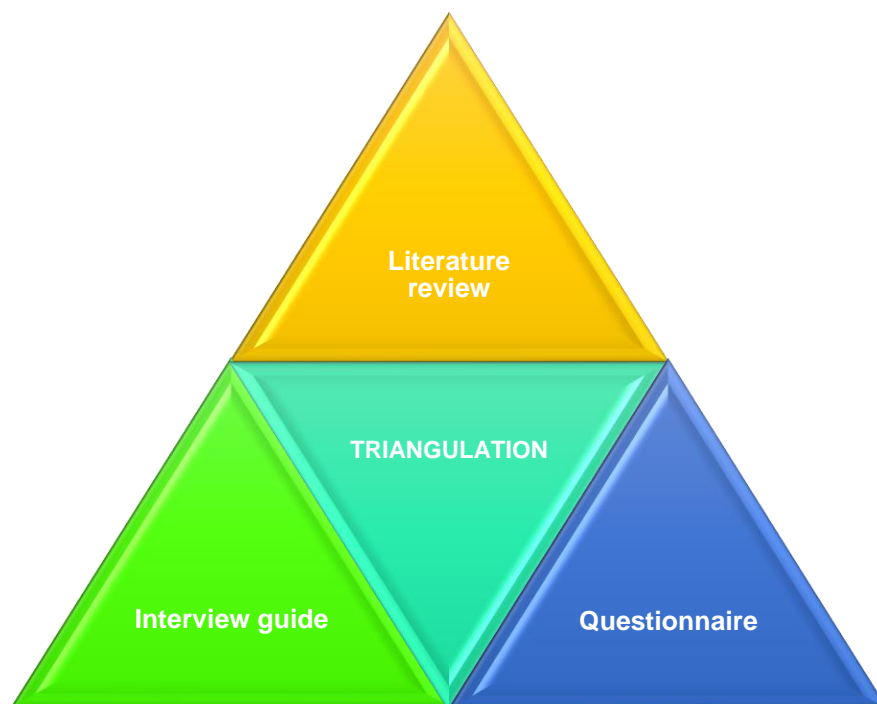
Figure 4.4:   Triangulation in research

Source: Researcher's own compilation

There are four types of triangulation, namely, data triangulation that makes use of space and time. Investigator triangulation involves multiple researchers. Theory triangulation uses more than one theory for the interpretation of a study, and methodological triangulation uses multiple methods to gather data (Noble & Heale,

2019:67). As a mixed method study, this study used methodological triangulation (interviews and questionnaires) and theory triangulation in the form of jurisprudence, management, system, and safety theories. Prior to commencing with the research, it was essential that the research environment be understood.

4.5.8   Research environment

It is essential that the researcher understands the environment in which research is being conducted, namely, the school environment. As such, the study was conducted in two phases in the actual school environment through a qualitative interview (phase 1) with the school principal, deputy head principal and/or HoDs. A research interview is a situation in which the researcher physically meets face-to-face with the selected target population, establishes a relationship, and asks specific, concise, and unambiguous questions (Saunders *et al.,* 2016:388). Where seven interviews were conducted face-to-face prior to the Covid-19 pandemic, with an additional seven conducted through email communication and personal completion by the participant of the interview guide during the Covid-19 pandemic.

The quantitative research (phase 2) used a structured questionnaire distributed directly to participants (educators) in the selected public secondary schools. As a result of Covid-19 lockdown restrictions, the researcher switched to an online method of distribution whereby online questionnaire developed on Microsoft (MS) Office forms and was email to the selected school. With the school principal's permission, the administrative office made the online questionnaire link available to educators in the schools.

However, since the Covid-19 pandemic it has been argued that the methodological strategies should combine digital and explorative research, as it may be more meaningful and significant in traditional methodologies (Dahlin, 2021). Research is about asking focused questions to obtain data. Data obtained from both the interviews and questionnaires requires storage in accordance with the POPI Act No. 04 of 2013.

4.5.9   Data storage

All data records, interview guides, recordings from the interviews, questionnaires, and electronic files will be maintained by the researcher for a period of five years in a manner as prescribed by the POPI Act No. 04 of 2013. All hard copies of completed

interview guides and questionnaires were placed in a box and security stored in the researchers' home-office. Electronic data will be stored on the researcher's Unisa laptop which is password protected in a specified OneDrive folder. In addition, the researcher emailed each chapter to a dedicated personal password protected email account as an additional backup. Furthermore, a backup is made in a dedicated folder on a password protected external hard drive. Aspects specific to qualitative and quantitative research will be discussed in the following sections, beginning with the qualitative research (Phase 1).

4.6   PHASE 1: QUALITATIVE RESEARCH

Qualitative research through interviews allows for the gathering of a wealth of information through insightful explanations and clarification of events. The main objective of qualitative research is to describe the 'how, where, what, when and why' in an attempt to understand the situation (Leung, 2015; Miles & Van Clieaf, 2017:55, 61). The scholarly debate surrounding mixed method research is that it is rooted in pragmatism; it emphasises the opposite by considering critical realism as the theoretical foundation (Mkansi & Acheampong, 2012:133). The qualitative research methodology (phase 1) adopted for the study was based on an exploratory sequential mixed method design based on interviews. It allows for a predetermined and planned qualitative and quantitative method (Creswell & Plano Clark, 2018:53). Therefore, an appropriate research design needs to be developed pertaining to how the research will be managed. The following section outlines the degree of research question and crystallisation.

4.6.1   Degree of research question and crystallisation

A research study can be viewed as being exploratory or formal, where research is not concluded until all avenues have been explored and understood (Cooper & Schindler, 2018:136; Creswell & Poth, 2018:317). As previously indicated, an exploratory research strategy with a mixed method design was selected for the current study, as few previous studies related to legislated school safety in relation to the OHS Act No. 85 of 1993 and SASA No. 84 of 1996 could be sourced. According to Saunders *et al.* (2016:174) and Baran and Jones (2020:29), an exploratory study tends towards loose structures and seeks to determine how events and occurrences actually happen

and allows the researcher to ask open-ended questions to assess how legislated safety is implemented in schools.

Open-ended questions allow participants the freedom to contribute their thoughts and opinions (Dawer, 2019). This exploratory study focused on gaining insight into the implementation of legislated safety concerning the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 within the selected research population. It allowed the researcher to move from specific testing to broader generalisations and theories (Baran & Jones, 2020:29). In some research, the population can be easily identified and counted (finite population), while in other research, the population could be unknown (infinite population) (Rafeedalie, n.d.).

4.6.2   Interview guide and interviews

This section addresses the qualitative data collection, where the development of qualitative studies related to interviews allows human subjects to be seen in relation to a social, interpersonal encounter where data can be gained through conversation (Cohen *et al.,* 2018:506). The purpose of utilising interviews may vary from evaluating the individual to testing, developing a hypothesis, collecting data, or simply sampling the respondent's opinion. Interviews may be categories where set questions are asked and recorded, and where several key aspects form the basis of the conversation (Cohen *et al.,* 2018:506).

Interviews are considered to be a more cost-effective means of obtaining qualitative data (Namey, Guest, McKenna & Chen, 2016:435). In addition, interviews assist the researcher to refine ideas where the research questions and objectives have not been fully formulated yet. Furthermore, the data collected through interviews allows the researcher to answer the research questions (Saunders *et al.,* 2016:388; Lune & Berg, 2017:65).

Interviews in qualitative research are categorised as structured, unstructured, and semi-structured. Structured interviews make use of questions that have been predetermined before conducting the interview. Unstructured interviews allow the researcher to explore phenomena through an open and flexible discussion with participants, while a semi-structured interview is found to be in the middle (Saunders *et al.,* 2016:391, Lune & Berg, 2017:67).

For the purposes of the study, interviews allowed the researcher to gain a broad insight into the management of school safety and any challenges being experienced (Leung, 2015:324; Miles & Van Clieaf, 2017:55, 61). The current study made use of a semi-structured interview guide, where open-ended questions were set under seven sections with a total of 32 open-ended questions, as outlined in Table 4.2.

Table 4.2:   Interview guide sections and number of questions per section

Section	Description	Number of questions
A	Sample detail	4
B	Occupational health and safety legislation: Knowledge	2
C	Occupational health and safety legislation: Compliance	10
D	Occupational health and safety legislation: Incidents, accidents, injuries, and first aid	8
E	Occupational health and safety legislation: Facilities	3
F	Occupational health and safety legislation: Fire safety, and fire equipment	2
G	Occupational health and safety concerns and comments	3
	TOTAL	**32**

Source: Researcher's own compilation

The interviews conducted during the qualitative phase explored the school principals', deputy head principals', and HoDs' safety knowledge. It allowed the researcher to interview participants, and thus, become aware of the process of school safety implementation. In addition, it provided the researcher with detailed qualitative data regarding participants' knowledge and understanding of school safety.

The interview guide was structured to obtain sampling information such as sample data at the beginning of the interview (Section A of the interview guide, Annexure A-1). Sections B to G of the interview guide and critical questions allowed for the distinctive categorisation of legislated school safety as demarcated in the OHS Act No. 85 of 1993, the SASA No. 84 of 1996, and the literature review Chapters 2 and 3.

4.6.2.1   *Interview guide pre-testing (exploration)*

Pre-testing allows the study to test the research instruments to measure the feasibility, validity, and reliability of the research, adequacy of the data instruments, and to identify challenges with data collection. It is an experimental process carried out before the actual application of the interview guide (Dikko, 2016:521, Schachtebeck, Groenewald & Nieuwenhuizen, 2018:7). Therefore, pre-testing may add value when

planning the more extensive research study, and forms an essential aspect when designing the data collection instrument (interview guide) (Hertzog, 2008:180; Opie & Brown, 2019:165).

The supervisors and statistician reviewed the interview guide, after which the selection of a convenience, randomised pre-test sample of three secondary schools that included three school principals and 12 HoDs (Table 1.2). The pre-test allowed the researcher to check for clarity of questions, articulation of questions, and aspects such as minor grammatical errors, and to obtain feedback on the validity, reliability, and conceptualisation of questions presented (Cohen, Manion & Morrison, 2018:496). The responses received from participants during the pre-test were used to determine content construct validity and validate user-friendliness and ease of completing the interview guide. Furthermore, pre-testing led to credibility and accountability; thus, allowing the researcher to remove any anomalies, ambiguities, and complex words that could be misunderstood (Ruel, Wagner & Gillespie, 2016:101; Schachtebeck, Groenewald & Nieuwenhuize, 2018:7). Pre-testing also allowed the researcher to critically review and scrutinise the layout and appearance of the final interview guide.

The pre-test interview lasted between 60 and 90 minutes, where the researcher asked each question critically, noting participants' comprehension of the question and relevance of the answer given. The feedback indicated that the questions were well-structured, relevant to school safety legislation, and comprehensive in that they highlighted aspects of occupational school safety that participants were not aware of. It was concluded from the pre-testing that the interview guide questions were well structured, comprehensive, clearly understood, and relevant to the study.

4.6.2.2 *Participant response rate*

The response rate relates to the percentage of participants that responded to the researcher's request for an interview. The response rate is calculated by the number of participants (14) divided by the number of schools contacted requesting an interview (60 schools contacted over the two-year period) (Devlin, 2018:282). The response rate for the qualitative study is outlined in Table 4.3.

Table 4.3:   Qualitative study: Participant response rate

	Schools contacted	Responded
2019	30	7
2020	30	7
Total	60	14
Response rate %	14 ÷ 60 x 100 = 23.3%	

Source: Researcher's own compilation

As depicted in Table 4.3, the researcher contacted 60 secondary schools in Gauteng during 2019 and 2020 by telephone or by email. However, in 2020, during the data collection phase, the global Covid-19 pandemic and the lockdown restrictions hampered data collection. Therefore, the researcher was only able to conduct five actual (physical) interviews (Pre-Covid-19), with two additional interviews conducted by two separate fieldworkers prior to the lockdowns. A total of seven face-to-face interviews were therefore conducted before the Covid-19 pandemic.

As a result of the global Covid-19 pandemic in 2020, the researcher requested the completion of interviews by email. As indicated in Table 4.4, the researcher contacted 60 secondary schools. An additional seven interviewers were obtained through email communication during the Covid-19 pandemic in 2020. In total, 14 interviews were conducted, equating to a response rate of 23.3% (Table 4.3). As indicated in Chapter 1 (Section 1.8, Figure 1.2), Gauteng is divided into five regions, and Figure 4.4 outlines the number of interviews conducted in Gauteng.
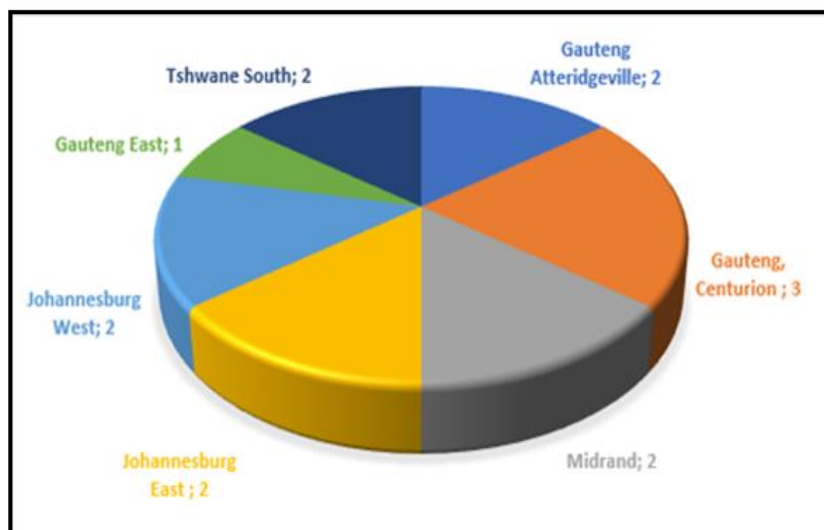
Figure 4.5:   Interviews per region

Source: Researcher's own compilation

4.6.3   Data collection

The data collection took place in a double-phase mixed method research design using both primary and secondary data. Secondary data is previously collected data from other research or publications that have already been analysed (King *et al.*, 2017:63). Saunders *et al.* (2016:727) indicated that secondary data can be further analysed in a new study to provide additional or different interpretations, findings, and conclusions.

Secondary data was more easily accessible due to today's technological environment through internet searches and access to electronic journal articles. The use of secondary data is cost-effective, as many articles are available online. Although some articles need to be purchased, the cost may be less than purchasing other resources, such as books and collecting primary data (Juneja, 2021). Secondary data also provides perspective and credibility to research as it allows for a foundation to primary data in support of previous research. Secondary data confirms the primary data by creating an additional stratum of credibility and trust (Eichberg, 2014, UCL, n.d.). When used in a literature review it may be for re-analysis, while when used during the research methodology phase, it is for reporting (Struwig & Stead, 2016:82; UCL, n.d.). A disadvantage of using secondary data is that the data may not match the specific research purpose and objectives and may not fit into the framework of the research (Saunders *et al.,* 2016:332; Juneja, 2021). In addition, there may be biasness, as secondary data is favoured by the researcher who collected the initial data (Valcheva, n.d.).

Regardless of the type of data collected, it is essential that the participants understand the study's relevance, especially when collecting primary data (Kumar, 2011:133; Juneja, 2021). Primary data is new data that is collected directly from a source. It is data that has never been used in research before (King *et al.,* 2017:63). Saunders *et al.* (2016:724) described primary data as data explicitly collected and used for the research being undertaken, and in terms of the current study, the primary data that was collected was related to school safety. The researcher used an interview guide in the qualitative phase to collect primary data in selected Gauteng schools.

Primary data was collected through semi-structured interviews. An advantage of this method is that it is a flexible method to obtain in-depth information from participants, specifically in terms of their knowledge and perception of occupational school safety.

It allowed the researcher to probe deeper into the participants' responses to obtain more information (Adams, 2015:493; Evans & Lewis, 2018; Segal, 2019:31). It is an interactive way of communicating with the participant, and as such, the researcher portrays various roles in the research process, such as the design of the interview questions, data analysis, and presentation of the data results to the academic community (Wright *et al.,* 2016:98).

The primary data collection method used for the qualitative phase (interviews) was in-depth interviews. Data collection (interviews) began in August 2019, pre-Covid-19 pandemic, after obtaining annual permission from the Department of Basic Education (DBE) through a gatekeeper's letter (Annexure D) and an ethical clearance certificate (Annexure C) from CEMS, at Unisa.

During the pre-Covid-19 pandemic phase in 2019, the researcher scheduled meetings with the participants (school principals, deputy head principals or HoDs) to explain the research study and request permission to conduct the study. Once an appointment was scheduled with a school, the researcher informed the two appointed field workers, who each conducted one face-to-face interview pre-Covid-19. In addition, the researcher conducted five face-to-face interviews, which lasted between 60 and 90 minutes before the first Covid-19 lockdown. All interviews were conducted on the school premises, in the office of the school principal, deputy head principal or HoD.

Between March and November 2020, the challenge of the global Covid-19 pandemic lockdown restrictions did not allow for face-to-face interviews as this was prohibited. Field workers could not be used for data collection during the Covid-19 restrictions. The researcher, therefore, contacted several schools via email. Devlin (2018:327) confirms that an online data collection approach has an advantage in that it is convenient, as the participant can complete the interview guide at any time at their leisure.

The introductory email explained the study's purpose and requested participation from the school principal. On acceptance of participation, the researcher emailed the interview guide and consent form to the participants, who were given 10 working days to complete and email the signed letter of consent and interview guide back to the researcher. A follow-up was made with the school after 10 days requesting the completed interview guide. If no response was received on the second email, a third

email was sent with a final request for submission of the completed interview guide. If no response was received after the third email, the researcher assumed that the school was not participating in the study. All communication during Covid-19 was conducted via email with the school. The researcher obtained seven electronic interview guides, whereby six interview guides were completed by the school principal/deputy head principal, and one was completed by a HoD as delegated by the school principal.

Overall, a total of 14 interviews were completed, seven through face-to-face interviews prior to the Covid-19 pandemic and seven via electronic (email) data collection, as illustrated in Figure 4.5.
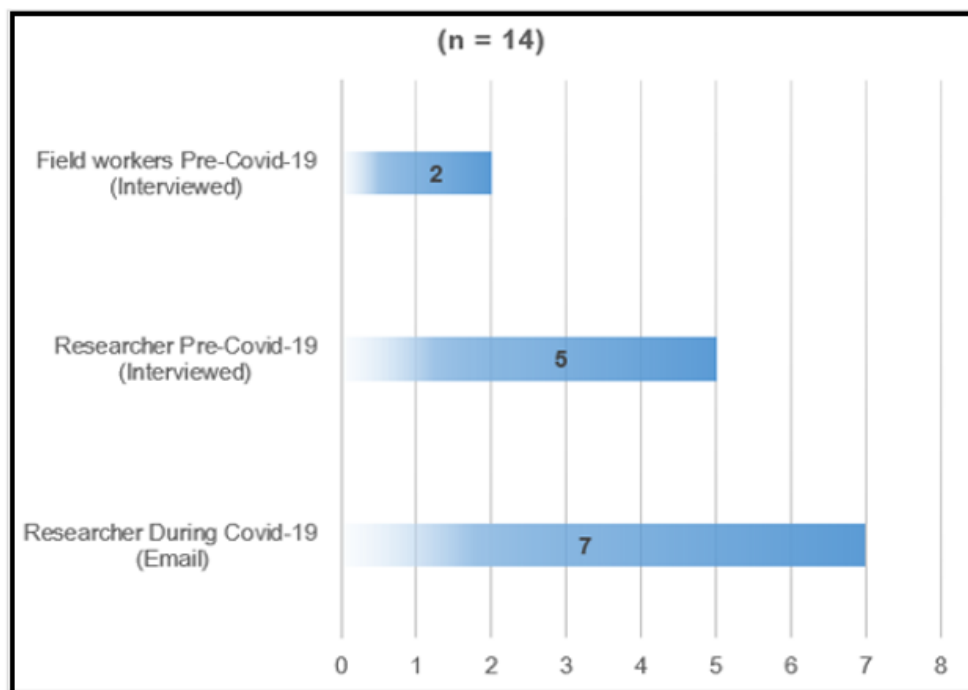
Figure 4.6:   Interviews: Data collection

Source: Researcher's own compilation

4.6.3.1 *Data preparation*

The verbatim transcription text from the interview guides was typed into a Microsoft Word document that was used to capture data in Atlas.ti version 22, a software program. With online training on Atlas.ti (Atlas.ti, 2016; 2020) and assistance from the data analyst, the researcher coded the data in Atlas.ti, after which code groups, themes, and word frequencies were identified for data analysis.

4.6.3.2 Data, content, and thematic analysis

Qualitative research is an essential paradigm of analysis that uses rigorous methodologies to create meaningful results. It is usually applied to text, such as interview transcripts, and allows the researcher to examine data to identify common themes. Data collected from the interviews was analysed in Atlas.ti using a tandem approach, where the data analyst (statistician) assisted with the interpretation of the data and served as a control to validate the codes, code groups, and themes selected by the researcher. In addition, content analysis allowed for a systematic and comprehensive examination of the data to identify patterns, themes and theories in the data linked to legislated school safety. The utilisation of content and thematic analysis allowed the researcher to exam the data to determine a detailed description of codes and themes to categorise data.

Content and thematic analysis is a systematic analysis that provides a feasible means to analyse data and determine descriptive themes (Saunders *et al.,* 2016:579; Nowell, Norris, White & Moules, 2017:1; Caulfield, 2019). Developing statistical information about each variable is a means of determining what information is valid for the study. The analytical procedures vary between nominal, ordinal, and ratio scales which are dependent upon scales used in the interview guide (Nardi, 2015:139; Opie & Brown, 2019:17). In addition, content analysis follows three stages, as follows: (1) data preparation, (2) data organisation, and (3) data reporting. Data preparation is the cleaning and transforming of the raw data collected during interviews for processing. Following this, data is catalogued in the data organisational phase to achieve an understandable outcome (Elo *et al.,* 2014; Roller, 2019).

Thematic analysis commonly follows six steps, namely: (1) familiarisation with the content, (2) coding, (3) generating themes, (4) reviewing those themes, (5) defining the themes, and (6) naming the themes (Saunders *et al.,* 2016:579; Caulfield, 2019). This entailed coding and theming data to allow for a qualitative analysis concerning word frequencies which is helpful in ensuring that data is coded effectively and is used to determine data saturation. Data saturation indicates the quality of analysis as it is evidence that no new data or codes could be generated to present new insight into the study, constitues a measure of rigour (Saunders *et al.,* 2016:279; Constantinou, Georgiou & Perdikogianni, 2017:575).

The raw data from the transcribed interviews were processed using content and thematic analysis in Atlas.ti. The construct of legislated safety as prescribed by the OHS Act No. 85 of 1993 as set out in the interview guide was applied to determine codes, themes and patterns. The theoretical method used in the thematic analysis was based on the safety and jurisprudence theory as interconnected with the OHS Act No. 85 of 1993 and the systems and management theories as interconnected with the SASA No. 84 of 1996. Content and word analysis and frequencies were used to establish the significance of themes, where thematic analysis was used to determine themes, such as compliance and procedures, and areas of neglect.

The researcher selected a pragmatic philosophy explained in Section 4.5.1, as the most suitable approach for the study (Shannon-Baker, 2016:325). Data analysis for the study will be expanded upon in Chapter 5, as well as the development of word frequencies, code groups, and a word-cloud.

4.6.3.3 Overview of Atlas.ti

Atlas.ti is a computer based statistical software package that assisted the researcher to code and analyse textual data, present data visualisation through the creation of diagrams and word clouds, and to establish frequencies. It integrates all data so that the researcher does not lose sight of the 'whole project' when going into detail. Through exploration, a systematic approach to the data was followed, allowing the researcher to become acquainted with the idiosyncrasies, peculiarities, and characteristics conducive to an explorative approach. Furthermore, the uncertainty allowed the intuitive aspect often sought in an explorative approach to assist in developing theories. Finally, the visualisation component directly supports the visual complex properties that maintain the researcher is focused on the data. At the same time, integration allowed the researcher to include text and pictorial (image) information (Archer, Jansen Van Vuuren & Van Der Walt, 2017:1; Friese, 2020:10-11).

The qualitative research was conducted in a two-phased approach. The first phase, the data-level phase, consisted of data segmentation, quotations, coding, and groups. A code is defined as a short word or phrase assigned to test segment in the data. It is a vital link between the data and the meaning of the selected text (Saldaña, 2013:3). The first phase allowed the researcher to explore the data through word frequencies and a word cloud. It entailed the universal pre-coding, coding and categorisation of

qualitative data through word frequencies and reflection of underlying perspectives of participants (Saunders *et al.,* 2016:608; Saldaña, 2021:30). Coding is an essential aspect of the analytical data process that allows a researcher to break down the data into new ideas, codes, groups, and words (Elliott, 2018:2850).

The following three types of coding was used in the study:

- Open coding which is the organising of data into categories. Open coding is further described as a method used to dissect, compare, scrutinise, conceptualise, and categorise.

- Axial coding that is a process of identifying relationships between categories and reconstructing the data to develop different categories or sub-coding in an attempt to develop a theory.

- Selective coding is the process of integrating categories to develop a theory.

Lather, Fynn and Kramer (2019:209) stated that the core categories form the pivotal theme of data to which other identified categories can be added (Lather*,* Fynn and Kramer 2019:206-208). In addition, word 'frequencies' refers to the analysis of the number of times a word occurs and is useful in determining the importance of certain words. Furthermore, it assists in assessing the nature of the qualitative data and limiting researcher bias. The second conceptual phase allowed the researcher to determine codes and groups through combining codes with variables to explore different relationships. Atlas.ti allowed for the visual joining and connection of selected codes, quotations, and memos to form a diagrammatic outline of the relationships (Friese, 2018:17, 21; 2019:12).

4.6.3.4 *Descriptive statistics*

Descriptive statistics is the most widely used type of data analysis as it describes the collected data. Descriptive analysis can commonly be found in mixed method research, where qualitative research is used with one variable (univariant analysis) to calculate frequency tables (XLSTAT, 2020). Descriptive statistics has four scales: nominal, ordinal, interval and ratio (Opie & Brown, 2019:17, 275), as described in Table 4.4.

Table 4.4:   Descriptive statistic measurement scale

	Characteristic	Example
Nominal scale	Measurement that can only be placed in a category. These categories are mutually exclusive with no numerical meaning.	Gender (male/female) Age group Socio-economic status
Ordinal scale	These measurements are ranked and meaningful. They are classified and introduce order to the data.	Often used to determine attitude and opinion such as the open-ended questions in phase 1. Rating scales, such as Likert-rating scale used in the questionnaire of phase 2.
Interval scale	A metric measurement, although unequal in distance, have limits in terms of what can be said about them. Maintains a classification of order.	Degrees of measurement, such as the ratio used to determine the number of legal appointments in phase 1 and noise in decibels (dBA) in phase 2.
Ratio scale	Measurements with an equal metric measurement. Able to draw a relationship between each set of data. Includes an absolute-zero.	Measurement such as the ratio used to determine the number of legal appointment sin phase 1.

Source: Adapted from Cohen, Manion & Morrison, (2018:275-276); Opie & Brown (2019:277-278)

As indicated, the study used an exploratory sequential mixed method research design, beginning with the qualitative research (Phase 1) through semi-structured interviews (face-to-face and email) and the quantitative research (Phase 2) through the use of a questionnaire. The next section discusses the quantitative phase of the study.

4.7   PHASE 2: QUANTITATIVE RESEARCH

Quantitative research often uses a large sample group as the objective measure of anonymity of a large number is easy to manage. Quantitative research asks more targeted questions with the hope of generalising results to a larger population, such as within a global school environment (Patten & Newhart, 2018:23).

A quantitative study can be referred to as empirical, deductive, or inductive, and exploratory research (Mkansi & Acheampong, 2012:135). Allowing the research to refine and clarify the research method, and subsequently, gather evidence through

data collection. The research philosophy also helped the researcher to avoid inappropriate and unrelated works, thereby allowing the researcher to be more creative and exploratory with the research methodology. It enabled a researcher to investigate the implementation of legislated school safety using a broader perspective. It allowed the researcher to experience and report on the meaning of occupational school safety as perceived by participants (Creswell & Poth, 2018:315).

A quantitative study can be referred to as empirical, deductive, and exploratory research where it attempts to measure something such as attitude, behaviour, or knowledge. It embraces different data and analytical approaches to conceptualise and interpret a phenomenon (Vaismoradi, Jones, Turunen & Snelgrove, 2016:100; Vaismoradi & Snelgrove, 2019:100). The objective of the study was to investigate legislated safety of the OHS Act No. 85 of 1993 to establish the nature and extent of the implementation of legislated school safety as applied by the SASA No. 84 of 1996 to promote a holistic safe school. A questionnaire was developed for the study, related to legislated safety as prescribed by the OHS Act No. 85 of 1993. The questionnaire further endeavoured to determine the participants' perception toward occupational school safety.

For the quantitative research phase, sampling was used to gain access to knowledgeable people (participants/educators) who have in-depth knowledge of school administration. It was used to achieve representative, comparison, and focus on unique aspects through data collection (Cohen, Manion & Morrison, 2018:218).

The researcher selected a fixed mixed method design that allowed for predetermined and planned quantitative research (Creswell & Plano Clark, 2018:53). The purpose of the research was to explore the gap related to the implementation of legislated safety (OHS Act No. 85 of 1993 and the SASA No. 84 of 1996) within a school environment. The advantage of quantitative research is that it can be applied to a large sample group, allowing for replication and direct comparison of results (Bhandari, 2021b). The next sections outline the quantitative research philosophy.

A quantitative research approach collects data for numerical analysis and is used to find patterns, make predictions, test relationships, and generalise results to a wider population. It is useful when addressing specific questions that have a well-defined phenomenon. Quantitative research can be used for descriptive, correlation, or

experimental research. Descriptive research seeks to summarise the study's variables and includes measures of averages such as mean, median, and mode. Correlation research investigates relationships, while experimental research determines whether there is a relationship between the variables. It can also be used to manipulate an independent variable to measure the dependent variable effect. However, it requires high-quality data to measure variables (Bhandari, 2020b).

4.7.1 Control of variables

Quantitative analysis assumes that the researcher can establish generalisable knowledge through deductive reasoning, where a variable is an element upon which the data was collected. However, control variables are often overlooked in research, which can adversely affect the internal and external validity of a study (Webb, 2018:2; Saunders *et al.,* 2019:820; Shirazi, 2020:74). To manage the variables, the research objectives and questions need to be based on the research theory. Once this is achieved, the researcher identifies what variables are expected from the study and proceeds to collect observable data (Jensen & Lauri, 2016:294).

There are several types of quantitative scales that can be used as previously outlined in Table 4.4, namely:

- Categorical or nominal scale that may have two or more characteristics, for example, male or female.

- Ordinal scale displays a clear natural order within the ordinal values, and as such, education is clearly ordered and falls within this category.

- Interval/continual scale has specified set intervals between data, such as noise levels or temperature.

- Ratio scale orders variables and determines the difference between these variables, such as the legal required number of appointed H&S representatives. It is assumed that the variable begins at zero.

Most mixed method research studies will make use of a range of these data types where specific statistical analysis will utilise certain types of variables (Jensen & Laurie, 2016:296).

4.7.2   Questionnaire

A research study uses the research design to collect and analyse data to answer the research questions and meet the research objectives. The research design should substantiate the data collection and analysis techniques chosen.

Questionnaires are the most common method of data collection and can be used synchronously (occurring at the same time) or asynchronously (does not occur at the same time) (Oschman, 2004:293; Struwig & Stead, 2016:93, 106; Creswell *et al.,* 2018:176; Opie & Brown, 2019:160). Questionnaires are shaped by the need to generalise a broad population and has an impact on the sampling and coding practice of the research (Vogt, Gardner & Haeffle, 2012:33; Creswell, 2014:42).

A structured questionnaire is designed to obtain unambiguous information and is frequently used to collect detailed and precise information to sequence circumstances or people (Welman, Kruger & Mitchell, 2005:174-175; Bryman *et al.,* 2015:190). Questionnaires are used to collect information related to people's behaviour, attitudes, opportunities, and/or to measure services and customer satisfaction (Saunders *et al.,* 2019:814). Questionnaires present a standardised and structured format to the selected target population. It allows for collecting specific data within a complex environment (McGuirk & Neill, 2016:10).

Furthermore, questionnaires have the advantages of reaching a large geographical area and a large number of the target population. They can be distributed by various means such as postal services, through online software such as SurveyMonkey.com, Microsoft Forms, email, or directly to the respondent by the researcher (Bryman *et al.,* 2015:192). The study made use of hand delivered questionnaires (pre-Covid-19) and online questionnaire (Annexure B) (during Covid-19) submitted by email and distributed by the school administration personnel to participants (educators) in the school.

Questionnaires provide the researcher with insight into the activities of the selected population's processes. It is a cost-effective, practical tool that allows for extensive research to be conducted over a wide geographical area (McGuirk & Neill, 2016:4, 10).

A disadvantage of questionnaires is the low response rates, especially with online surveys and email. The researcher has little control regarding the participants'

completion of a questionnaire (Bryman *et al.,* 2015:192). The aim of the questionnaire for this study was to determine to what extent legislated occupational safety has been implemented in selected public secondary schools and the challenges educators face in relation to school safety.

To achieve the research objectives and determine the implementation of occupational safety in schools, the study collected quantitative data through the use of a questionnaire. Sinthumule (2017:108) posited that the purpose of a questionnaire is to obtain a quantitative reality of the broader picture related to the implementation of legislated occupational school safety.

The questions may be either open-ended or closed-ended questions. Open-ended questions allow the participant the freedom to answer in their words and voice an opinion, while closed-end questions enable the participant to select from several pre-set options (Bertram & Christiansen, 2020:89). Therefore, a structured, self-completing online questionnaire (Annexure B-1) was developed that consists of nine sections with 69 close-ended questions and three open-ended questions (69+3=72).

A Likert-rating scale was used in some questions to determine educators' knowledge, competence, frequency, and opinions toward legislated occupational safety requirements. According to Saunders *et al.* (2019:523), either a five-point or seven-point rating scale can be used, using both negative and positive statements. Several types of rating scales can be used, such as the dichotomous scales that make use of yes or no answers, or category scales that use a list of responses, such as school location. A numerical scale uses numbers on a five or seven-point scale, where one could be negative and five or seven positive and more favourable. Similarly, a Likert scale is used to examine how strongly participants agree or disagree with statements on a five or seven-point scale, where one could strongly disagree and five or seven strongly agree (Sekran & Bougie, 2016:197-198). The questionnaire is discussed in more detail in Section 6.3.

4.7.2.1 *Questionnaire pre-testing*

Pre-testing (Table 1.2) of the questionnaire ensured feasibility, validity, and reliability of the research and identified challenges with data collection or completion of the questionnaire. The pre-test allowed the researcher to check for clarity of questions, articulation of questions, and aspects such as minor grammatical errors. It further

allowed for feedback on the validity and reliability (Cohen, Manion & Morrison, 2018:496).

The supervisors and statistician reviewed the questionnaire before the pre-testing took place, which allowed for exclusion and inclusion of questions for effective data analysis, clarity, and articulation of questions. Furthermore, it allowed the researcher to remove any anomalies, ambiguities and complex words that could be misunderstood. Finally, it enabled the researcher to critically review and scrutinise the layout and appearance of the final questionnaire (Schachtebeck, Groenewald & Nieuwenhuize, 2018:10).

A convenience sample was used to identify three secondary public schools for the pre-test, based on easy accessibility to the researcher. The researcher requested nine HoDs/senior educators from three school to complete a questionnaire as part of the pre-testing (Table 1.2). Owing to the impact of the Covid-19 pandemic and data collection, the pre-test study participants were included in the main study.

Feedback received from participants was that the questionnaire was comprehensive, well structured, and relevant to occupational school safety. In addition, the questionnaire highlighted aspects of occupational school safety that the participants were not aware of. After the pre-test study, the questionnaire was finalised.

4.7.2.2 *Participant response rate*

A response rate relates to the percentage of participants that responded to the researcher's request to complete the measurement instruments and is calculated by the number of participants divided by the number of requested questionnaires (Devlin, 2018:282; Shirazi, 2020:82). Pre-covid-19 30 questionnaires were handed out by the researcher and filed workers to per school. Thus, the response rate is calculated using an average of 30 questionnaires per school contacted.

The participant response rate for the qualitative study (Phase 1) was calculated at 23.3% (Table 4.3). The quantitative study (Phase 2) participant response rate was calculated with an overall school response rate of 7.47%, as outlined in Table 4.5. Thus, the approved schools did not yield positive data collection results.

Table 4.5:   Quantitative phase: Participant response rate

	Schools contacted	No Questionnaires issued	Schools responded	#Completed questionnaires received
Pre Covid-19 (2019)	30	30	7	211
During Covid-19 (2020)	30	30	7	30
Total	60	1 800	14	241
Response rate %	1 800 ÷ 241 = 7.47%			

Source: Researcher's own compilation

As depicted in Table 4.5, 60 secondary schools in Gauteng were contacted to participate in the study. Where the participant response rate (Figure 4.7) was the highest in Tshwane South (97), followed by Gauteng North, (26) Ekurhuleni North (18), Gauteng South (17), Tshwane North (16), Gauteng East (7), and Ekurhuleni South (7), as illustrated in Figure 4.7.
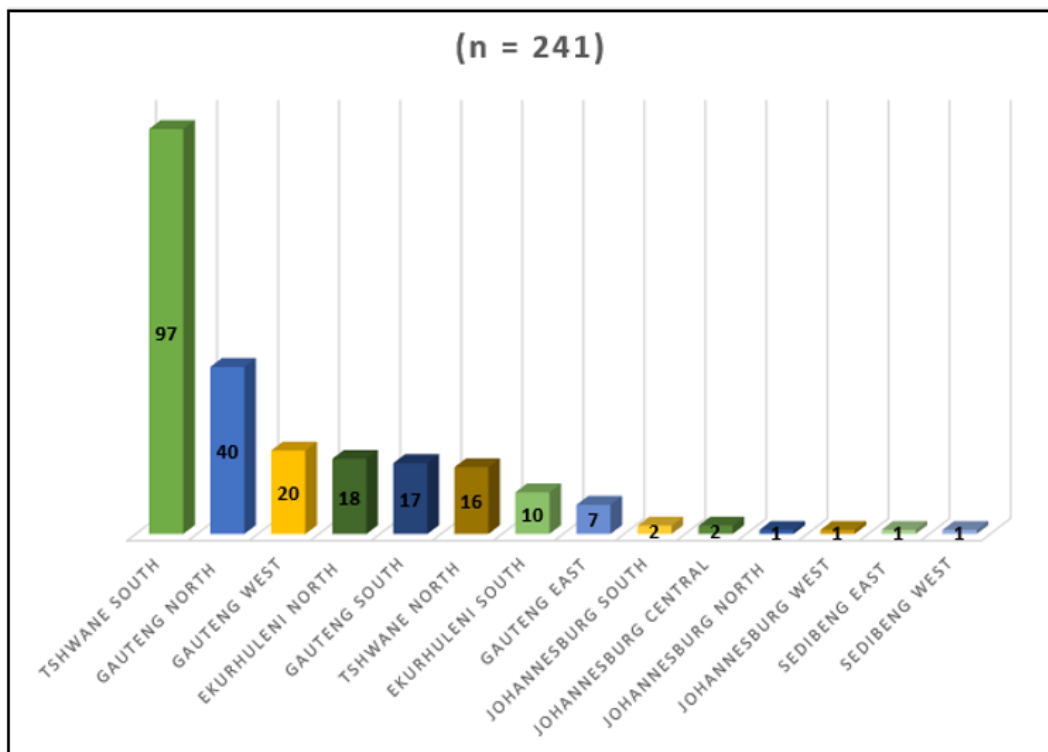
Figure 4.7:   Participant response rate per region

Source: Researcher's own compilation

The next section addresses the data collection of the quantitative phase of the study, where the primary data collection instrument was a questionnaire.

4.7.3 Data collection

The pre-Covid-19 data collection for Phase 2 (quantitative) took place from August 2019 to October 2020. During the meetings with the participants (school principals, deputy head principals or HoDs), as indicated in Section 4.6.2, the researcher explained the research study and requested permission to conduct an interview (Phase 1) and distribute questionnaires (Phase 2).

A participant pack, prepared by the researcher, comprising 30 questionnaires, inclusive of an information sheet and consent form, were left with the school principal, deputy head principal or HoD to be distributed to participants (educators) in the school. As the study was voluntary and anonymous, questionnaires were left in a dedicated area for participants to collect and complete at their discretion, as identified by the school principal (before Covid-19). Each participant was required to sign a consent form that was attached to the questionnaire. Completed questionnaires were submitted by the participant to the school administration office for safekeeping until collection by the researcher two to three days after distribution.

As a result of the Covid-19 hard lockdown (level five) (March 2020 to November 2020), the researcher was compelled to develop an online questionnaire using Microsoft Forms. Even though schools partially re-opened during Covid-19 level 4 from May 2020 (Gov.za, 2021a), school access was only allowed to educators and scholars. The Covid-19 level four that started in June 2020 also did not allow access to the school for any external persons; as such, the researcher could not have physical contact with schools to distribute questionnaires.

Once schools had re-opened (June 2020), the researcher requested assistance from the school principals via email for internal, electronic distribution to educators by supplying an online link to the Microsoft Form questionnaire. The study was voluntary and anonymous, and participants were required to tick the consent to participate in the beginning of the online questionnaire. Completion and submission of the online questionnaire was automatically uploaded on Microsoft Forms and immediately accessible to the researcher. As the researcher did not have the direct emails of the participants, no follow-up email was sent.

Before the Covid-19 lockdown the researcher and two fieldworkers were able to collect 211 questionnaires from seven schools in Gauteng (Table 4.5). An additional 30

questionnaires were collected through the online link (during Covid-19), which meant that 241 questionnaires, inclusive of the pre-test questionnaires, were collected for the study. As illustrated in Figure 4.8 the research collected 171 hand delivered questionnaires while the field works collected 25 questionnaires. During the pre-testing 15 questionnaires were collected with an additional 30 online questionnaires collected from schools during Covid-19, equalling a total of 241 questionnaires (Table 4.5).
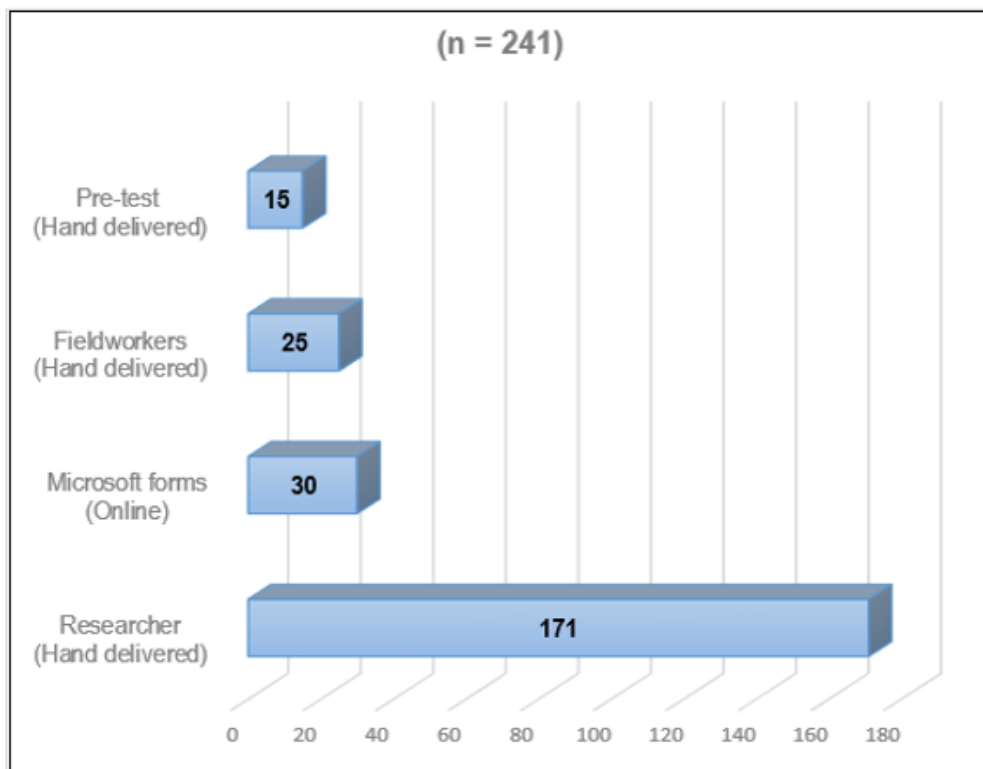
Figure 4.8:   Questionnaires: Data collection

Source: Researcher's own compilation from Microsoft Forms – questionnaire

As indicated in Section 4.7.2 the questionnaire consists of nine sections, and open and close-ended questions and open-ended questions (Annexure B-1).

4.7.3.1   Data preparation

The researcher uploaded the data collected on Microsoft Forms to ensure a unified data collection format. Microsoft Forms allowed for exporting the data into an Excel spreadsheet that the researcher used to code the data for importing into SPSS. The coding of data required the researcher to allocate a numerical value to each of the responses to enable analysis in SPSS. The Excel spreadsheet was shared with the statistician who manipulated the data in SPSS to run specific data analysis, such as cross-sectional tests.

4.7.3.2 Descriptive and inferential statistics

Phase 2 of the study made use of descriptive statistics as well as inferential statistics, which is more complex and provides a more formidable analysis. It is more explicit and used to reach a conclusion that expands beyond the immediate data (Opie & Brown, 2019:17, 275; Bhandari, 2020a). Chi-Square test of independence is a hypothesis test used to test the relationship between two variables in cross-tabulation to determine independence. Chi-Square uses one categorial variable and a specific proportion to test observable features in a study (Pallant, 2020:223). Where a cross-sectional study was used to generate an overall picture of legislated school safety through the collection of information at a single point in time using a questionnaire (Plooy-Cilliers, Davis and Bezuidenhout, 2021:168). In addition, Kendall tau-b (T_b) correlation coefficient is a measurement direction and of strength between two ordinal scale measurement variable and can be used for a small sample size (Statistics.laerd.com, 2018). Inferential statistics will be discussed in more detail in Section 6.2.2.

4.7.3.3 Data analysis and overview of the Statistical Software Package for Social Sciences

Data is a continuous process of interpreting and manipulating observed facts and information. Data is purposeful observations made during the data collection process that is recorded and stored. Furthermore, data applies to all research information and refers to any value that measures variables. However, it is essential that the researcher manages and organises data to gain knowledge value for the study (Mertens, Pugiese & Recker, 2017:1; Bergin, 2018:8).

The primary data collected from questionnaires was analysed using a computer statistical software program, known as the Statistical Software Package for Social Science (SPSS) version 28 for the quantitative data analysis. SPSS is a graphical user interface data analysis package used to manipulate, analyse and present data for research purposes (Landau & Everitt, 2006; You Tube, 2017; IBM. 2022). It provides an abundance of basic statistical functions including frequencies, bivariate (mean and correlation tests), descriptive (frequencies, cross-tabulation, and descriptive ratio), and cross-tabulation statistics. SPSS assists researchers in interpreting and develop insight from responses provided by participants on questionnaires. It also allows a researcher to create visual graphic charts for surveyed data. As such, SPSS is a formidable statistical tool used to manipulate and decode research data. The ease of

use and flexibility allows SPSS to be accessible to all skills levels and is suitable for projects of all sizes and complexity. Furthermore, SPSS supports a top-down testing approach while SPSS modeller reveals hidden patterns through a bottom-up approach (Sandiland, 2014; IBM, 2021a, 2021b). Data analysis will be discussed in more detail in Section 6.3.

The coding of transcribed data was done in tandem with the qualitative and quantitative data analyst (statistician) to ensure the validity and reliability of the data. No missing data was visible in the interview guides (Phase 1) and missing data in the questionnaires (Phase 2) was given a numerical value for data analysis. Every effort was made to ensure a transparent research process. The next section discusses the data storage of the data collected.

4.8   VALIDITY

Validity is a common term used for measurement that determines the accuracy of the research instrument, where it is used to measure the things they are supposed to be describing (Easterby-Smith, Thorpe & Jackson, 2015:885; Patten & Newhart, 2018:123). Traditionally, validity is linked to quantitative research; however, it can be linked to qualitative research as well. It is a process of accuracy, suitability, relevance and appropriateness (Kumar, 2011:165). Validity is essential for effective research and can be seen as the extent to which data interpretations are justified and correctly capture what actually happened. As such, the researcher must be certain that the measurement instruments (interview guide and questionnaire) are valid (Cohen, Manion & Morrison, 2018:245; Gibbs, 2018:128; Saunders *et al.,* 2019:218).

This study used an exploratory sequential mixed method design where Creswell and Plano Clark (2018:252) express mixed method validity in terms of validity threats and strategies to diminish the threat. Each mixed method design has its own inherent process to obtain certain inferences, and therefore, threats may differ concerning questions, sampling procedures, and the use of results. To determine validity the research instruments were reviewed by the supervisors and statisticians, and pre-tested (Section 1.8.4).

4.8.1   Validity for the qualitative study

Appropriateness is the meaning of validity in qualitative research, which means the appropriateness of the research tool, process, and data. It refers to the validity of the research questions, the choice of research methodology, and whether the anticipated outcome will be achieved. Qualitative research is focused more on validity than reliability. In addition, validity is based on the trustworthiness and accuracy of the scientific findings achieved through the qualitative study's authenticity, credibility, and dependability. In addition, qualitative validity is based on the researcher's and participant's standards (Leung, 2015:325; Cypress, 2017:254; Creswell & Plano Clark, 2018:217).

Trustworthiness is the combination of attitudes throughout the research that demonstrates credibility. It relates to the extent to which methods used in the study were applied and is reliant on the researcher's decision-making process. These decisions taken by the researcher in the study should be detailed and transparent to enable comparable data findings (Baran & Jones, 2020:93). Likewise, trustworthiness relates to the transferability and conformability of the research (Noble & Smith, 2015:34; Korstjens & Moser, 2018:121). The researcher ensured trustworthiness through transparent and clear communication during the interviews with participants.

Authenticity is an essential aspect of qualitative research and can be viewed in the novelty of the research, the credibility, validity, and reproducibility of further research. It involves confirming a balanced and fair account of the participant's experience, knowledge, and perception of the study. Authenticity in a qualitative study involves an 'inside view' of the participant's world; meaning, it is a comprehensive account (Barnard, 2020:107, Editage insights, 2021) of how the participants understood the safety legislation concerning actual safety of the school environment. Authenticity of the study was maintained through the verbatim transcription of participant responses.

Credibility in qualitative research is mainly used in interpretive research and relates to how the data and findings are accurately reflected in the study. To establish credibility, the study was conducted through good academic practices inclusive of an ethical approach (Bryman *et al.,* 2017:44; Korstjens & Moser, 2018:121). Before conducting the interviews, the researcher explained the purpose of the study, the process to be followed, confirmed the DBE's approval of the study, and Unisa ethical clearance

approval. During interviews conducted by the researcher prior to Covid-19, the responses from participants were confirmed through repetition of the transcribed information or an additional probing question. This action was, however, not possible with the online emailed interviews.

The dependability of the study involves the consistency of the research findings. It assesses the quality of the integrated research process of data collection, analysis, and theory generation. It enables the researcher to better understand the research setting and relates to the consistency of data (Korstjens & Moser, 2018:121; Barnard, 2020:106; Devault, 2019). The researcher transcribed interview responses onto Atlas.ti and SPSS for data analysis. This electronic data was stored and password-protected on the researcher's laptop and Unisa's OneDrive link.

A means of ensuring validity is through limiting bias which can affect the data, where researcher bias in qualitative research may include the researcher's attitude and opinion. Another act of bias may include the tendency of the researcher to seek answers that would support the researcher's theory (Cohen, Manion & Morrison, 2018:272). To avoid bias, the supervisors and statisticians reviewed the interview guide prior to data collection where questions were grouped under specific categories. The responses to questions were transcribed in Atlas.ti as dictated by participants. Furthermore, the researcher managed bias in the study through the assistance of the statistician (data analyst) during the coding and analysis process.

4.8.2   Validity of the quantitative study

Questionnaire validity can be viewed from different perspectives, such as assessing the accuracy and honesty of the participant when completing the questionnaire. The study used construct validity, which implied that the measuring instrument (questionnaire) measured the concepts and paradigms of the intended study. Furthermore, construct validity validates the use of multiple data sources. In contrast, construct validity measures whether a group of questions can measure the presence of constructs. In addition, construct validity used in this study measured the application and implementation of safety legislation in selected Gauteng schools (Cohen, Manion & Morrison, 2018:277; Opie & Brown, 2019:105; Saunders *et al.,* 2019:517).

In addition, internal validity was used to identify whether the study quantified the relationship between the SASA No. 84 of 1996 and the legislative requirements of the

OHS Act No. 85 of 1993. External validity was used to determine whether the study could be generalised across all schools (Sekran & Bougie, 2016:149). In relation to the quantitative validity, the values obtained in the SPSS data analysis are meaningful indicators of validity and will be expanded on in Chapter 5. According to Creswell and Plano Clark (2018:217), more focus is placed on validity in mixed method than reliability.

4.9   RELIABILITY

Reliability is essential to consider as a means of determining whether the research instruments gave reliable and consistent results across a range of situations (Opie & Brown, 2019:103). Reliability aims to achieve transparency and at the same consistent results, regardless of where the test is conducted (Greener & Martelli, 2015:44). Reliability is stated as the replication and consistency of previous research conducted to achieve the same results and findings, meaning the research conducted is considered reliable across repeated investigations (Gibbs, 2018:128; Saunders *et al.,* 2019:231). The inclusion of qualitative and quantitative data may allow for greater reliability and drawing inferences from the study (Cohen, Manion & Morrison*,* 2018:43).

Internal reliability is concerned with ensuring consistency and research quality. In comparison, external reliability refers to data collection techniques and the analysis process to ensure consistent results. It is concerned with the questions and whether the study can be generalised to other school environments (Cohen, Manion & Morrison*,* 2018:43; Saunders *et al.,* 2019:215).

Saunders *et al.* (2019:215) outline several threats to reliability, such as participant error and bias as well as researcher error and bias. Participant error relates to any factor that could adversely change a participant's performance, such as completing the questionnaire within a specific time period (three days) compared to the electronic questionnaire that allowed participants to complete the questionnaire over a more extended period. On the other hand, participant bias would relate to any factor that allowed for an untrue response, such as providing answers to questions for the sake of answering, regardless of whether it is true or not (Saunders *et al.,* 2019:215).

Researcher error is any factor that could alter the researcher's interpretation, such as a researcher that is not prepared for the answers and meaning given in the research instrument. The term 'research bias' refers to factors that could induce research prejudice, unfairness, and favouritism (Saunders *et al.,* 2019:215). To determine reliability the research instruments were reviewed by the supervisors and statisticians and a pre-tested conducted (Section 1.8.4).

4.9.1 Reliability for the qualitative study

Reliability refers to the expectation that the researcher will find similar results. It is the degree to which consistent results can be provided in a study and to what extent it is error free. In qualitative research it is essential to pay detailed attention to the reliability of research studies, as the researcher's subjectivity can easily cloud the interpretation of the data. Qualitative research can be viewed as a journey of discovery and exploration, where the scientific aspect of reliability assumes repetition through the use of objective measures to establish truthful and accurate findings (Cooper & Schindler, 2018:368; Saunders *et al.,* 2019:518).

The replication of qualitative data may include repeating the choice of participant and information, analytical constructs and the premise that was used as well as the method of data collection and analysis. Cohen, Manion & Morrison (2018:270) further argue that replication in qualitative studies can be addressed through stability of observation and interpretation. The use of parallel data collection used in this study (interview guide and questionnaire) and inter-rater reliability allows other researchers to observe the same theoretical framework (Cohen, Manion & Morrison*,* 2018:270). Reliability is seen as a measure of consistency. A measurement instrument is regarded as reliable when it generates similar data from similar participants over a similar sample or time. (Cohen, Manion & Morrison*,* 2018:270; Saunders *et al.,* 2019:517). To test reliability in the qualitative study (Phase 1) the results were compared with the results of the quantitative study (Phase 2) through the exploratory sequential design.

4.9.2 Reliability of the quantitative study

When reliability is used in a quantitative study, reliability tests whether the measuring instrument (questionnaire) measures what it is intended to measure, allowing for an exact statistical extrapolation. It is an estimation of the extent to which a measure

agrees with the phenomenon being measure. This is achieved by comparing scores of one or more variables from similar measurement instruments used to test the same variables (Cohen, Manion & Morrison, 2018:282; Saunders *et al.,* 2019:517).

An advantage of a questionnaire is the fact that it is anonymous and allows for more honest and truthful answers, meaning it tends to be more reliable. A disadvantage on the other hand is the low response of return and the inability to ask questions. Furthermore, as humans, our behaviours and interactions are not static and vary from situation to situation. This means that participants may view questions differently (Cypress, 2017:254; Cohen, Manion & Morrison*,* 2018:278). Through the exploratory sequential mixed method design, the quantitative results were compared with the qualitative results. This implies that the measurement instruments allow for replication (re-use) in similar studies.

4.10 LIMITATIONS OF THE STUDY

Limitations are unfortunate and unanticipated events that occur during a study that has the potential to have a negative impact on the research findings (Alexander, 2020:13). Even though the current study made every effort to meet the required criteria of scientific-validated research, there were some limitations that affected the application of the research findings. Several delimitations and limitations were presented in Chapter 1 (Section 1.10). Chapter 1 listed the delimitations and limitations of the study. The following additional limitation related to Covid-19 needs to be mentioned.

4.10.1 Covid-19

The data collection phase started in August 2019 and was halted due to the impact of Covid-19 in March 2020 and the global level five lock-down (26 March 2019-30 April 2022) (Gov.za, 2022a). This impeded the qualitative phase as interviews could not be conducted with school principals. Likewise, as a result of the lock-down, questionnaires (quantitative phase) could not be distributed to educators as schools were closed. This led to the development of an online interview guide and questionnaire that were emailed to participants when schools partially reopened in a quest to collect data this time. This added to the limitations as it restricted the researcher from delving deeper into responses. When schools re-opened on level four,

school access was prohibited, thereby not allowing the researcher access to conduct interviews. During the onset of Covid-19 social media platforms such as MS teams and Zoom were not available to many of the participating schools. Schools only gained access to MS teams and Zoom platforms later in the course of Covid-19. Thus, in a quest to obtain data during Covid-19, the researcher approached participating schools (during level four) via email to complete an electronic interview guide and online questionnaires in their own time. As a result, a limited sample population of 14 interviews and 241 questionnaires applied to the study.

4.11 ETHICAL CONSIDERATIONS

Ethics is a standard of behaviour that guides the researcher's conduct concerning the rights of the participants in the study. It is concerned with what is right and wrong, good and bad. Research ethics is a method, procedure or perspective regarding how to act when analysing complex research problems. Ethical standards have advanced into the standards used by many organisations and institutions today (Flick, 2018:37) and the concept is also known as the "moral philosophy." It is a code of moral principles and values of human behaviour. It focuses on the disciplines that study research standards of conduct and is concerned with what the researcher should or should not do (King *et al.,* 2017:247; Cohen, Manion & Morrison*,* 2018:111; Saunders *et al.,* 2019:252; Resnik, 2020).

Ethical concerns may emerge during any research and data collection, from inception through to the final stages of the study. Ethical research is identified in line with the academic institution's discipline-specific codes and principles that have been established (Carpenter, 2018:39; Creswell & Poth, 2018:54; Baran & Jones, 2020:252). Saunders *et al.* (2019:257-259) categorised several principles relevant to the study, as outlined in Table 4.6.

The implication of research has an ethical duty to establish research quality and as such, inadequately designed and implemented research is a breach of ethics. Research ethics is not only about treating people in an ethical manner, but includes an obligation to develop and ask worthwhile questions. It also relates to developing, testing, and defending valid factual knowledge to make a significant contribution to research and the body of knowledge. Ethics in education research is not only about the study and the participants but includes participants that may be indirectly involved,

such as scholars and parents (Cohen, Manion & Morrison, 2018:212). In addition, several ethical considerations should be given before beginning with data collection as outlined in Table 4.6. An important consideration is to ensure the privacy of the participant in line with the POPI Act No. 4 of 2013 to ensure that no participant's personal information is shared or published (South Africa, 2013; King *et al.,* 2017:259-263).

Table 4.6:   Ethical considerations

Ethical principle	Ethical rationale and development of each principle
Integrity, fairness, objectivity, and open-mindedness	The research was based on the integrity, fairness, and objectivity of the researcher to support quality. As such, the researcher was open and truthful with participants and promoted accurate facts.
Respect	The research aimed to develop trust and respect with the participants.
Avoidance of harm (non-maleficence)	The study did no harm to participants, including aspects of violating anonymity, confidentiality, discomfort, stress, embarrassment, harassment, discrimination and/or pain.
Privacy	Privacy was a fundamental principle of the current study, and the privacy of participants was upheld at all times. Privacy links to the next principle of voluntary participation, obtaining informed consent, ensuring confidentiality and anonymity.
Voluntary participation and right to withdraw	Participation was voluntary and participants were not harassed or forced to participate. Participants had the right to withdraw from the study during data collection (interviews and questionnaires).
Informed consent	Informed consent was obtained from each participant to ensure that they understood the implication of participating in the study. Informed consent was therefore a means of ensuring voluntary participation.
Confidentiality of data	During the interviews, participants were ensured of confidentiality and no personal information was visible on the interview guide. Interviews conducted by the researcher and field workers were uniquely numbered, and no personal data was requested. Emailed interview guides obtained during Covid-19 were received from an administrative school email. The questionnaires collected by the researcher and field workers contained no personal details. Each questionnaire was given a unique number when uploaded onto Microsoft Forms. The electronic questionnaires were received on Microsoft Forms and no personal information was requested. Each questionnaire was given a unique number on Microsoft Forms.
Responsibility of data analysis and research findings	Anonymity, confidentially and privacy was maintained during data analysis as each interview guide and questionnaire was uniquely numbered when entered into the electronic software packages of Atlas.ti and SPSS. No personal information was required in either the interview guide or the questionnaire.

Ethical principle	Ethical rationale and development of each principle
Data management compliance	As required by the POPI Act No. 4 of 2013, no personal data was requested in either the interview guide or the questionnaire.
Safety of the researcher and field workers	The safety and security risks to the researcher and field workers were considered.
	Two field workers were selected by the researcher based on their safety employment history, knowledge, and activities. Each fieldworker was given an overview of the research study by the researcher and was required to sign a confidentiality agreement.

Source: Adapted from Saunders *et al.* (2016:242); Saunders *et al.* (2019:257-258)

This research considered the ethical principles and potential implications of harm to the participants (direct and indirect). It is the norm to apply for ethical clearance for all research to ensure that research is conducted responsibly and ethically, especially where research could be used in decision-making, for instance, by the Department of Basic Education (DBE). Ethical principles also help to ensure the acceptability and authenticity of research findings (Drisko & Maschi, 2016:29; Cohen, Manion & Morrison*,* 2018:121; Hanekom, 2018).

The researcher applied for ethical clearance from the College of Economic Management Sciences (CEMS) at UNISA. The ethics application was approved on 4 September 2019 (Annexure D-1), where the research study was categorised as a low-risk study. Due to the Covid-19 pandemic, changes to the ethics policy and data collection, the researcher applied for an amendment to the ethics approval of 2019. An amended ethics clearance certificate was received on 20 July 2021. Both documents are attached as Annexure D-2.

In addition, the researcher followed the UNISA Code of Ethics and Conduct Policy of 2007 and the Unisa Policy on Research Ethics of 2016 (Unisa, 2007:1-2; Unisa, 2016:2), where the ethical values of respect, integrity, accountability, and excellence was followed (Table 4.6). The principles of ethics were adhered to that addressed participants' independence, dignity, and right throughout the study. The principle non-maleficence related to no harm being caused to the participants where participation was voluntary, and all information was kept confidential in relation to the POPI Act (POPIA) No. 04 of 2013.

Furthermore, annual written permission was obtained from the DBE to ensure ethical research. The researcher applied annually during 2019 and 2020 through a gatekeeper's letter (Annexure C-1 and C-2) for permission from the DBE to collect data from secondary schools in Gauteng.

Additionally, ethical conduct requires informed consent from participants prior to data collection (Drisko & Maschi, 2016:30; Cohen, Manion & Morrison, 2018:471). As human participants were utilised in the study a signed informed consent form was required from each participant. Additional to signing the consent form, each participant was given an information sheet that explained the research study and provided the contact details of the researcher and supervisors. The ethical dimension concerns the interpersonal interaction between the researcher and the participant to obtain information signed consent (Cohen, Manion & Morrison, 2018:540). As indicated pre-Covid-19 face-to-face interviews were in the office of the school principal where written consent was obtained by the researcher and field workers, respectively. To ensure additional integrity, trustworthiness, ethical control, and avoidance of plagiarism, the researcher used a web-based plagiarism tool (Turn-it-in) as prescribed by Unisa to ensure the originality of the thesis.

4.12 CONCLUSION

A mixed method approach was selected as the combination of the qualitative (interview) and quantitative (questionnaire) research was adopted to strengthen the research methodology, to obtain value-added research information through the use of statistical information (data) and participants' personal views. The purpose of applying an exploratory sequential mixed method research design was to identify the safety characteristics, as legislated by the OHS Act No. 85 of 1993 with the intent of promoting a safe school environment in public secondary schools in Gauteng.

This chapter commenced with a summary of the problem statement, hypotheses and research questions, and research objectives, followed by a generic discussion of qualitative and quantitative research, that discussed the research philosophy and paradigms, research approach and methodological choice. The chapter continues with the research strategy, process and research design. It indicated the population and sample of the study, the time horizon, data saturation and triangulation followed by the

research environment before branching out into a discussion of the two phases of the research.

Phase 1 (qualitative) discussed the degree of research and crystallisation, the interview guide and interviews followed by a discussion on data collection and data preparation. The chapter continued with the data, content and thematic analysis giving and overview of Atlas.ti used in the study and concluded Phase 1 with descriptive statistics, as outlined in Table 4.4.

Phase 2 (quantitative) began with a discussion on the control variables followed by the questionnaire, pre-testing, and participant response rate. It outlines the data collection and data preparation for the qualitative research. In addition, this section discusses the descriptive and inferential statistics for the quantitative research.

The chapter provided a general exploration of validity and reliability for each of the two phases. An additional ethical consideration related to Covid-19 is added, with a final discussion on the ethical considerations that guided the research process. The next chapter will present the qualitative data analysis and research findings for Phase 1 (qualitative interviews).

CHAPTER 5:
PHASE 1: QUALITATIVE DATA ANALYSIS AND RESULTS

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CHAPTER 5. OVERVIEW

  ┌─ INTRODUCTION
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  ├─ PHASE 1: QUALITATIVE DATA
  │
  ├─ Thematic and descriptive research analysis
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  ├─ Word analysis and word frequency
  │
  └─ Code analysis, saturation and networks
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- Section A: Sample detail
- Section B: OHS legislation: Knowledge
- Section C: OHS legislation: Compliance
- Section D: OHS legislation: Incidents, accidents, injuries, and first aid
- Section E: OHS legislation: Facililties
- Section F: OHS legislation: Fire safety and fire equipment
- Section G: SASA no. 84 of 1996
- Section H: OHS Comments and concerns

5.1 INTRODUCTION

The previous chapter (Chapter 4), outlined the research methodology for the exploratory sequential mixed method study. The study set out to determine the degree to which safety, as legislated by the OHS Act No. 85 of 1993, was implemented in selected schools. The study's primary objective was to explore the legal imperative of the OHS Act No. 85 of 1993 to determine the nature and extend of implemented school safety. The secondary objectives of the study were to identify safety risks, practices, and reasons/challenges why legislated safety had not been implemented in public secondary schools in Gauteng. These secondary objectives support the legal imperative and also address the spirit of the law (the aim of the law when it was written) and not only the letter of the law.

This chapter presents a discussion on the qualitative data analysis (Phase 1) to dissect and scrutinise the data to answer the research questions and research objectives. Phase 1 commences with an outline of the research sample data (Section 5.2.1) namely, school location, number of educators and learners and participants' post level. Thereafter, the chapter continues to discuss the outcomes and explores the responses to questions presented in the interview guide (Phase 1) under each grouping. The chapter contains a discussion on qualitative research approach outlining the descriptive and thematic research analysis, word analysis and word frequency as part of the qualitative research. In addition, it examines code analysis, data saturation and discusses code lists, code groups, and word clouds. The order of the data presentation is consistent with the exploratory sequential approach of qualitative data (Creswell, 2014:621; Saunders *et al.,* 2019:581, 645).

The study was conducted in two phases beginning with the Phase 1 (qualitative interviews) that explored the responses to questions from the interview guide which is consistent with an exploratory sequential design. The qualitative research (Phase 1) will be followed by the quantitative research (Phase 2).

The qualitative approach driving the thematic research analysis is discussed. The researcher provides the interpretive stages from participant source data-to-code-to-theme analysis as supported by the conventions of thematic analysis (citation/s) and as integrated by Atlas.ti (Friese, Soratto & Pires, 2018:8; Friese, 2020).

5.2 PHASE 1: QUALITATIVE RESEARCH

This section presents the descriptive statistics of the interview guide and highlights the data collected from senior school management participants using an interview guide process which is the qualitative method followed for this study. A table and narrative (Table 5.1) highlights the sections of the interview guide versus the number of questions per section and Table 4.3 indicates the participant response rate. In addition, Table 4.3 outlines the response rate to the qualitative study.

The researcher used semi-structured interviews, and 32 questions were developed across seven sections of the interview guide. In fulfilment of the research objectives, the interview questions were based on, and adapted from, the OHS Act No. 85 of 1993 legislative prescripts. In alignment with mixed methods, the researcher also covered potential domains of investigation in the questions so as to anticipate fields for the quantitatively anchored questionnaire. The interview guide was designed to probe for knowledge, compliance with legislative principles, gauge opinion, and included open-ended questions to prompt further discussion. The intention of open-end questions is to invoke critical questions, themes, and theories. Open-ended questions are less structured and are time-consuming and run the risk of a low response rate or may result in the collection of irrelevant data. However, they have the potential to produce a more in-depth response with rich qualitative data (Alvesson, 2011:53; McGuirk & Neill, 2016:11; Dawer, 2019; Saunders *et al.,* 2019:437). These open-ended questions were answered in relation to the interpretation made by the participant allowing the researcher to understand the participants' responsibility as prescribed in section 8 of the OHS Act No. 85 of 1993. Closed-ended questions related to the sample data (Section 5.2.1) were included as Section A of the interview guide. The interview guide is outlined in Table 5.1.

Table 5.1:   Interview guide outline

Section	Description	Question No.	Background information
Section A	Sampling data	1 - 4	Sample data (Section 5.2.1) related to school location, number of staff members employed versus the number of scholars in the schools and participant's rank/post level in the school.
Section B	Occupational health and safety legislation: Knowledge	5 - 6	This section is related to the knowledge of the school principal, deputy head principals and Head of Departments (HoDs) pertaining to the legislated OHS Act No. 85 of 1993.
Section C	Occupational health and safety legislation: Compliance	7 - 16	This section is related to the legislative compliance of the OHS Act No. 85 of 1993 regarding: ▪ H&S policy ▪ H&S representatives ▪ H&S committees ▪ H&S inspections ▪ Hazards and risks
Section D	Occupational health and safety legislation: Incidents, accidents, injuries, and first aid	17 - 24	This section is related to the legislative compliance to the OHS Act No. 85 of 1993: ▪ Incident, accident and injury investigations and reporting ▪ First aid compliance
Section E	Occupational health and safety legislation: Facilities	25 - 27	This section is related to the legislative compliance to the facilities' regulations linked to the OHS Act No. 85 of 1993.
Section F	Occupational health and safety legislation: Fire safety and fire equipment	28 - 29	This section is related to the legislative compliance to the safety aspects linked to the OHS Act No. 85 of 1993 in relation to fire safety and fire equipment, and the appointment of fire representatives.
Section G	Occupational health and safety legislation: Concerns and comments	30 - 32	This section allowed participants to add any additional safety concerns not addressed in the interview. In addition, the section enquired from participants whether there were any aspects related to school safety that they would like to bring to the attention of the GDE. The final question concluded with any final remarks or questions for the researcher to consider.

Source: Researcher's own compilation

The interview questions allowed for opinions and the personal interpretation of the participant's understanding and knowledge concerning school safety. All the questions were mandatory with the exception of the last three questions (Section G) that allowed the participants to express their safety concerns and remarks related to school safety. In addition, preliminary exploration (pre-test) (Section 4.7.2.1) (Phase 1) was conducted to test the trustworthiness of the interview guide. Annexure A-2 presents a summary/comparison of the objectives of the study.

The interviews provided the data sources which the researcher interpreted. The researcher used a six-step model for thematic analysis, which begins with familiarisation of the data in the interview guide. This is followed by coding, creating themes, reviewing themes, defining themes, and the writing up of the report (Braun & Clarke, 2006:87).

The first step of thematic analysis allowed the researcher to immerse herself in the data through the reading of the transcripts and converting the interview guide to an electronic Word format for utilisation in Atlas.ti. This allowed the researcher to identify initial codes (step 2 and step 3) and to search for themes.

Through the transcribed data, and with the assistance of the data analyst, initial code groups and themes emerged from the transcribed data in Atlas.ti. In the next phase, the researcher reviewed (step 4) the initial themes and selected the final themes (step 5) to be used in the data analysis (step 6) (Maguire & Delahunt, 2017:3354). Table 5.2 includes a summary of the themes and code groups that were used in the data analysis process.

Table 5.2:   Themes and code groups

	Theme description	Code group	Link to school safety management framework
Theme 1	Legislative and policy compliance gap	▪ OHS specific codes related to the OHS Act No. 85 of 1993 requirements ▪ Gap in policies and standard operating procedures (SOPs) ▪ Area requiring specialised expertise	▪ Strategic safety plan ▪ Safety audits
Theme 2	Safety knowledge and awareness	▪ Participants of safety knowledge and expertise ▪ Lack of leadership	▪ Leadership
Theme 3	Lack of a holistic, proactive school system	▪ Strategic areas ▪ Lack of accountability and responsibility ▪ Lack of a systems approach ▪ Silo approach followed	▪ Strategic safety plan ▪ School system safety management plan (SSSMP) ▪ Safety audits
Theme 4	Areas of neglect	▪ Safety hazards and dangers ▪ Crises management ▪ Lack of safety training	▪ School safety hazard identification and risk assessment ▪ School stakeholder satisfaction (SSS) ▪ Safety audits
Theme 5	Psycho-social areas	▪ Bullying and violence ▪ Discipline ▪ Feeling overwhelmed	▪ Leadership ▪ Safety audits

Source: Researcher's own compilation

The data analysis of each section of the interview guide will be presented in the next section.

5.2.1   Section A: Sample data

Section A of the interview guide asked four descriptive statistical questions related to school location, number of staff members employed by the school, number of scholars in the school, and the rank/post level of participants. The data collected from this section allowed the researcher to review the legal imperatives of the OHS Act No. 85 of 1993. A purposive sample of 14 public secondary schools was used.

In Section A of the interview guide, question 1 was related to the location of the school. As noted in Figure 5.1, interviews were conducted in Tshwane North (65%), Johannesburg West (14%), Ekurhuleni North (7%), Gauteng East (7%), and Johannesburg East (7%).
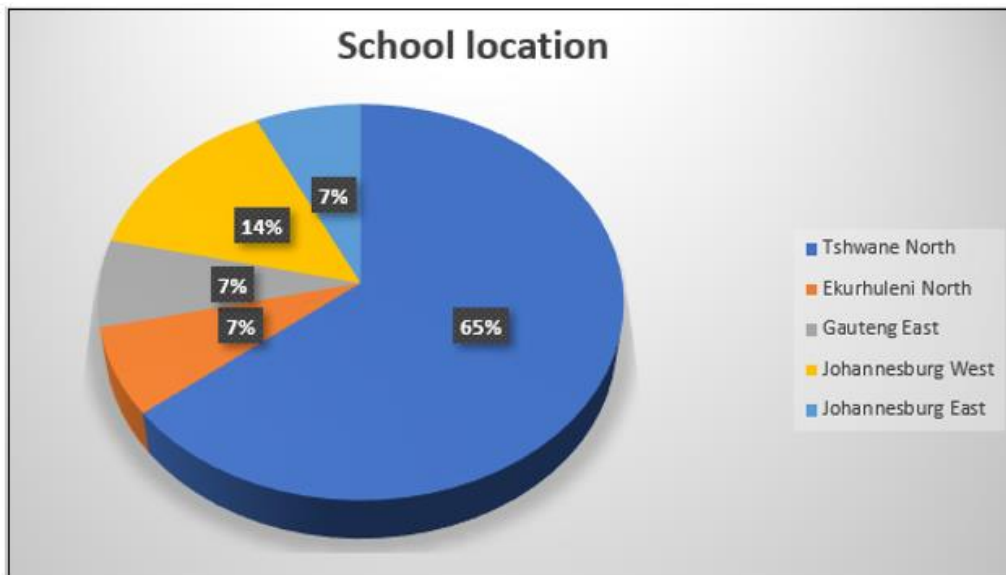
Figure 5.1:   Location of schools interviewed

Source: Researcher's own compilation

Question 2 enquired regarding the number of staff members employed. Of the 14 participating schools, eight of the 14 schools (58%) indicated that they had more than 50 staff members, inclusive of administrative personnel, groundsmen, and cleaning staff. Three of the 14 schools (21%) indicated a staff complement of between 20 and 29 staff members, while another three schools indicated between 30 to 39 (21%) staff members, as illustrated in Table 5.3.

Question 3 established the number of scholars in the school. As shown in Table 5.3, 11 (79%) indicated having between 500 and 999 scholars in the school. Two participants (14%) indicated having more than 1 500 scholars, while one participant (7%) indicated having 1 000 to 1 499 scholars.

Table 5.3:   Number of staff employed and number of scholars in the school

(n-14)	20-29	30-39	40-49	>50
Q2: Number of staff employed				
Frequency	3	3		8
Percentage	21%	21%		58%
	0-499	500-999	1000-1499	>1500
Q3: Number of scholars in the school				
Frequency		11	1	2
Percentage		79%	7%	14%

Source: Researcher's own compilation

Questions 2 and 3 of the interview guide were used to determine the legal imperative of the OHS Act No. 85 of 1993 in relation to questions 11, 23 and 29 regarding the number of appointed H&S representatives, first aiders, and fire fighters, respectively.

Questions 2 and 3 were also used to determine the legal imperative of the OHS Act No. 85 of 1993 in relation to question 11, 23 and 29 regarding the legislated ratio of one to 100 (1:100) appointed H&S representatives, first aiders and fire fighters, respectively. This ratio is calculated by adding the number of staff and scholars and dividing it by 100 to obtain the legally required number of appointments. For example, a school with a staff complement of 125 educators and 1 700 scholars would be calculated as follows:

1 700 + 125 = 1 825

1 825 ÷ 100 = 18.25

From the example used above, this equates to the legal appointment of 18 H&S representatives, first aiders and fire fighters, respectively, in the school.

Question 4 established the rank/post of the participants, where five interviews (36%) were conducted with deputy head principals, five (36%) were conducted with HoDs, and four (28%) interviews were conducted with principals, as illustrated in Figure 5.2.
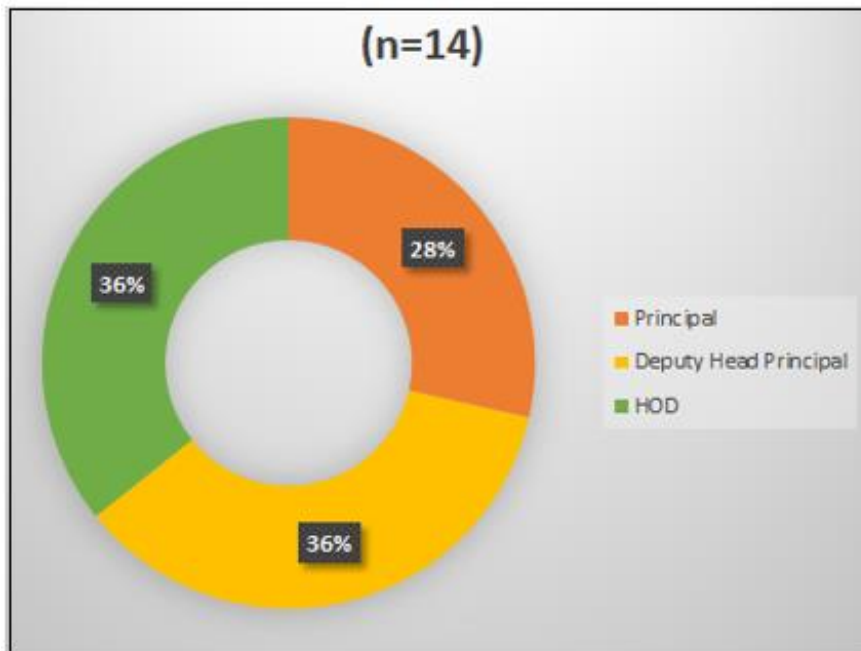
Figure 5.2:   Rank/Post level of participants

Source: Researcher's own compilation

Section B of the interview guide established participants' knowledge related to occupational health and safety legislation. A full list of verbatim transcriptions is available in Annexure F.

5.2.2   Section B: Occupational health and safety legislation: Knowledge

This section of the interview guide enquired about participants' understanding and knowledge of the OHS Act No. 85 of 1993 (question 5). Although the participants' responses indicated having some safety understanding and knowledge, this was mainly linked to basic school safety, protection, and security. In the literature review, Themane and Osher (2014:3) stated that the lack of safety within a school environment could result in hazards, dangers and risks. The study by Van der Voort and Wood (2014:3) related to legislative school safety knowledge concluded that appropriate and suitable school improvement plans are required.

The summary of collective participant responses (verbatim transcriptions) is available in Annexure F, where it can be deduced that participants do not have sufficient understanding and knowledge pertaining to the OHS Act No. 85 of 1993. This is in line with the participants' answers to question 5 which indicated that they are *"not very clued up related to this Act"* (Interview 2), "*not aware of the Act nor do I have much*

knowledge pertaining to the Act" (Interviews 3 and 7), *"basic knowledge"* (Interview 8) *and "knowledge via my husband who deals with H&S legislation on construction sites"* (Interview 13).

This is confirmed in the literature, where Ferreira (2015:99) stated that there is a need to increase knowledge pertaining to the prescripts of the OHS Act No. 85 of 1993. In addition, Ferreira (2015:99) stated that the DBE should make OHS a priority, as safety is a constitutional imperative. Furthermore, Sulkowski and Lazarus (2017:7) indicated that school safety has become a significant issue amongst legislators and educational policy-makers. This may be further collaborated by the answers to subsequent questions that follow in the interview guide, which means that safety knowledge amongst senior school managers requires urgent attention. This is measured further in the quantitative research (Phase 2, Section 6.3.2). Although participants may have heard of the OHS Act No. 85 of 1993, it does not indicate an understanding and knowledge of the content of the OHS Act No. 85 of 1993.

Question 6 of the interview guide enquired about participants' understanding of the responsibilities of an employer, as prescribed by the OHS Act No. 85 of 1993 in relation to section 8. Section 8(1) requires that the employer (school principal) provides and maintains a work (school) environment that is safe and without risk to the health of employees (educators and scholars). Section 8(2)(b) requires of the employer to take steps to eliminate any potential hazard to the safety and health of employees (Lexis Nexis, 2021:10).

The DBE governance makes schools directly responsible for providing an environment that promotes quality teaching and learning through promoting safety for educators, scholars, parents and other role-players (DBE, 2017a). In addition, the National Education School Policy, section 4 related to the directive principles states that protection is a fundamental right of every person as prescribed in chapter 2 of the Constitution of the Republic of South Africa (RSA, 1996a:5).

This question was asked to ascertain the participants' knowledge and understanding of their roles and responsibilities as legislated, and is linked to the jurisprudence theory discussed in Section 2.3.1. It can be deduced from the responses (Annexure F) that participants understood that they have a legal responsibility to ensure the safety of all persons on the school premises. However, most participants had a basic

understanding of their legal roles and responsibilities, and most of the responses were ambiguous and vague, and could not be directly construed to the OHS Act No. 85 of 1993.

Participant responses to question 6 stated that they were *"not that clued up regrading this Act"* (Interview 2), *"have heard of the OHS Act but I have poor and hardly any knowledge of the Act"* (Interview 4), *"responsibility for the safety of learners as a whole on the school's premises as well as the safety and security of staff member"* (Interview 7)*, "training in relation to understanding the OHS Act is a problem"* (Interview 10), and "*have a basic knowledge of safety petaining to the health and safety Act"* (Interview 12).

Sambasivam *et al.* (2017:580) stated that schools globally and in modern society undertake extensive activities that lead to the fundamental need to ensure school safety. In addition, Esterhuyzen (2017:20) argued that legislated health and safety compliance in South Africa is inadequate, and that the field related to health and safety within management should be broadened to be included within the work (school) environment. Section C of the interview guide examined the participants' compliance with occupational health and safety legislation.

5.2.3   Section C: Occupational health and safety legislation: Compliance

Section C of the interview guide comprised of 10 questions related to the H&S policy, and how educators and scholars are informed of the policy. The section continued by enquiring regarding the method of appointing H&S representatives, and the number of H&S representatives appointed. The number of appointed H&S representatives is later linked to questions 2, 3 and 11 to determine the legislative ratio (1:100) of appointments, as calculated in Table 5.4.

The section enquired regarding the type of training received by appointed H&S representatives. In addition, the section probed into how often H&S committee meetings are conducted, and what aspects are discussed at these committee meetings. Question 12 of the interview guide explored the legislative requirement of the OHS Act No. 85 of 1993 section 19(4) that requires that H&S committee meetings should be conducted at least once every quarter. It further examined how H&S inspections are conducted in the school, how hazards and risks are identified, and what hazards and risks are observed and reported to determine legal compliance in

relation to section 8(2)(d). Finally, it examined how identified hazards and risks are communicated in the school. In addition, the NEPA No. 27 of 1996, section 3 states that the determination of NEPA No. 27 of 1996 by the Minister of education shall take into account the provision of the Constitution of the Republic of South Africa. Furthermore, national policy will govern the whole or part of any provincial education policy (RSA, 1996a:3).

Question 7 of the interview guide was linked to section 7 of the OHS Act No. 85 of 1993 that allows the chief inspector of the DoL to request a written policy from an employer. In addition, the SASA No. 84 of 1996, section 2(3) addresses the NEPA No. 27 of 1996. In the literature review (Section 1.5.4.6) a study conducted by Ferreira (2015) stated that there is a need to increase awareness related to the OHS Act No. 85 of 1993 in schools. Furthermore, the study stated that the DBE should put an OHS policy in place and that OHS should be made a priority, as safety is a constitutional imperative (Ferreira, 2015:39, 99). In addition, Mabasa (2013:1) investigated written policies, programmes, and frameworks in schools which claimed that in developing countries such as South Africa, the formulation of policies and programmes are ineffective after implementation.

The researcher is of the view that participants did not differentiate between the safety policy and that of a standard operating procedure (SOP). It is the researcher's belief that reference was made more to an SOP than an actual safety policy as legislated, as can be perceived from responses such as: *"at the beginning of every new year the school has a meeting where the school policies, including the safety policy is reviewed and discussed'* (Interview 1), *"the school has assembly and staff meetings as required where educators and scholars are informed of any policy changes"* (Interview 4), *"2020 posters placed in a strategic position"* (Interview 6), and *"the school has an OHS policy which is reflected in the school code of conduct for educators and scholars"* (Interview 9). In addition, the majority of participant responses made reference to the D6 communicator used in schools as an electronic media of communication. A full list of responses to this question is available in Annexure F.

Question 8 links to the previous question and addresses how communication reaches scholars regarding the content of the H&S policy. As noted from the responses given for both questions 7 and 8, schools appear to have good communication systems in place through school meetings during hall and assembly periods, school newsletters

and a digital communication application known as the D6 communicator. However, the researcher is of the opinion that the safety policies are perceived as being more of an SOP, addressing aspects of school activities and school-related injuries. A full list of verbatim transcriptions is available in Annexure F.

The ensuing range of questions (questions 9 to 11) explored the appointment process of the H&S representatives in the school, who is appointed and how the actual appointment of H&S representatives is made; type of training received by the H&S representatives; and how many H&S representatives have been appointed. The phrasing of these questions allowed the researcher to determine the participants' legal safety responsibly concerning section 8(1) of the OHS Act No. 85 of 1993 that requires an employer to provide and maintain a safe working environment.

The appointment of H&S representatives, in accordance with the prescript of sections 17 and 18 of the OHS Act No. 85 of 1993, will enable the employer (school principal/deputy head principal) to ensure a safe school environment. Section 17(5) of the OHS Act No. 85 of 1993 states that the employer needs to appoint one H&S representative (in writing) for every 100 employees (ratio of 1:100). Section 17(4) requires that the appointed H&S representative is a full-time employee in the workplace and is acquainted with the conditions of the said workplace. Section 17(2) outlines the nomination or election process of H&S representatives. The SASA No. 84 of 1996 does not refer to H&S representatives (RSA, 1996b).

The researcher observed from the responses given to question 9 that schools generally comply well regarding the appointment of H&S representatives as prescribed in the OHS Act No. 85 of 1993, section 17, and the General Administrative Regulations (GARs), regulation 6 concerning the appointment process. From the responses received, it can be deduced that the school H&S representatives are generally appointed by the school principal. However, not all schools followed the prescribed nomination or election process of the GARs 6(a).

Examples of responses to question 9 are as follows (full list in Annexure F): *"The health and safety chairperson and members are appointed at the begining of each new year as identified by the Principal and senior management"* (Interview 1), *"teachers are requested (volunteer) to assist with safety. Each teacher is responsible for ensuring the safety in their classroom and on the school grounds"* (Interview 4), and *"normally*

done through a selection process where teachers will be selected by staff and students" (Interview 7).

Question 10 enquired regarding the type of safety training given to appointed H&S representatives. Following section 8(2)(e) of the OHS Act No. 85 of 1993, it is the duty of the employer to ensure that information, instruction, training and supervision are provided. Section 17(7) states that all activities and training related to health and safety are conducted within normal working hours. No reference or referral is made to H&S training in the SASA No. 84 of 1996 (RSA, 1996b).

Annexure F provides a summary of responses to the type of training appointed H&S representatives have received as follows: *"safety workshops held by the DoE that teachers are required to attend"* (Interview 3), *"OHS Risk assessment course (x6), OHS health and safety representatives (x3) and OHS first aider level 2 (x1)"* (Interview 5), *"workshops organised by the DOE. Internal workshop organised by the H&S committee"* (interview 8), as well as *"no formal safety training given. Grade heads have not received any safety training"* (Interview 14).

The responses to question 10 are ambiguous, in the sense that although some participants indicated receiving H&S training, this training was conducted during their formal teacher-training phase, while other participants indicated not receiving any H&S training. In addition, participants were uncertain as to the training service provider. Ferreira (2015:99) maintained that the DBE should ensure that an OHS policy is in place, and that all school officials receive training in OHS to become acquainted with the legal prescripts of the OHS Act No. 85 of 1993.

Section 17 of the OHS Act No. 85 of 1993 requires the appointment of H&S representatives. The OHS Act No. 85 of 1993 states that one H&S representative should be appointed for every 100 (ration - 1:100) employees. No reference or referral is made to H&S representatives in the SASA No. 84 of 1996 (RSA, 1996b). An example of the ratio (1:100) where a school has a school complement of 550, is calculated as follows:

500 learners + 50 educators = 550 persons.

550 / 100   = 5.5

This equates to the appointment of six H&S representatives.

Table 5.4 is a summary of the calculation formula used to determine legal compliance of appointed H&S representatives in the school versus the legal requirement:

Table 5.4: Calculation to determine the number of appointed H&S representatives (Reps)

Interview	No. of educators	No. of scholars	Total	Ratio	No. of appointed H&S Reps required	
1	125	1 700	1 825	1 825 ÷ 100	18.25	18
2	50	500	550	550 ÷ 100	5.5	6
3	30	500	530	530 ÷ 100	5.3	5
4	50	500	550	550 ÷ 100	5.5	6
5	50	500	550	550 ÷ 100	5.5	6
6	50	500	550	550 ÷ 100	5.5	6
7	50	500	550	550 ÷ 100	5.5	6
8	30	500	530	530 ÷ 100	5.3	5
9	30	500	530	530 ÷ 100	5.3	5
10	88	1 142	1 230	1 230 ÷ 100	12.39	12
11	140	1 950	2 109	2 109 ÷ 100	21.09	21
12	50	500	550	550 ÷ 100	5.5	6
13	50	500	550	550 ÷ 100	5.5	6
14	30	500	530	530 ÷ 100	5.3	5

Source: Researche's own compilation

Table 5.4 was further analysed to determine the legal compliance of appointed H&S representatives in relation to the actual number of appointed H&S representatives in the school (Table 5.5).

Table 5.5: Legal compliance of appointed H&S representatives

Interview	No. of appointed school H&S Reps	H&S Reps legal requirement	Compliant Non-complaint
1	<10	18	Non-compliance
2	5-7	6	Compliant
3	10	5	Compliant
4	0	6	Non-compliance
5	6	6	Compliant
6	3	6	Non-compliance
7	3	6	Non-compliance
8	10	5	Non-compliance
9	10	5	Non-compliance
10	5	12	Non-compliance
11	27	21	Compliant
12	9	6	Compliant
13	1	6	Non-compliance
14	0	5	Non-compliance

Source: Researcher's own compilation

The majority of schools indicated the appointment of at least one H&S representative. Table 5.5 shows that five of the 14 schools (36%) are compliant with the prescript of the OHS Act No. 85 of 1993 regarding the legal appointment ratio of H&S representatives. In addition, question 10 indicated lack of formal safety training. This means that it is unlikely that the H&S representative function falls within the prescript of the OHS Act No. 85 of 1993. The DBE should ensure OHS compliance within the legal prescripts of the OHS Act No. 85 of 1993 (Ferreira, 2015:99) by ensuring the legal appointment and training of H&S representatives. A full list of the verbatim transcriptions can be viewed in Annexure F.

Subsequently, the OHS Act No. 85 of 1993 section 19(1)(4) requires that safety committee meetings should take place as often as may be required but at least once every three months with formal record keeping related to safety committee agendas and minutes (Lexis Nexis, 2021:12). Question 12 enquired how often H&S committee meetings take place and what aspects are discussed at these meetings. Question 12 allowed the researcher to determine the legal compliance regarding how often H&S committee meetings (section 19) took place (Table 5.6). Some schools indicated discussing safety aspects during staff meetings, however, no formal safety committee meetings have been established.

Table 5.6:   **How often do H&S committee meetings take place?**

Interview	Participant response	Compliance Non-compliance
1	Annually	Non-compliance
2	Bi-monthly	Compliance
3	No formal schedule	Non-compliance
4	Quarterly	Compliance
5	Monthly	Compliance
6	Once a term (quarterly)	Compliance
7	No formal schedule	Non-compliance
8	Twice per term	Compliance
9	No formal schedule	Non-compliance
10	Twice per term	Compliance
11	No indication given	Non-compliance
12	Twice per term	Compliance
13	Once per term (quarterly)	Compliance
14	Staff meeting	Compliance

Source: Researcher's own compilation

Table 5.6 shows that nine of the 14 schools (64%) indicated that they conduct H&S committee meeting. From the responses listed in Table 5.6 and Annexure F, it can be inferred that school meetings being conducted under the auspices of H&S are not necessarily a formal H&S committee meeting as prescribed by the OHS Act No. 85 of 1993, section 19. Furthermore, the responses do not confirm jurisprudence in relation to the requirements of the OHS Act No. 85 of 1993, relating to the employer's responsibility to ensure school safety and the activities (functions) conducted by the H&S representatives.

Question 12 allowed the researcher to link to the legal prescripts of section 18 related to the functions carried out by the H&S representatives and section 20 related to the functions of the H&S committee. No reference or referral is made to H&S committees in the SASA No. 84 of 1996 (RSA, 1996b). Section 20(a) requires of the H&S committee to make recommendations to the employer (school principal) on safety aspects identified in the school. Furthermore, section 20(b) requires the discussion of workplace incidents and the reporting thereof in relation to sections 24 and 25 for occupational diseases (Lexis Nexis, 2021:13).

As noted in Annexure F (question 12) aspects discussed at these H&S committee meetings include statements such as the "*safety policy is discussed and reviewed*" (Interview 1), "*discuss the replacement of broken windows and doors, and problems in bathrooms*" (Interview 4), "*discuss inspection reports*" (Interview 5), "*involve safety and security issues which include buildings and maintenance*" (Interviews 6 - 10), "*inspection of the infrastructure, accident prevention, maintenance of firefighting equipment and accidental injury prevention protocols*" (Interview 11), and "*maintenance issues, cleanliness of the environment, security, discipline and health issues*" (Interview 12).

Question 13 enquired how H&S inspections are conducted by schools, where section 8(1) of the OHS Act No. 85 of 1993 requires employers to provide and ensure a working (school) environment that is safe and without risk to employees' health. Furthermore, section 8(2)(b) states that the employer must implement steps to eliminate and mitigate any hazard or potential hazard to the health and safety of employees. In addition, section 8(2)(d) requires the employer to establish what hazards are present in the workplace that could unduly affect the health and safety of persons (Lexis Nexis, 2021:10).

Question 14 enquired how hazards and risks are identified during school inspections, where conducting inspections to identify hazards and risks would allow an employer to achieve the legal requirement. No reference or referral is made to safety inspections in the SASA No. of 1996 (RSA, 1996b). A summary of inspection frequency and responses received to question 13 is listed in Table 5.7 with a full list of verbatim transcriptions in Annexure F.

Table 5.7:   How are H&S inspections conducted?

Interview	Frequency of inspections	What is inspected
1	Ad hoc basis	Classrooms
2	Monthly	Classrooms Groundsmen will report any safety aspect
3	Twice per term	Fire department inspects the fire extinguishers
4	None given	Classrooms and school grounds
5	Regular basis	Checklist is nused to check compliance of safety regulations
6	None given	School property Facilities
7	None given	Inspection register Fire department inspects fire extinguishers
8	None given	Broken windows, desks and the environment
9	Monthly No formal schedule	Informal safety issues are reported School holidays are used to conduct school maintenance
10	Ad hoc	External contractor manages safety and security
11	Regularly	Classrooms
12	None given	Classrooms Everyone in the school has a responsibility to report any unsafe aspects
13	Six monthly	Health inspection by the Department of Health (DoH)
14	Unsure	Classrooms

Source: Researcher's own compilation

From the responses (Table 5.7 and Annexure F), it can be concluded that inspections are conducted in schools mainly by educators in their classrooms. These inspections do not necessarily mean that safety hazards and risks are identified. Two schools indicated following the NSSF, while another uses a checklist. In addition, one school mentioned inspections conducted by the Department of Health (DoH). Linking this to responses in question 10 related to H&S training, it can be construed that educators may not be sufficiently trained to recognise and identify safety hazards and risks. This is further highlighted in question 15 related to what hazards and risks are identified on the school premises during H&S inspections.

In accordance with the legal prescript of the OHS Act No. 85 of 1993, section 8(2)(d), it is the employer's duty to establish the hazards to H&S an educator and scholar may be exposed to. In addition, section 8(2)(b) requires of the employer to take the necessary steps to mitigate these hazards. Annexure F, question 14 allowed the researcher to quantify responses from the previous questions concerning the H&S inspections that are conducted, and the type of training given to appointed H&S representatives. Furthermore, The SASA No. 84 of 1996 section 58C, related to the compliance with norms and standards, mentions identifying the risk areas of compliance in section 58C(b). Section 58C(d) relates to developing protocols to manage the risk areas to comply with norms and standards (RSA, 1996b:53). However, no mention is made to the identification of H&S hazards and risks.

The literature has found that the duty to inform employees (educators) regarding hazards and risks is a key responsibility of the employer (school principal), as well as how these hazards and risks are to be managed and mitigated (Maseko, 2016:29). Maseko (2016:31) further stated that employees (educators) should also be aware of the employers' (school principals') responsibility to inform them of any dangers, hazards and/or risk.

A consolidated list of responses to question 14 is available in Annexure F, where a summary of responses are that "*line managers and supervisors will do a risk assessment by using a risk assessment form*" (Interview 5), *"potential hazards are identified through the walk-about conducted by the appointed health and safety representative"* (Interview 6), *"a subgroup of the health and safety committee will conduct regularly inspection by means of a walkabout"* (Interview 11), and *"hazards and risk are noted by all educators who report the matter to either the principal* (Interview 13).

As noted from the responses in Annexure F, educators are responsible for the safety in their classrooms, and hazards are identified by educators during classroom inspections. In addition, hazard identification on the school premises appears to be the responsibility of the groundsman or the H&S committee.

Although hazard identification appears to be conducted in schools, the researcher is concerned that this is not managed in accordance with the legislative prescript of the OHS Act No. 85 of 1993. In the literature, Themane and Osher (2014:3) stated that

the lack of safety within a school environment could go unnoticed by educators and could result in hazards, dangers and risks. Similarly, Sambasivam *et al.* (2017:580) stated that the lack of safety activities could result in the potential for various risks and/or hazards in both the physical and social school environment.

To quantify the responses from question 14, question 15 enquired about the hazards and risks that have been observed/reported during H&S inspections. As previously indicated, the OHS Act No. 85 of 1993, section 8(2)(d) requires of an employer to establish what hazards and risks are present on the school premises that could affect the H&S of educators and scholars. Section 13 of the OHS Act No. 85 of 1993 focuses on the 'duty to inform'. Meaning an employer (the school principal) has a duty to inform employees (the educators) and other school persons, inclusive of scholars, of any hazards and risks pertaining to their H&S in relation to the work being conducted (Lexis Nexis, 2021:11).

As reviewed in the literature, Themane and Osher (2014:3) described a safe school as an environment that is characterised by a healthy setting that is free of risk and unsafe conditions. In addition, a safe school is an environment where educators and scholars can learn without fear of bodily harm and where everyone, including other role-players, feel physically and psychological safe and protected from dangers, hazards, injuries, and unforeseen incidents (Masitsa, 2011:165). Table 5.8 summarises the hazards and risks observed with a full list of participant responses (Annexure F).

Table 5.8:   Hazards and risks observed

Access of persons to the school during school time	Bathrooms (dirty)	Basins cracked	Beestings
Broken doors and windows	Ceiling leaks	Creeping damp in many classrooms	Dangerous diving equipment
Dangerous and sharp objects	Danger zone - first aid kit	Electrical distribution boards(Db) (open)	Electrical wiring (unsafe)
Emergency exit signage	Fire extinguishers (none)	Floor tiles (broken)	Floor tiles slippery
Grass cutting equipment	Leaking taps	Lighting (poor)	Liquid spillages
Manhole covers (open)	Old building	Pavilion (broken seats)	Paving uneven
Roof trusses (structural failure)	Security and security aspects		Stair and stair railings (broken/missing)
Structural damage	Unauthorised entry points	Walls cracks	Windows that do not close

Source: Researcher's own compilation

As mentioned in the previous questions, the lack of safety within a school environment could go unnoticed by educators and could result in hazards, dangers, and risks (Themane & Osher, 2014:3). In addition, Maseko (2016:31) claimed that every employee (educator) has the right to work in a safe and healthy workplace (school environment) and has the right to stop working activities when there is a potential for imminent danger. Employees (educators) should also be aware of the employers' (school principals') responsibility to inform them of any dangers, hazards and/or risks (duty to inform).

It is disconcerting to note the participants' responses related to the types of hazards and risks showed that these are not essentially safety hazards and risks. From the hazards that were observed, the researcher ponders on how participants could view persons being scanned at the school gate, garbage, graffiti, the environment, the school grounds and securities, bee stings, toilets not working and blocked drains, and food and book storage rooms, as safety risks. The lack of insight in the definition of a safety hazard and risk can be attributed to the lack of H&S training.

The OHS Act No. 85 of 1993, section 8(2)(j), requires that employers (school principals) should inform employees (educators) regarding their scope of work. In addition, section 13(a) requires of an employer to ensure that employees are familiar and acquainted with all hazards and risks attached to any work performed (Lexis Nexis, 2021:10-11). A study conducted by Maseko (2016:31) confirmed that every employee has the right to work in a safe and healthy workplace. In addition, Maseko (2016) maintained that an employee may stop activities when there is the potential of imminent danger.

Question 16 (Annexure F) enquired from participants how the employer informed educators, scholars and parents and other persons regarding identified hazards and risks on the school premises. Responses indicated that *"scholars are informed during school hall assembly periods and parents are informed through a newsletter, cell phone SMS, WhatsApp, and the D6 communicator"* (Interview 5), *"Educators are informed during staff meetings and learners during the assembly period, any serious aspects will be communicated with the grade-heads. The school also uses a long-term newsletter (Chillie Chat) that is emailed to all educators, parents, and learners"* (Interview 9), and *"they are informed through parent's meetings, staff meetings, different committee meetings, school governing body (SGB) meetings"* (Interview 12).

As noted from participant responses (Annexure F), schools have operational systems of communisation in place through school meetings, newsletters, an electronic WhatsApp system and the D6 communicator. These communication systems are used to inform educators, scholars, and parents. A concern noted from these communication systems is that persons not linked to the school WhatsApp group or D6 communicator are not informed of vital school information. Similarly, the researcher is apprehensive that the communicated information may not fully address aspects of serious hazard or risk that may require immediate action.

The next section of the interview guide examined occupational health and safety legislation related to incidents, accidents, injuries and first aid.

5.2.4 Section D: Occupational health and safety legislation: Incidents, accidents, injuries and first aid

Section D of the interview guide addressed legal compliance of the OHS Act No. 85 of 1993 in relation to section 24, the reporting of incidents to the inspector. It also includes the GAR, regulation 8, regarding the reporting of incidents and occupational diseases. In accordance with section 24(1) of the OHS Act No. 85 of 1993, specific incidents as listed occurring in the workplace are to be reported. Incidents that result in the inability to work for 14 days or more must be reported to the DoL.

Section 24(1)(a) requires the reporting of incidents where a person loses consciousness, the loss of a limb or part of a limb, or where a person is temporarily or permanently disabled. Furthermore, section 24(1)(a) requires the reporting of a workplace incident when a person is unable to perform work-related duties for a period of at least 14 days. Reporting is also required where there was a major incident [section 24(1)(b)], such as the bridge collapse that occurred at the Driehoek High School in Vanderbijlpark in February 2019. Section 24(2) requires the reporting of incidents where a person dies or was injured to the extent that they are likely to die, such as the incident where a five-year old fell into a pit latrine at a school in the Limpopo Province in 2014. A similar incident occurred in August 2018 when another five-year old fell into a pit latrine at a school in the Eastern Cape Province. In 2020 a 13-year old drowned during a river rafting exercise in Brits during a school camp (SA News, 2020).

In addition, Section D explored the legal requirement of the General Safety Regulations (GSRs), where regulation 3 outlines the requirement for first aid and first aid equipment. This section consisted of eight questions related to the process followed by the schools when an incident, accident, or injury occurs. It continues to examine how these accidents, incidents or injuries are reported and to who these incidents are reported and concludes by enquiring into the number of appointed first aiders to determine whether the schools are legally compliant in relation to the 1:100 ratio as stipulated in GSRs 3(4). The ratio calculation was outlined in Section 5.2.3 under question 10.

The SASA No. 84 of 1996, section 8A(5)(a) relates to an incident reference number that is required when any dangerous object or illegal drug has been confiscated from a scholar (RSA, 1996b:14). Section 8A relates to random searches, seizure, and drug testing in schools and makes mention of safety, where searches may be conducted after taking into account the safety and health of the learner at the school. However, no mention has been made as to the procedure to be followed in the event of an injury.

Question 17 related to the process followed by the school when an or injury occurs on the school premises. Participant responses to question 17 related to the process followed when reporting an incident, accident, or injury are summarised as follows with a full list available in Annexure F. *"The scholar will report to either the teacher or directly to the office who will inform a first aider who will conduct an assessment to determine the nature of the injuries. If these injuries are of an urgent nature, the admin office will be requested to contact EmergMed for immediate emergency assistance and an ambulance. Once the student has been assessed and/or stabilised the admin office will be requested to contact the parents to fetch the scholar"* (Interview 1).

"Depends on how serious the incident or accident or injury is, we follow the protocol. The teacher writes a report and submits it to the safety coordinator. If the injury is minor, he/she apply the first aid to the learner, and if the incident is an emergency, we call the ambulance and the parents" (Interview 8).

"One of the appointed first aiders will conduct an informed assessment of the learner who has been injured. The school is linked to a response unit (Monitor Net) who will be contacted (if required) and a medical support vehicle linked to Med clinic and well-equipped will be dispatched to the school. The first aider will stabilise the learner

while awaiting medical assistance. If needed, an ambulance will be called for severe injuries and the parents informed" (Interview 9).

As an inherent school responsibility, schools have procedures in place when managing school-related scholar incidents, accidents, and injuries. When answering question 17, participants concentrated on incidents, accident, and injuries involving scholars, which is considered an inherent school characteristic and the educators' responsibility.

It is evident from the literature that the DBE has committed itself to preventing and managing safety incidents in schools through the NSSF, as well as creating a safe and supportive learning environment (DBE, 1996:13; RSA, 1996a). This, however, does not confirm whether the DBE commitment is related to scholars and educators. The literature affirms that scholars are increasingly faced with serious physical safety risks, resulting in a rise of incidents or injuries on a daily basis within the classroom and on school premises. Furthermore, Esterhuyzen (2017:20) argued that high incidents of occupational related injuries are due to non-compliance with OHS legislation.

Question 18 enquired to whom these school accidents, incidents and injuries were reported. As previously indicated, sections 24(1) and 24(2) require the reporting of incidents under specific situations such as loss of consciousness, loss of a limb or part of a limb, temporary or permanent disabled or death. In addition, the GAR, regulation 8(1)(a), requires the reporting of an incident or injury within seven days of the incident or injury to the DoL Provincial Director. Section 8(4) requires of a registered medical practitioner who examines and treats a person for an occupational injury/disease to report to the Chief Inspector and the employer (Lexis Nexis, 2021:22).

The responses are listed in Annexure F, and some responses indicate that accidents, incidents and injuries are reported to the *"school office, first aider, and school principal/deputy head principal"* (Interview 4), the *"District office, head office and spokesperson for a member of the executive council (MEC) when necessary. DOL where applicable"* (Interview 6). Indication was also given that it will *"depend on how serious the accident or incident or injury is* (Interview 8). *"The DoE is informed of incidents as prescribed by the School Act"* (Interview 10).

As an intrinsic and inherent process, schools have good internal reporting processes concerning school-related scholar incidents, accidents and injuries. However, the legal reporting of school-related incidents, accidents and injuries goes beyond the internal reporting process. Section 24 of the OHS Act No. 85 of 1993, requires reporting of any incident, accident and injury to the DoL that results in the inability to work for 14 days or more. No participant made any reference to such reporting. Two schools referred to reporting the incident, accident or injury to the DBE, GDE or the Department of Health (DoH).

Question 18 further quantified in the next range of questions relating to the reporting of school incidents, accidents and injuries to specific role-players, such as the school office (question 19), school principal (question 20), the school district/DBE (question 21), and the DoL (question 22).

Participant responses from question 19 related to the reporting of these school incidents, accidents and injuries to the school office indicated that *"the first aider or teacher reports to the office* (Interview 1), *"learners report either to their teachers or directly to the office and the school district office will be informed when there are serious incidents"* (Interview 7), and "*the first aider will forward a WhatsApp on the selected school group. The school district office and the Department of Education is informed of the incident as prescribed by the School Act"* (Interview 10). A full list of responses is available in Annexure F.

As noted in the responses (Annexure F), the internal reporting of scholar incidents, accidents and injuries is well structured and managed. However, information related to the management of educator injuries was not mentioned. Due to Covid-19 restrictions during data collection, and having to email the interview guide to the participants, the researcher was restricted from delving deeper into the responses.

As the school principal is regarded as the employer and CEO in terms of the OHS Act No. 85 of 1993, section 16, and charged with duties and responsibilities in relation to section 8 of the OHS Act No. 85 of 1993, question 20 relates to the reporting of incidents, accidents, and injuries to the school principal. As the employer and accountable member, the school principal should be informed of all occurrences on the school premises. Responses related to incidents, accidents and injuries reporting to the school principal indicate that *"The learner will report to the teacher or directly to*

the school office. If the learner cannot report themself a friend will alert the teacher or office" (Interview 2), *"teachers report injuries to the school administration office, who reports to the principal"* (Interview 3), and *"once the learner has been assessed and stabilised, the school office or chairman of the health and safety will inform the headmaster and follow it up with a written report of the incident/accident"* (Interview 11). A full listed of responses is available in Annexure F.

As noted from the previous question, schools have good internal reporting procedures in place when reporting school-related scholar incidents and injuries to the school principal. Legislatively, section 14(e) of the OHS Act No. 85 of 1993, which focuses on the general duties of employees at work, requires educators to report any unsafe and unhealthy situation, as well as incidents, accidents, and injuries, that may affect the H&S of any educator or scholar (Lexis Nexis, 2017:11).

Questions 21 and 22 relate to the external reporting process of incidents, accidents and injuries that should be followed by schools. As prescribed by the OHS Act No. 85 of 1993, GAR, regulation 8(3) incidents, accidents and injuries arising out of or in connection with work-related activities must be reported to the DoL Provincial Director. A review of the literature showed that there is an increase in school deaths, as reported to the DoL through the school district and the DBE. For example, in the first quarter of 2020, 18 scholars died due to various circumstances (Adams & Adams, 2020). Other reportable incidents would include the school drownings that made headlines when a 13-year-old boy drowned in Gauteng at a school sports camp in January 2020, the fifth drowning for the same school (Grobler, 2020). Similarly, in 2021, 15 scholars drowned while attending a leadership camp in the Eastern Cape (Petersen, 2021).

The literature is unclear as to whether these drowning in Gauteng schools were reported, and if reported, were they investigated and what recommendations were made to prevent similar future school incidents. Responses from question 21 related to the reporting of school incidents, accidents, and injuries to the school district/GDE indicated that *"these are rarely reported"* (Interview 2), "r*eport to the Institutional Development and Support Official (IDSO) and relevant officials. Only serious incidents are reported to the school district manager or the district manager may be copied in"* (Interview 6), and the *"principal informs the Designated School Official (DSO) and the head of the district and takes future direction from them if required*" (Interview 13). (A full list of responses is available in Annexure F.)

The SASA No. 84 of 1996, section 16(4) allows the Head of Department of the GDE and DBE to close a public school temporarily in the case of emergency when the lives of educators and scholars are endangered, with a real danger of bodily injury and/or property damage (RSA, 1996b:23). Some responses (Annexure F) indicated that schools will report serious incidents, accidents, and injuries to the school district (Interviews 7, 8, 9, 10, 11 and 12). One school indicated reporting to the Institutional Development and Support Official (IDSO) and relevant officials (Interview 6), while another school reported school incidents, accidents and injuries, as needed, to the DBE (Interview 10). Yet another reporting line is that of reporting to the Designated School Official (DSO) and the head of the school district (Interview 13). Responses from the other schools indicated not reporting school incidents, accidents, and injuries (Interviews 1, 4, and 14) or reporting when needed (Interviews 3 and 5). One school indicated rarely reporting incidents, accidents, and injuries (Interview 2).

Question 22 related to the reporting of incidents, accidents, and injuries to the DoL, as required in section 24 of the OHS Act No. 85 of 1993 and GAR, regulation 8(3) (Lexis Nexis, 2021:13 and 22). Schools indicated that reporting to the DoL was *"rarely reported"* (Interview 2), *"not sure about the process to the Department of Labour"* (Interview 8), *"not reported"* (Interview 9), and *"none have been reported'* (Interview 10). One school mentioned the management of educator incidents, accidents and injuries that is reported to *"Workman's Compensation is handled by education in consolidation with the emergency room at the hospital"* (Interview 13).

School related incidents, accidents, or injuries where educators or even scholars are booked off for more than 14 days appear to be a rare occurrence as per responses (Annexure F), where one school indicated rarely reporting, and five schools indicated not reporting incidents, accidents and injuries. One school indicated the question as not being applicable, four indicated being unsure, and three schools indicated reporting through other channels. The response of "unsure" could be linked to the deputy head principals and HoD participants who completed the online interview guide, as this process is managed by the school principal. The responses do not clearly indicate the process followed when serious incidents, accidents or injuries occur. This may be due to the rarity of such occurrences. Similarly, it may be due to a lack of knowledge related to the legal reporting process required by the OHS Act No. 85 of 1993, section 24 and the GARs, regulation 8.

The next two questions (23 and 24) in the interview guide relate to the legal prescript of first aider appointments. First aid, emergency equipment and procedures are outlined in the GSRs, regulation three, where an employer is required to ensure that a person at work receives prompt first aid treatment in case of an injury. Under the OHS Act No. 85 of 1993, the GSRs, regulation 3(2), where five or more employees are employed, the employer should provide first aid boxes in the workplace. Regulation 3(4) further stipulates that where there are 10 or more employees in the workplace, the employer needs to take steps to ensure that for every group of 100 employees, at least one first aider (1:100) with a valid first aid certificate of competence from a registered first aid training service provider, such as the Red Cross Society, is readily available during working hours (Lexis Nexis, 2021, 27).

The aspect of first aid is not addressed in the NEPA No. 27 of 1996, nor in the SASA No. 84 of 1996 (RSA, 1996a, 1996b). The ratio calculation of 1:100 for the appointment of first aiders was explained in Section 5.2.3 under question 10. Similar to Table 5.4, the responses and calculations of legislated first aid appointments versus the actual number of appointed first aiders in the school can be viewed in Table 5.9. A consolidated list of responses is available in Annexure F.

Table 5.9:   Calculation to determine the number of appointed first aiders

Interview	No. of educators	No. of scholars	Total	Ratio	No. of legal appointed first aiders	
1	125	1 700	1 825	1 825 ÷ 100	18.25	18
2	50	500	550	550 ÷ 100	5.5	6
3	30	500	530	530 ÷ 100	5.3	5
4	50	500	550	550 ÷ 100	5.5	6
5	50	500	550	550 ÷ 100	5.5	6
6	50	500	550	550 ÷ 100	5.5	6
7	50	500	550	550 ÷ 100	5.5	6
8	30	500	530	530 ÷ 100	5.3	5
9	30	500	530	530 ÷ 100	5.3	5
10	88	1 142	1 230	1 230 ÷ 100	12.39	12
11	140	1 950	2 109	2 109 ÷ 100	21.09	21
12	50	500	550	550 ÷ 100	5.5	6
13	50	500	550	550 ÷ 100	5.5	6
14	30	500	530	530 ÷ 100	5.3	5

Source: Researcher's own compilation

Table 5.9 was further analysed to determine the legal compliance of appointed school first aiders in relation to the legal appointment of first aiders (Table 5.10).

Table 5.10: Legal compliance of appointed first aiders

Interview	No. appointed school first aiders	Level of first aid	First aider legal requirement	Compliance Non-compliance
1	15	Not indicated	18	Non-compliance
2	2-4	Unsure	6	Non-compliance
3	0		5	Non-compliance
4	5-7	Not indicated	6	Compliance
5	10	Level 2	6	Compliance
6	15	Not indicated	6	Compliance
7	10	Not indicated	6	Compliance
8	0		5	Non-compliance
9	58	Level 1 & 3	5	Compliance
10	23	Level 1 & 3	12	Compliance
11	30	Level 1 & 3	21	Compliance
12	1	Not indicated	6	Non-compliance
13	8	Level 3	6	Compliance
14	0		5	Non-compliance

Source: Researcher's own compilation

As a school is responsible for the safety of scholars, it has an inherent responsibility to ensure immediate and prompt first aid. As can be seen from the responses (Table 5.10), eight of the 14 schools (57%) were compliant in relation to the legislative requirement of appointed first aiders. Six of the 14 (43%) schools were non-compliant. The level of first aid training within four schools ranged from level 1 to level 3 first aid, while one school indicated level 2 training. In addition, two schools indicated having no appointed first aiders, while five schools did not give any indication.

To assess schools that were found to be non-compliant to legislation, question 24 of the interview guide asked participants who managed incidents, accidents, and injuries if no first aiders had been appointed. Nine schools responded that question 24 was not applicable. other responses related to the *"H&S person, teachers, and support staff"* (Interview 3), *"H&S coordinator with the help of the committee members"* (Interviews 8 and 12), "*senior educator or the principal is called back to school applicable",* (Interview 13). From the responses given a concern is the first aid training received by members (if any). Due to the Covid-19 pandemic and emailed interview guides the researcher was unable to probe deeper into the responses given.

The next section of the Interview guide examines occupational H&S legislation related to facilities (buildings).

5.2.5   Section E: Occupational health and safety legislation: Facilities

This section of the interview guide probed into the legal responsibilities of the school principal (employer) as required in section 8(1) to ensure a working environment that is safe and without risk to the health and safety of employees (educators, inclusive of scholars and other persons).

In addition, the FRs, as linked to the OHS Act No. 85 of 1993, address aspects of sanitation, dining (staff) rooms, drinking water, and conditions of rooms and facilities. In the FRs, regulation 2(1) an employer is required to make available sanitary facilities as prescribed in the NBRs (SANS 10400 of 2021), parts F, P, and Q. Regulation 2(2)(a) requires that these facilities are available and accessible, and 2(2)(b) requires that the facilities adhere to the criteria related to the total number of users as prescribed in SANS 10400 (2021). Regulation 8(3)(a) further requires that sanitary equipment (toilet paper and hand washing liquid) is made available free of charge. In addition, regulation 2(5)(a) requires the facilities to be clearly marked (Lexis Nexis, 2021:173).

The FRs, regulation 5(1) requires school principals (employer) provide educators (employees) with a separate dining (staff room) facility as prescribed in SANS 10400 (2021, part C). Furthermore, regulation 5(2(a) requires the provision of tables and chairs, and regulation 8(2)(d) requires natural or artificial ventilation as prescribed in SANS 10400 (2021, part O).

Regulation 6(a) prohibits smoking, eating, or drinking in areas other than the dining facility mentioned in regulation 5. Regulation 7(a) requires school principals (employees) to make available drinking water in visibly marked places. Finally, regulation 9 requires that every facility be maintained in a clean and hygienic manner that is safe and in a good state of repair (Lexis Nexis, 2021:174).

Once again, this question links to the literature that has stated South Africa has the highest crime rate related to crime and murder, and that this has spilled over into schools. School violence is increasing, and one such incident involved a 13-year old who was arrested for the murder of a class mate in the North West Province. A similar

incident occurred in the Eastern Cape, where a scholar stabbed another to death (Mogoathle, 2019). In 2022, two school deaths were reported in the Eastern Cape related to sport injuries (Hemmonsbey, 2022). These increasing school incidents have raised concern amongst parents, educators, and the South African public.

Selepe (2019) presented a concern regarding schools across South Africa that have been shut down due to unsafe buildings. Question 25 enquired whether the school was experiencing any facility problems, such as structural problems with the school buildings. The responses listed aspects of "*wall cracks in the school building. An engineering assessment has been conducted*" (Interview 1, "*cracks in the walls, broken tapes and loose stair railings*" (Interview 4*), "roof trusses that have collapsed. Still waiting for it to be repaired. The affected classes cannot be used*" (Interview 6),*"structural engineer assessment was conducted in 2019 after the Driehoek school incident. The structural aspects identified was repaired at the cost of R20 000.00*" (Interview 10), and *"The roof of the cross-walk students cross has collapsed. The roof trusses have broken due to water damage. A matter that was brought to the attention of the Department of Works in 2018. The collapsed roof was inspected in February 2020, and to date, nothing has been done except vacating the room till repaired*" (Interview 13). A full list of verbatim transcriptions can be reviewed in Annexure F.

In addition, the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 Section 12(5) require that the members of the executive council (MEC) ensure that the physical school facilities in public schools are accessible for disabled persons (RSA, 1996b:19 and 28). No reference or referral is made to any other facility aspect, nor have the FRs of the OHS Act No. 85 of 1993 or the Building Regulations (SANS 10400 of 2021) been referenced or referred to in the SASA No. 84 of 1996.

The responses are noted as having an equal distribution, where seven schools indicated experiencing structural problems with the school building, while the other seven schools indicated not having any structural problems. Responses from the schools reporting structural problems indicated that these facility issues have been listed and reported, and some schools are still awaiting assistance with repairs from the DBE.

Linking to the legislative requirements, question 26 relates to the use of temporary buildings. Schools dated pre-2000 may still be making use of temporary asbestos

classrooms. In 2019, almost 700 schools were reported to the National Health and Safety Body, the NIOH, regarding asbestos, where the DBE failed to manage these asbestos structures safely. The NIOH indicated that one in every eight schools in Gauteng contains asbestos, resulting in the exposure of asbestos fibre. This exposure to asbestos leads to a health risk, and the development over time of asbestosis is a deadly respiratory disease (Grant & Otter, 2017c; NIOH, 2017).

This was re-affirmed in 2021 when the NIOH indicated that asbestos is still prevalent in Gauteng schools. According to a list drafted in 2017 by the GDE, 243 of more than 2 000 public schools in Gauteng (most of them in townships) contain asbestos, resulting in exposing more than 100 000 educators and scholars (NIOH, 2017). A report released by the GDE in 2020, indicated the eradication of 29 entirely asbestos schools by November 2020. However, this report does not make mention of the 214 partial asbestos-containing schools where the GDE plans to remove the asbestos structures (NIOH, 2017). In 2021, it was noted that about 25 schools in Gauteng still contained asbestos structures, with 17 schools in the planning phase for asbestos removal, and with an additional eight schools in the implementation phase (Perraudin, 2019; Shange, 2021).

In South Africa, asbestos safety is regulated under the Asbestos Regulations (ARs) of 2020. Regulation 3 requires the identification of asbestos, where regulation 3(a) requires the identification of asbestos by a competent person as prescribed in the OHS Act No. 85 of 1993. Regulation 4 further requires an employer to ensure that a competent person draws up an asbestos inventory (in every school) and all identified asbestos factors are listed in the asbestos inventory. The requirements of the asbestos inventory are listed in regulation 4(3). Regulation 4(4) requires the review of the asbestos inventory by a competent person every two years or revised as required in relation to regulation 4(5). Regulations 4(8) and 4(9) stipulate the requirements for the removal of asbestos by a registered asbestos service provider and potential exposure to air-borne asbestos fibres. Regulation 4(10) requires that asbestos structures, as listed in the asbestos inventory, are clearly labelled with signage under regulation 20 (labelling and signage) (Lexis Nexis, 2021:209).

A complete discussion on the ARs can be found in Section 2.7.3. Question 26 examined the possible use of temporary (asbestos) buildings. The responses indicated that "…*there are plus-minus 16 temporary classrooms. Some of these*

classrooms have old asbestos panels that are of a poor to average state" (Interview 1), *"…make use of prefab classrooms (asbestos unknown)"* (Interview 4), and *"We use some prefab buildings as classrooms. According to my knowledge, these are not asbestos structures."* (Interview 10). Annexure F has a full list of responses.

Eleven of the 14 (78%) schools indicated not making use of temporary buildings. The other three schools indicated making use of wood structures (wendy houses) and other types of prefabricated structures, such as chromodeck.

Question 27 relates to where the identified asbestos building/equipment is being used in schools. The responses indicated that they were used as *"temporary classrooms. The old asbestos panels (±1-2 panels per classroom) have been reported as damaged and the school is awaiting feedback from the school district and GDE"* (Interview 1), *"wooden building (Wendy house). Structure is very old and we use it to keep old broken furniture and is not safe"* (Interview 8), and *"prefab building for classrooms and according to my knowledge these are not asbestos. This has been confirmed by the DoE"* (Interview 10).

Ten out of 14 schools (71.4%) indicated not having asbestos structures. Six responses indicated the use of additional temporary structures as classrooms and storage of old furniture, while the other participants did not indicate what the structures were used for. The condition of these structures was indicated as old and damaged. The next section of the interview guide examines the occupational health and safety legislation related to fire safety and fire equipment.

5.2.6   Section F: Occupational health and safety legislation: Fire safety and fire equipment

The OHS Act No. 85 of 1993, section 8(2)(a) requires of the school principal as the employer to provide a workplace that is safe and without risks to the health and safety of educators, scholars, and other persons. This will include the appointment of fire representatives and the supply of maintained fire equipment as prescribed in the Environmental Regulations for Workplaces (ERsW). The ERsW regulation 9 outlines the fire precautions and means of egress (escape routes), regulation 9(a) requires an emergency escape door from any room, passage, or staircase. Regulation 9(b) stipulates that these escape doors should be kept clear of any debris and be opened from inside to ensure a quick escape route. In addition, Regulation 9(2) requires that

an employer provides an adequate supply of fire equipment at strategic locations or as recommended by the fire chief of the local authority. Furthermore, the regulations require that the equipment should be well maintained and in good working condition (Lexis Nexis, 2021:10 and 162). Section F of the interview guide enquired into the legislative imperative of fire representative appointments in the school.

Question 28 enquired whether the school had appointed fire representatives. Seven of the 14 schools (50%) indicated that there were appointed fire representatives, indicating that "*twelve educators are appointed and also manage the fire equipment in terms of annual servicing*" (Interview 1), "*four to six teachers have been appointed. On the date of the Interview fire equipment was last serviced on 7/2/2019*" (Interview 2), "*in process of training 10 fire representatives. We service fire extinguishers annually and use Mercfire to do this*" (Interview 5), and "*make use of Academy fire systems related to its fire maintenance. On the date of the Interview fire equipment was last serviced in April 2019.*"

Question 29 links to the above question where legal compliance was determined related to the number of appointed fire representatives. As with the appointment of H&S representatives and first aiders, fire representatives make use of the ratio of 1:100 as prescribed in the OHS Act No. 85 of 1993, section 17. Table 5.11 outlines the responses to question 29.

Table 5.11: Calculation to determine the number of fire representatives

Interview	No. of educators	No. of scholars	Total	Ratio	No. of legal fire representatives	
1	125	1 700	1 825	1 825 ÷ 100	18.25	18
2	50	500	550	550 ÷ 100	5.5	6
3	30	500	530	530 ÷ 100	5.3	5
4	50	500	550	550 ÷ 100	5.5	6
5	50	500	550	550 ÷ 100	5.5	6
6	50	500	550	550 ÷ 100	5.5	6
7	50	500	550	550 ÷ 100	5.5	6
8	30	500	530	530 ÷ 100	5.3	5
9	30	500	530	530 ÷ 100	5.3	5
10	88	1 142	1 230	1 230÷ 100	12.39	12
11	140	1 950	2 109	2 109 ÷ 100	21.09	21
12	50	500	550	550 ÷ 100	5.5	6
13	50	500	550	550 ÷ 100	5.5	6
14	30	500	530	530 ÷ 100	5.3	5

Source: Researcher's own compilation

Table 5.11 was further analysed to determine the legal compliance of appointed fire representatives in relation to the legal requirement (Table 5.12).

Table 5.12: **Legal compliance to appointed fire representatives**

Interview	No. appointed fire representatives	Legal requirement of fire representatives	Compliance Non-compliance
1	12	18	Partial compliance
2	4-6	6	Non-compliance
3	No indication given	5	Non-compliance
4	0	6	Non-compliance
5	0	6	Non-compliance
6	3	6	Partial compliance
7	4-5	6	Partial compliance
8	0	5	Non-compliance
9	No indication given	5	Partial compliance
10	External contractor	12	Partial compliance
11	1	21	Partial compliance
12	0	6	Non-compliance
13	11	6	Compliance
14	0	5	Non-compliance

Source: Researcher's own compilation

Participant responses (Annexure F) are summarised below:

As noted from the responses above, eight of the 14 schools (57%) indicated they have at least one appointed fire representative: one school was legally compliant, and six schools partially compliant in relation to the calculation in Table 5.12. In addition, one school indicated using an external service provider. This is of concern as there is no trained fire representative on the premises should a fire break out to provide immediate assistance. In addition, the availability of fire representatives on-site would minimise damage to the school, not to mention saving lives. Five schools indicated not having appointed fire representatives and two schools gave no indication regarding this appointment. A full list of responses and calculations can be viewed in Annexure F.

Section G of the interview guide allowed the participants to state any additional safety concerns or comments not addressed in the interview guide.

5.2.7 Section G: Occupational health and safety: concerns and comments

The final section of the interview guide made use of three open-ended questions that allowed participants to state any safety concerns not mentioned earlier, including any aspects related to school safety which could be brought to the attention of the GDE,

and any final remarks or questions to be considered by the researcher. The first open-ended question (question 30) allowed participants to state any concerns not mentioned in the interview guide.

Three participants indicated not having any safety concerns that were not addressed in the interview guide. Safety aspects mentioned by participants included school noise (Interview 2) and Covid-19 screening and sanitising of scholars and educators (Interviews 3, 8 and 12). Another safety concern mentioned (Interview 4) was that of unattended garden equipment. The participants stated that scholars would be scholars, meaning that some scholars will play/tamper with the equipment, resulting in injuries.

An interesting comment made (Interview 13) relates to the lack of OHS understanding in the school, where educators have been led to believe that the SASA No. 84 of 1996 is the overriding authority. This comment is a concern in light of the fact that school safety as related to the health and safety of educators and scholars, and as legislated in the OHS Act No. 85 of 1993 is not mentioned, nor referred to in the SASA No. 84 of 1996. Furthermore, this statement confirms the secondary objective, namely, to identify reasons and/or challenges why legislated safety is not implemented in selected public secondary schools in Gauteng.

In addition, some participants felt that safety was not the educator's responsibility and that it is too much for an educator to manage. The participant (Interview 1) thought that a competent safety person should be appointed. Legislation is clear in this regard where the OHS Act No. 85 of 1993, section 14(a) states that health and safety is the responsibility of every person who may be affected by their acts or omissions or that of another person (Lexis Nexis, 2021:11). One school (Interview 6) has met with their security provider to determine what response is needed in specific situations, such as armed intruders, to avoid a possible shoot-out. The school has also developed specific evacuations for the different scenarios.

Concerns raised that do not have a safety connection included aspects of security, such as school access by external parties (Interviews 1 and 10) and the use of public transport by scholars during Covid-19 (Interviews 3 and 7). The safety of the municipal parking area was mentioned by a participant (Interview 6) enquiring who was responsible for these areas as well as the safety of staff on-duty outside the school

perimeter. These two aspects are grey areas (poorly defined/demarcated) within safety and require a more in-depth investigation. Another concern raised (interview 9) was the community impact on the general safety of schools related to burglaries and theft. This links to security safety and not safety within the prescript of the OHS Act No. 85 of 1993. The same participant (interview 9) raised a concern about learners not being cared for, resulting in concentration problems. This will require additional investigation within the educational and social/psychological environment. In addition, sports events were listed as a concern related to the external access and security of the school (Interview 10).

The next open-ended question (question 31) allowed participants to relate any school safety aspects that educators would want to bring to the attention of the GDE. Five participants (Interviews 2, 5, 6, 7 and 14) stated they did not have anything that they needed to bring to the attention of the GDE. Aspects of safety listed in question 31 include the appointment of a competent safety professional (Interview 1). In addition, it was mentioned (Interview 9) that schools need to become more vigilant regarding H&S to ensure that schools act preventatively. Furthermore, it was stated that schools (Interviews 10 and 13) require accredited formal H&S training for educators. In addition, H&S training for scholars would give scholars an advantage in the working environment. Non-safety-related aspects included school security, safety in municipal parking areas, and staff on-duty outside the school premises (interview 3, 8 and 12).

The final question (question 32) allowed participants to add any final remarks or questions they needed the researcher to consider. Six of the 14 participants (Interviews 2, 4, 5, 6, 7 and 14) had no additional comments. Once again, the aspect of appointing a competent safety professional was mentioned, and the fact that schools need to become more vigilant about safety to be able to act more proactively (Interviews 1 and 9). In addition, the aspect of formal safety training was again mentioned for both educators and scholars (Interview 10). A participant (Interview 11) stated that "*The GDE should play a greater oversight role in ensuring that schools comply with all acts pertaining to H&S protocols".*

The researcher was thanked by three participants (Interviews 3, 8 and 12), stating that they were happy to be part of the study and that the researcher could help with the health and safety of the DBE. In conclusion, a comment was made (Interview 13) related to the 'reasonable man' principle (a benchmark of behaviour to determine

whether something is reasonable or not) and the fact that educators have little H&S knowledge related to the 'reasonable man' principle. This links to the lack of legislative knowledge and training related to the legislative concept 'reasonable practicable'.

From the responses given in the final section of the interview guide, it is evident that although safety and security are seen as important in a school, it is not necessarily implemented according to the 'letter of the law' concerning the OHS Act No. 85 of 1993. Even though schools are managed as a system, there appears to be no integrated and holistic safety system in schools, and these systems appear to be managed in silos for the purpose of teaching and educating of scholars.

5.3   QUALITATIVE RESEARCH APPROACH

Thematic analysis is a qualitative research method for the formulation of themes and patterns in the research. It is a process of quantifying (enumerated) analysis of qualitative data reporting. It is defined by Neuendorf (2019:213) as "a way of seeing and making sense of unrelated material." The thematic analysis approach can be used when trying to determine people's views, opinions, knowledge, and experiences from qualitative data, such as interviews. A theme is described as an abstract unit that provides meaning and identity to a person's experience. It captures and unifies the nature of the experience into a meaningful whole. Themes are developed by bringing together the person's ideas and experiences that may have been meaningless when viewed on its own. When themes are brought together, they link significant concepts, thereby giving a more precise picture of the data.

The use of themes in qualitative research allows the researcher to use his/her own judgment when developing themes. The literature suggests that the best place to start with themes is by creating predefined codes to guide the analysis (Newcomer, Hatry & Wholey, 2015:570; Nowell *et al.,* 2017:8; Caulfield, 2019). In addition, thematic analysis allows the researcher some flexibility to modify the research to the literature evidence. This further suggests that thematic analysis is helpful when examining the perspectives from different participants, as it highlights both similarities and differences and may generate unexpected insight into the study (Nowell *et al.,* 2017:2).

In addition, thematic analysis allows the researcher to see the scope and range of the data set (Vaismoradi & Snelgrove, 2019:7). It allows the researcher to code and

organise the data into themes. The coding of data allows the study to represent quoted text with specified codes that are used across the interview data (Neuendorf, 2019:211). Archer (2018:10) stated that thematic analysis is personal and unique to the researcher.

Revision is essential as the process is not linear, but rather repetitive, and the researcher continually moves between the collected data, analysing the data and making sense of the analysis. The thematic analysis process consists of six phases, as illustrated in Figure 5.3.
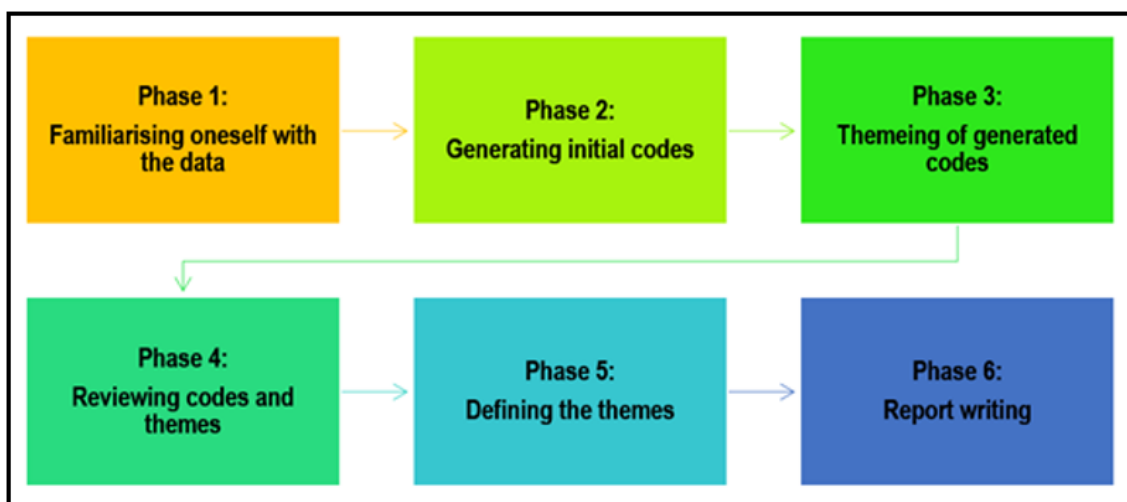
Figure 5.3:   Thematic analysis steps

Source: Adapted from Neuendorf, 2019 (213)

During data cleaning analysis for the current study, word frequencies were conducted with the assistance of the data analyst. This allowed for a deeper and more detailed understanding of how participants viewed the school safety environment. Word analysis allowed the researcher to identify patterns and link themes that emerged from the data (Vaismoradi & Snelgrove, 2019:2). During this process, irrelevant words were removed so that only keywords of importance remained. All Interviews were used to determine pertinent word frequencies.

Word frequencies with high values depict the importance to the participant. The most used word frequency (grouped in accordance with similarities) depicted in Annexure E-1 is school/schools, followed by educators, teachers and staff. Safety is listed third on the list and is followed by learners/scholars. A critical frequency related to the OHS Act No. 85 of 1993 is that of legal appointments. In addition, the word frequency for

principal's responsibility had a low rating, measured at a frequency rating of 435, where accountability was rated at the bottom of the list, with a frequency rating of 20. Security and securities had a frequency rating of 394, together with occupational health and safety (OHS) with a frequency rating of 343. A consolidated list of relevant (school safety) word frequencies of the data in numerical value sequence can be viewed in Annexure E-1.

Although these high-value word frequencies indicate the importance to the participants, they do not necessarily represent the study's importance. Low-value word frequencies could inherently signify a lack of responsibility, management, safety knowledge and accountability. This is highlighted by the low value given to the importance of a safety policy (rating of 97). In addition, school injuries (rating of 210) and the seriousness of injuries (rating of 104), versus safety investigations (rating of 24) of these injuries and incidents are of grave concern.

Furthermore, first aiders were rated at the lower-end of the high frequencies. Similarly, concern is raised regarding the frequency of inspections versus the number of incidents, accidents and (serious) injuries. A concern is raised related to the low rating of safety investigations (rating of 24) versus the higher number of incidents, accidents, and injuries.

Reflecting on the literature and the media reports related to the status of asbestos in schools, the data analysis gives conflicting results, as schools indicated having little to no asbestos. Similarly, low values were given to maintenance (rating of 129), school premises (rating of 98), and safety committees (rating of 200). A review of these low word frequency values clarifies the lack of safety commitment and accountability, management, and an understanding of the legislative imperative of the OHS Act No. 85 of 1993.

5.3.1   Code lists and code groups

In addition to the word frequencies, Atlas.ti identifies code lists as generated from the interviews. It allowed for the identification of words or phrases that are sorted and re-grouped into a selected category (Fraenkel & Wallen, 2009:186, 482). Coding is part of the analysis process where words and phrases are linked to specific quotations within the interviews. These codes are repeated in all interviews, allowing for the formation of a code list (Theron, 2015:4).

Several recurring codes were used across the interview data (codes can be used more than once in the different code groups), and as such, the most frequently used codes were related to lacking areas, such as a lack of OHS accountability and responsibly, OHS awareness, leadership, and H&S knowledge. A full list of code groups and frequencies can be viewed in Annexure E-2.

This code list was used to develop a visual illustration, referred to as a word cloud (Figure 5.5). Throughout the process of qualitative data analysis, it may be good to make use of memoing. This allowed the researcher to record reflective notes about information learned from the data.

5.3.2   Memoing in Atlas.ti

A function in Atlas.ti allowed the researcher to add memos to the codes, which helps the researcher to note ideas and link to connect data, questions and quotations (Archer *et al.*, 2017:38). Memos (Figure 5.4) helped the researcher to identify common themes across the interviews to become familiar with the text by adding comments that are linked to the research study. In addition, memoing can be used as a journal that allows other researchers coding on the same topic to know what the researcher did and what still needs to be completed/researched. In Atlas.ti, a memo can be linked to a specific code or quotation and acts as a reminder (diary) to the researcher to follow up on a specific aspect/item (Archer, 2018:36-37).
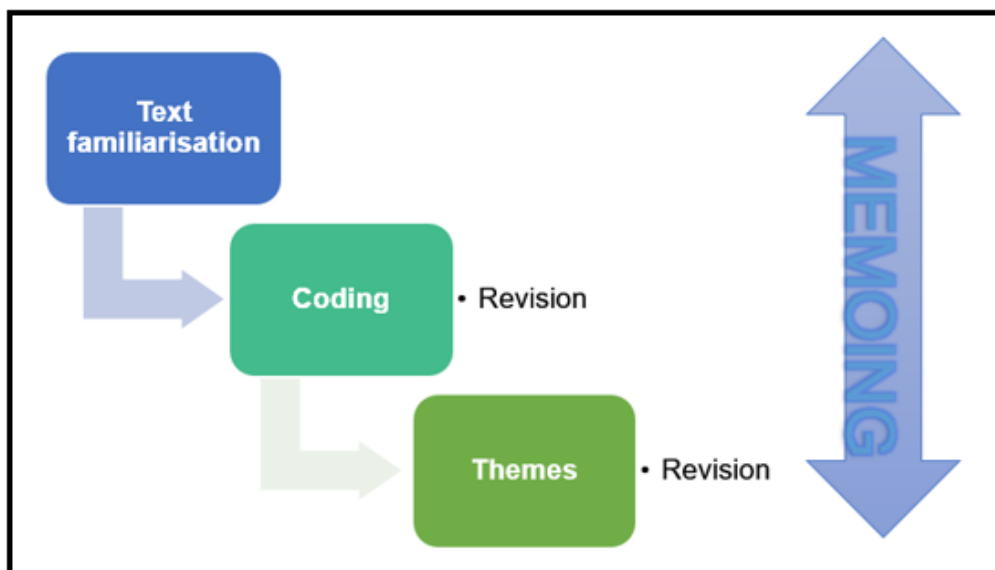
Figure 5.4:   Memoing in Atlas.ti

Source: Adapted from Archer (2018:II)

Memos explore and reflect on the coding and theming of data to indicate accountability and responsibility, and the gap in policy concerning safety challenges in schools. The researcher made use of memoing as a reminder for follow-up actions requiring attention. Memoing was also used to link the legislative requirements of the OHS Act No. 85 of 1993 to specific codes and quotations, and the linkage of literature review references used. This assisted the researcher with the write-up of the data analysis and findings chapters.

5.3.3   Word cloud

Word clouds are dependent on a complete account of observations and reinforce the word recognition to analyse the thematic output. Word clouds can be used in different manners to enhance important concepts identified by the participant, and to immediately identify the theme being communicated (Bletzer, 2015:4; Henderson & Evergreen, 2020). A word cloud (Figure 5.5) is used to illustrate the most frequently used words in a visual text. In addition, it provides an immediate overview of what was examined. The larger the font in a word cloud, the more frequently the word has been used, and similarly, words in a smaller font have been used less frequently. In addition, the word cloud uses different word forms to incorporate it under one expressive word in the word cloud (Atensteadt, 2017:231; Dimlo, Kumar & Chandana, 2020:1591).

Atlas.ti makes use of word frequencies (Annexure E-1) to develop a word cloud (Figure 5.5), where words that were used more often, such as 'school', are depicted in a larger font. The next most frequently used word was 'safety', followed by 'persons', 'Act', 'educators', and 'learners'. As the font size gets smaller, it indicates that the word has been used less, such as 'OHS' that has been used only 60 times and 'injuries' 19 times. It can thus be concluded that the word cloud and word frequencies correlate concerning the importance of words in the study.

Figure 5.5:   Word cloud

Source: Researcher's own compilation from Atlas.ti version 9 software

The following section discusses the data saturation for the study.

5.3.4   Data saturation

Data saturation is the point in the analysis of data when any additional data does not provide new insight into the study (Saunders *et al.,* 2019:315, 801). Data saturation is achieved when no new codes can be added. In this study, data saturation was reached with Interview 9, where 70 codes had been created across the first nine interviews, as illustrated in Figure 5.8.
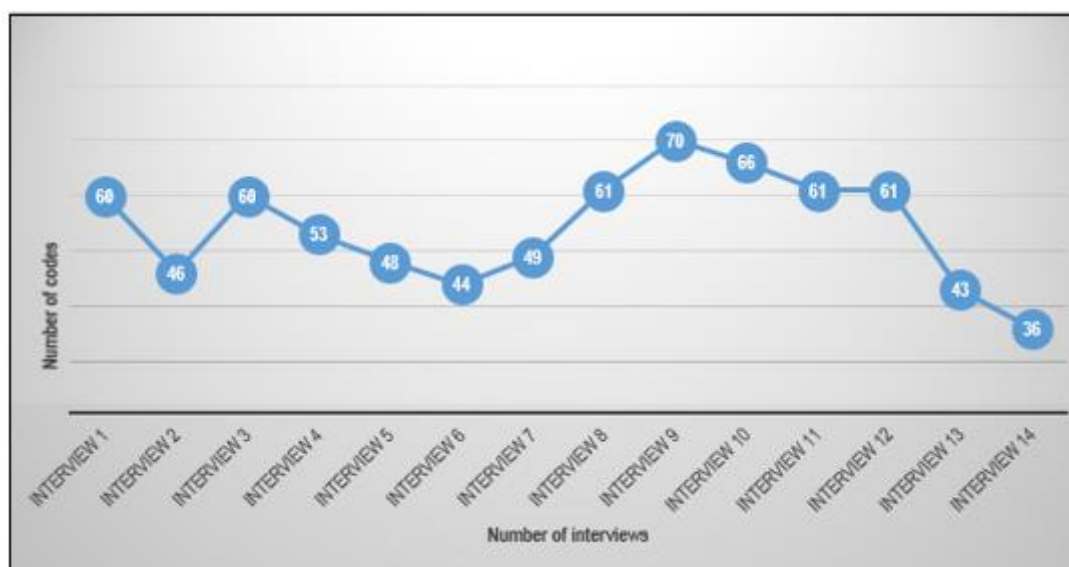
Figure 5.6:   Data saturation

Source: Researcher's own compilation

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5.4   CONCLUSION

This chapter presented a discussion of the qualitative data analysis (Phase 1). Section A explored the sample detail of 14 participants from Gauteng public secondary schools. The interview guide was used to ascertain the participant's safety compliance and knowledge concerning the jurisprudence theory of the OHS Act No. 85 of 1993. It is clear from the data analysis that the participants felt that they did not have sufficient safety knowledge and that safety compliance is not effectively implemented in schools. In some schools, the participants felt that safety was not their concern and suggested the appointment of a dedicated safety professional. It was further evident that the participants were of the opinion that safety was included in the SASA No. 84 of 1996. It would appear that participants see the OHS Act No. 85 of 1993 as an additional burden and not the responsibility of school educators. The next chapter presents the data analysis for the quantitative research (Phase 2).

CHAPTER 6:
PHASE 2: QUANTITATIVE DATA ANALYSIS AND RESULTS

CHAPTER 5. OVERVIEW

- **INTRODUCTION**
- **PHASE 2: QUANTITATIVE RESEARCH**
  - Descriptive statistics
  - Univariate statistics
  - Bivariate cross-functional tabulation
  - Inferential statistics
- **QUANTITATIVE DATA ANALYSIS**
  - Section A: Sample detail
  - Section B: OHS legislation: Knowledge
  - Section C: OHS legislation: Compliance
  - Section D: OHS legislation: Incidents, accidents, injuries, and first aid
  - Section E: OHS legislation: Facilities
  - Section F: OHS legislation: Fire safety and fire equipment
  - Section G: OHS legislation: Noise
  - Section H: OHS legislation: Thermal, ventilation and illumination
  - Section I: OHS Comments and concerns
- **CONCLUSION**

6.1   INTRODUCTION

The previous chapter on data analysis and findings explored the first phase of the study in terms of the qualitative data and interviews that were conducted. This chapter presents a discussion of the quantitative data that formed the second phase of data analysis. This chapter scrutinises the data to answer the research questions and objectives. This chapter presents the quantitative data collected through questionnaires distributed to participants (educators in selected secondary schools) in Gauteng. The data collected from the questionnaires was guided by the research objectives, research questions and hypotheses, as previously indicated in Chapter 1, Table 1.1. As indicated in the previous chapter, the primary objective was to determine the nature and extent of safety implemented in schools by exploring the legal imperative of the OHS Act No. 85 of 1993. The secondary objectives were to identify safety risks, practices, reasons and challenges why legislated safety had not been implemented.

This chapter explores the quantitative data analysis and mathematical descriptive statistics that describe and present the study's statistical features. Phase 2 of the study discusses the data that was collected from the questionnaire that was divided into nine sections across 72 questions.

6.2   PHASE 2: QUANTITATIVE RESEARCH

Quantitative research collects and analyses numerical data to find averages, test causal relationships, make predictions, and generalise results to a broader population. This study made use of descriptive quantitative research, where descriptive statistics describes the data collected (Bhandari, 2020b). After completion of data analysis, the next step is a statistical analysis of data to describe the characteristics of the participants' responses. Statistics is a mathematical technique used for representing data in numerical terms. It allows for the assessment of the validity and reliability of the data collected to indicate the accuracy and consistency of the research methodology used (Knekta, Runyon, Eddy, 2019).

6.2.1   Descriptive statistics

Descriptive statistics summarises the research data and includes variability and averages (mean) and the study's most frequent ratings (mode). It is used to describe the features of the data to simplify a large amount of data into a manageable form. Developing statistical information about each variable is a means of determining what information is valid for the study. Descriptive research includes data that describes events, and then organises, tabulates and describes the data. The uniqueness of descriptive data allows for the use of a single or several variables. It is an essential phase of conducting statistical data analysis as it helps the researcher to achieve conclusions and identify similarities amongst variables (Nassaji, 2015:129; Rawat, 2021).

Descriptive statistics is widely used as it describes the collected data (YouTube, 2017; Opie & Brown, 2019:17, 275). Research data is collected through different sources and manipulated through a data process (Figure 6.1). For the purpose of the current study, the data text was converted (data coding) by the researcher into a numerical format (data transformation) on a Excel spreadsheet. This spreadsheet was then used to input the data (data entry) into a statistical software package, namely, the Statistical Software Package for Social Science (SPSS).

SPSS is a graphical user interphase data analysis package that is used to manipulate, analyse and present data for research purposes. All research has missing data where participants do not answer questions. This is an inherent part of any study. These missing data sets may be detected automatically by statistical software packages, while others require the researcher to depict these missing values with a numerical code.

For the purposes of this study, the researcher allocated a numerical code to missing values in the Excel spreadsheet before importing them into SPSS (Landau & Everitt, 2006:3, Bhattacherjee, 2012:119).
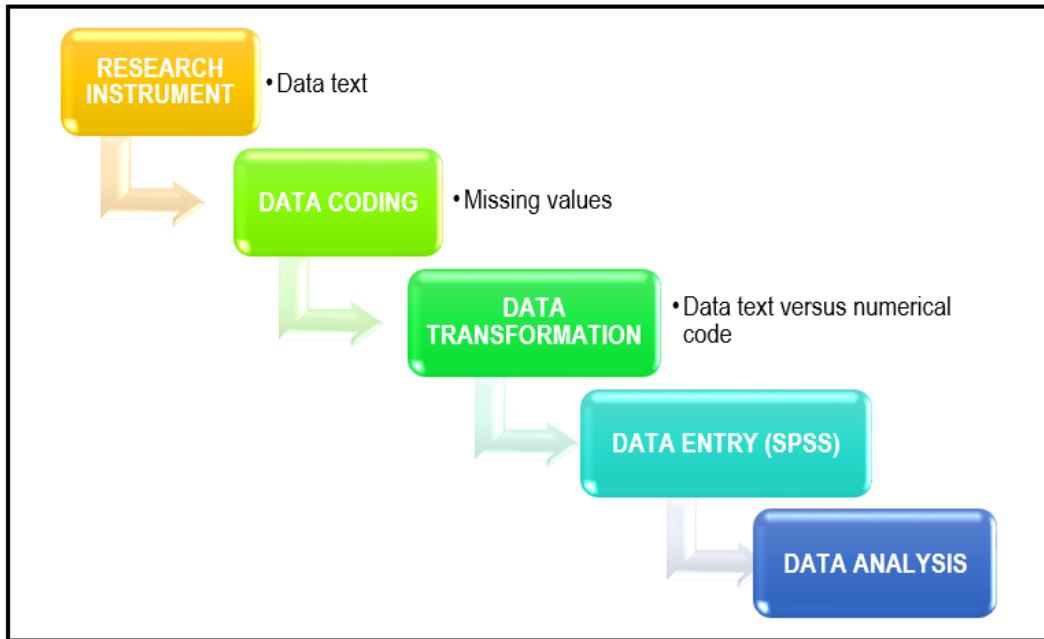
Figure 6.1: Data preparation process

Source: Researcher's own compilation

Descriptive research investigated the research problem to validate the legislative imperative of safety implementation in public secondary schools in Gauteng. Through the use of descriptive analysis, the researcher is able to perform an in-depth analysis of the variables to enable an informed conclusion.

Data coding is descriptive, allowing the researcher to move from the data text to create a structure for data analysis (Hedlund-de Witt, 2013:2; Elliot, 2018:2852; Yi, 2018). Developing statistical information about each variable is a means of determining what information is valid for the study. Descriptive statistics is the most widely used as it describes the collected data under four levels of measurements, namely, nominal, ordinal, interval, and ratio (Opie & Brown, 2019:17, 275), as outlined in Section 6.2.2. The study made use of the descriptive statistics as discussed below.

6.2.1.1 Univariate statistics

A univariate variable analysis considers one variable at a time, such as policy, responsibility, safety, security, incidents, and injuries, to mention a few. The frequency distribution indicates the number/percentage of participants that fall into the different categories (Kent, 2015:101; Trochim, 2022:121). The researcher used frequency distribution in Section A (sampling data) of the questionnaire (Annexure B-1). Central tendency uses three estimations, namely, mean, median, and mode (Bhattacherjee,

2012:121), that were used in the questionnaire in Sections B to I. In addition, the researcher used an ordinal categorisation to classify and introduce order to the data by utilising a Likert scale (Cohen, Manion & Morrison, 2018:726).

6.2.1.2 Bivariate cross-functional tabulation

Bivariate data analysis is one of the simplest forms of statistical analysis that is used to determine a relationship between two variables (Figure 6.2).

Section	Description
Section A	• Univariate varialble to determine sample detail
Section B	• Bivariant analysis of partipant knowledge related to the OHS Act No. 85 of 1993 and safety policy
Secion C	• Bivariant analysis of partipant compliance to the OHS Act No. 85 of 1993
Section D	• Bivariant analysis of ations taken during accidnts, incidents, injuries and first aid compliance
Section E	• Descriptive analysis of the school facility management in relation to the prescripts of the OHS Act No. 85 of 1993
Section F	• Descriptive analysis of fire safety and fire equipment in relation to prescripts of the OHS Act No. 85 of 1993
Section G	• Bivariant analysis of noise compliance in the school within specific environments
Section H	• Descriptive analysis of thermal, ventilation and illuimnation in relation to prescripts of the OHS Act No. 85 of 1993
Section I	• General concerns and comments

Figure 6.2:   Descriptive analysis: Univariate versus bivariate

Source: Researcher's own compilation

Tao and Thill (2019:2055) argued that although there have been advances in the flow of analytical data, there is still a lack of literature related to bivariate and multivariate analytical patterns. Therefore, bivariate analysis was used in the study to determine a relationship between two ordinal variables in the questionnaire. For example, the bivariate analysis determined a correlation between the educator's OHS knowledge (Section A) and their responsibilities as prescribed by the OHS Act No. 85 of 1993. It included the measurement of internal consistency in determining the criteria that

measure the same underlying attributes such as the educator's knowledge of the OHS Act No. 85 of 1993 and school safety policy.

The structured, self-completing questionnaire (Annexure B-1) was developed for participants (educators) and was divided into nine sections using 70 close-ended and three open-ended questions. The questionnaire focused on safety legislative aspects and opinions related to school safety. As alluded to, the study aimed to determine to the prescripts of implemented safety in the selected public secondary schools. In addition, the questionnaire aimed to determine to what extent participants viewed safety as having been implemented. The final section of the questionnaire explored safety concerns and comments that participants experienced regarding OHS. The questionnaire was comprised of a selection of rating categories as summarised in Annexure B-2.

Descriptive statistics refers to a statistical description and presentation of the constructs, and is followed by inferential statistics that allow the researcher to confirm the purpose of the study.

6.2.2 Inferential statistics

Researchers use inferential statistics to conclude variable associations and to make inferences from data about the larger population for generalisation. In addition, inferential statistics makes use of probabilities (a mathematical tool used to study randomness) to determine whether the conclusions reached are correct. The study used inferential statistics pertaining Pearson Chi-Square tests to test interdependence and Kendall-tau to test the hypotheses. Cross-tabulation was used to analyse and compare the results of one or more variables and was used in combination with the Pearson Chi-Square test of independence to determine statistical significance between two categorial variables. The Chi-Square test of independence, symbolised as χ^2 is based on a cross-tabulation that equates the observed frequencies of the categories with values that might be predicted if there is no relationship between the variables used. With cross-tabulation and Chi-Square test of independence there may be several effective statistical sizes where the most frequently used 'effective size' is the Phi coefficient that ranges between 0 and 1, where the higher the value the stronger the association is between the two variables (Illowsky & Dean, 2013; Pallant, 2020:225, 228; DeFranzo, 2022). As indicated, Kendall tau-b (T_b) is a non-parametric

correlation coefficient used to determine a relationship between two or more ordinal and continuous variables to determine a degree of agreement (Cohen, Manion & Morrison, 2018:7566).

The researcher requested assistance from a statistician from Unisa to achieve the statistical interface. In quantitative research (Figure 6.3) the nominal scale is the simplest and describes variables that do not have a natural order, such as the school location or types of meetings. An ordinal scale has an order, however, the order does not matter, such as questions that have a yes or no, or like or dislike answers. Interval scales have order, and allow the determination between a variable, such as decibel (dBA) used for noise rating, or Celsius used to measure temperature variance. A ratio rating scale has similar properties as that of interval ratio; however, the variable equals zero, meaning there is no variable such as a noise rating of zero (Bhattacherjee, 2012:135; Oller, 2014; Dalati, 2018; GraphPad, 2019).
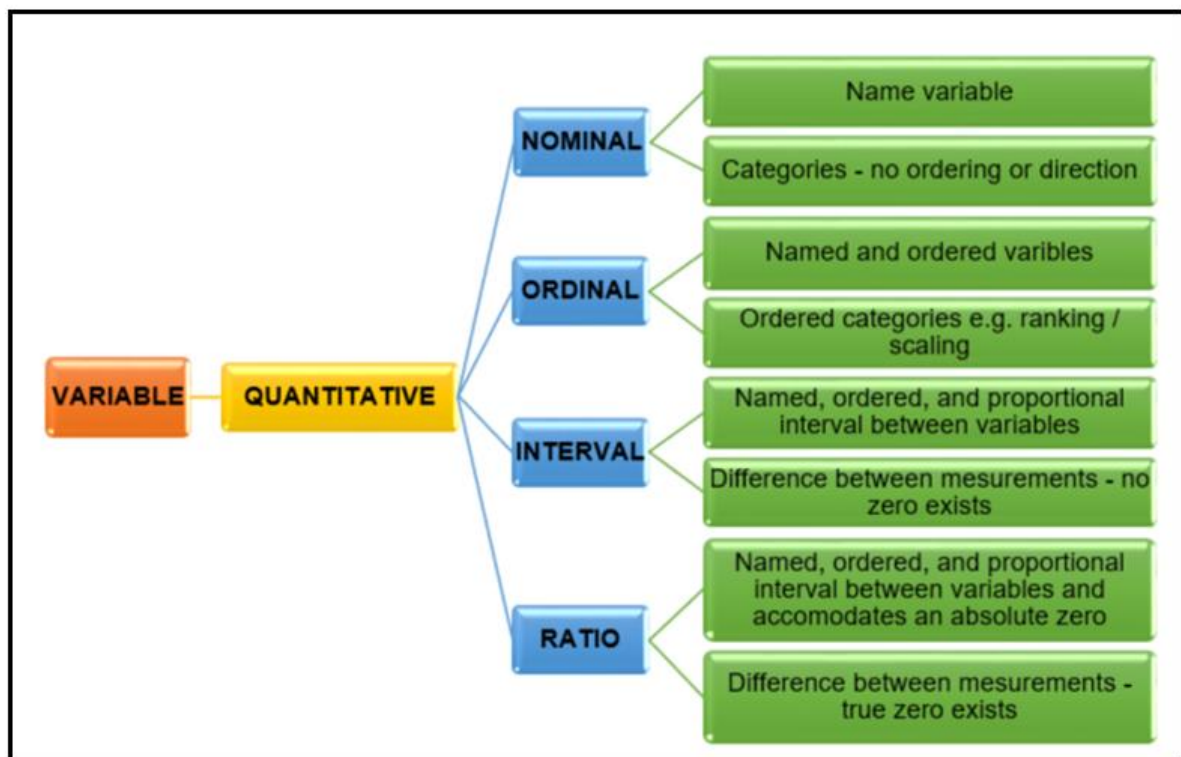
Figure 6.3:   Levels of measurements

Source: Researcher's own compilation

Nominal and ordinal ratio scales were used to interpret the quantitative data. This provided an opportunity in the study to use data with no numerical value (nominal ratio scales). Ordinal scales were used to determine the participant's safety knowledge and

barriers towards safety compliance, while ratio scales were used to compare implemented safety versus the legislated safety requirements

The primary data collected from the questionnaires was analysed by a computer program using SPSS which is a graphical user interphase data analysis package that is used to manipulate, analyse and present data for research purposes (Landau & Everitt, 2006; You Tube, 2017; IBM, 2021c:1).

Raw data from the questionnaires required coding by the researcher to be entered into SPSS. Responses from the questionnaire were exported into an Excel spreadsheet where the researcher allocated numerical values to the specific responses given by participants. The Excel spreadsheet was shared with the statistician who imported the data into the SPSS software. The statistician assisted with data verification to ensure that the data was correct, clean, and addressed missing values. Through the data verification, the statistician identified a discrepancy between the response given in the questionnaire related to "uncertain" and "I don't know" used as a response to questions. A decision taken by the statistician and researcher was to combine both "uncertain" and "don't know" and to calculate it as one data set. The quantitative data analysis of each of the sections in the questionnaire is discussed below.

6.3   QUANTITATIVE DATA ANALYSIS

This section presents the results pertaining to quantitative data analysis collected through questionnaires distributed to educators in selected secondary schools in Gauteng. The data collected from the questionnaires was guided by the research objectives and research questions as indicated in Chapter 1, Table 1.1. The primary objective was to explore the legal imperative of the OHS Act No. 85 of 1993 to establish the nature and extent of the implementation of legislated school safety.

6.3.1   Section A: Sampling detail

Section A of the questionnaire asked four questions related to school location, the rank/post level of the educator (participant), period employed at the school, and if employed longer than six months, was safety awareness training received prior to commencing employment at the school.

Question 1 of the questionnaire listed 15 school districts in Gauteng. The Tshwane South district submitted the highest number of completed questionnaires, with 97 questionnaires. The Gauteng North district followed with 40 questionnaire submissions. The Gauteng West district had 20 questionnaire submissions, and the Ekurhuleni North district had 18 submissions. There were 17 questionnaire submissions from the Gauteng South district, followed by 16 submissions from the Tshwane North district. The Ekurhuleni South district had 10 submissions, with seven submissions from Gauteng East. The remaining districts had between one and two questionnaire submissions from each, with no submission from Johannesburg East district, as illustrated in Figure 6.4.
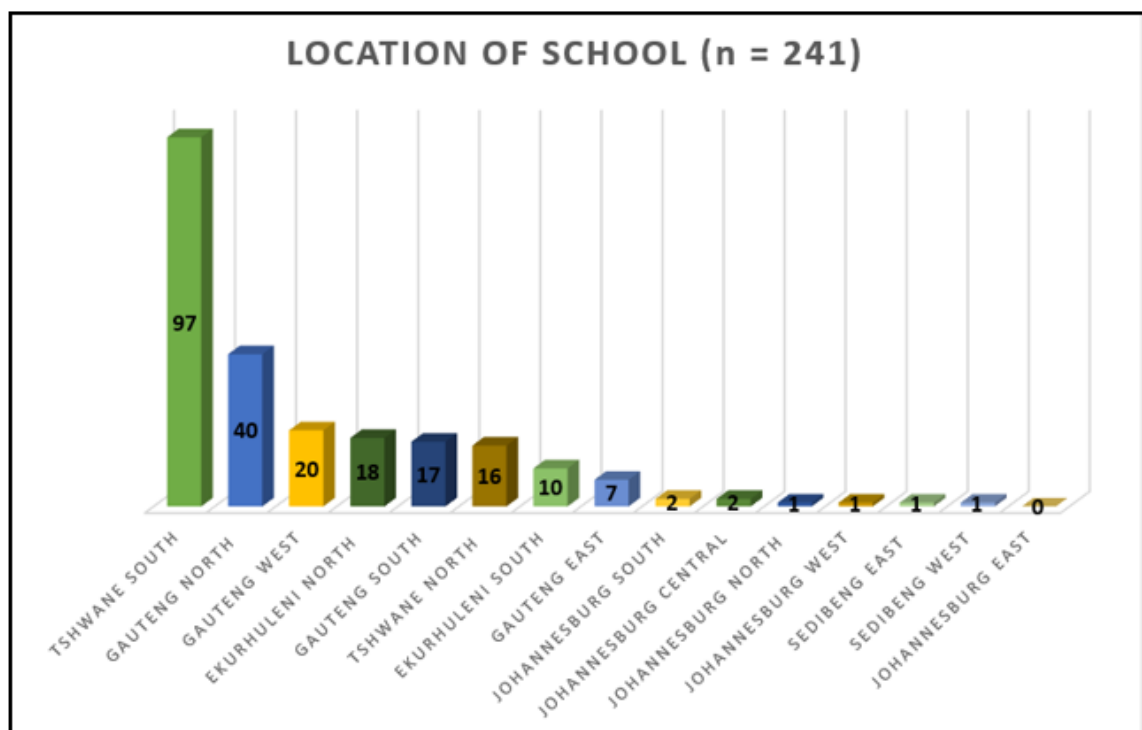
Figure 6.4:   Location of schools

Source: Researcher's own compilation

Question 2 established the rank/post level of the participants to ensure that only educators completed the questionnaire, thereby excluding non-educators from the study. As illustrated in Figure 6.5, 185 (76.7%) educators completed the questionnaire, followed by 22 (9.1%) HoDs. Eleven (4.5%) school principals or deputy head principals, and 11 (4.5%) senior educators completed the questionnaire. In 12 (4.9%) questionnaires, the participants did not include a rank/post level. However, the

researcher still used these questionnaires as the subsequent questions were answered.
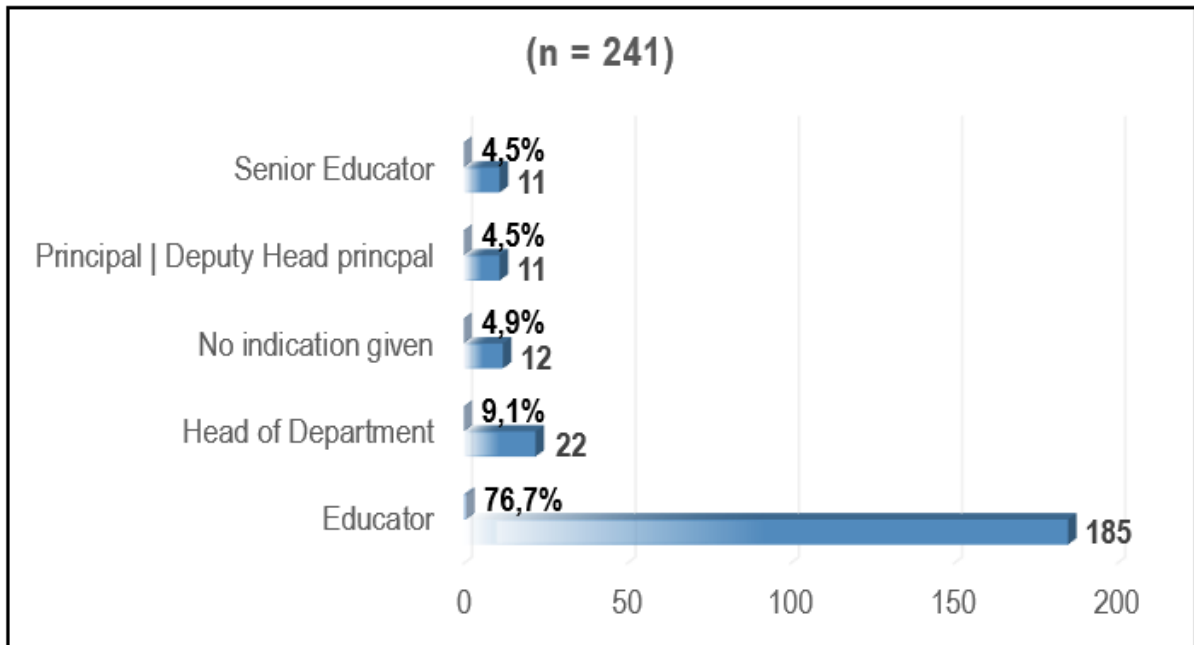
Figure 6.5:   Rank/post level of participants

Source: Researcher's own compilation

Question 3 required participants to select how long they have been employed at the school to gain an understanding of the participants' knowledge related to the school safety policies.

Section A: Period of employment at the school

As illustrated in Figure 6.6, 74 (30.7%) participants have been employed for more than 10 years. This should imply that these participants should have good to excellent knowledge of school management and its policies. The next highest employment period was between one and two years, with 60 (24.9%) participants. This was followed by between three and four years (34 participants – 14.1%) and between five and six years (30 participants – 12.4%). Twenty-one (8.7%) participants indicated being employed for between seven and eight years, with 12 (4.9%) participants employed between seven and 12 months. Nine (3.7%) participants were employed for between one and six months, and one (0.4%) participant has been employed for between nine and 10 years.

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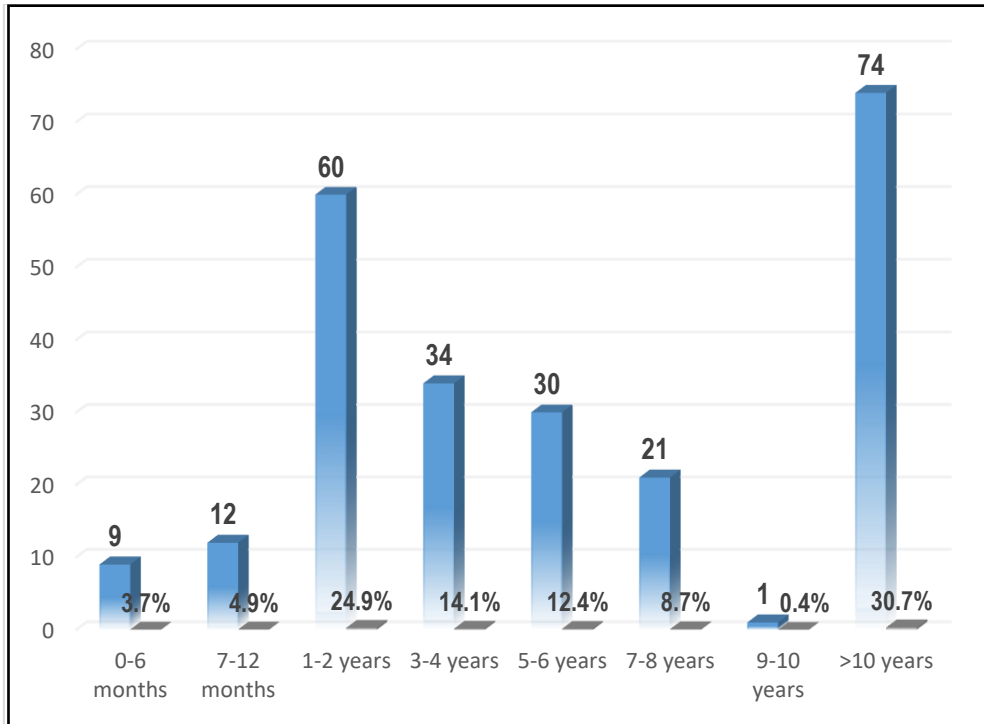
Figure 6.6: Period of employment at the school

Source: Researcher's own compilation

The final question (question 4) in Section A determined how many staff members were employed for less than six months at the school, and whether awareness training was received when they began working at the school. Of the participants who answered the question, 40 (43.7%) did not receive H&S training, and 31 (56.3%) indicated having received H&S training, as illustrated in Figure 6.7.
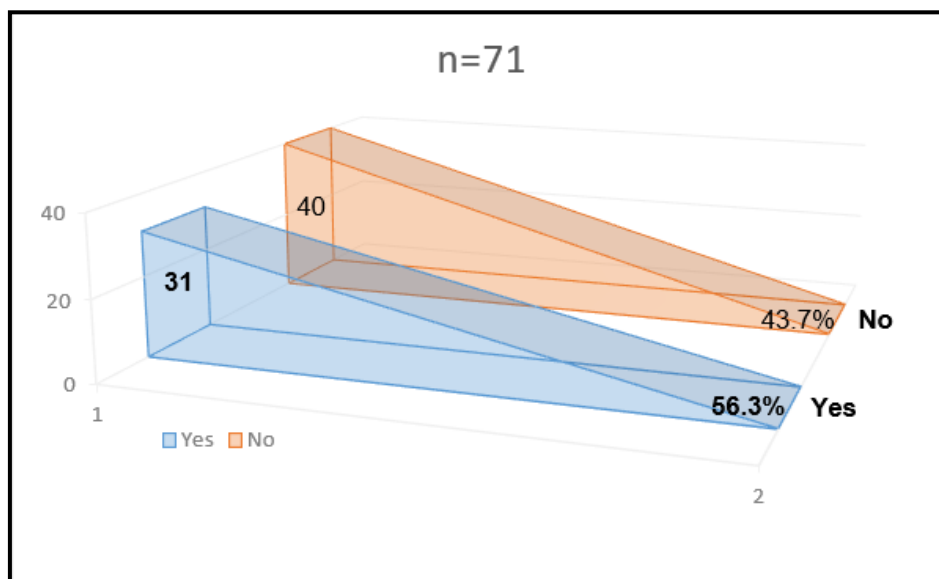
Figure 6.7: Health and safety (H&S) training if employed less than six months

Source: Researcher's own compilation

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It is noted from the responses in Figure 6.7 that almost 13% of the participants indicated that they had received H&S awareness training. The type of training received by participants may require further investigation and research. The data from Section B allowed the researcher to determine the legal imperative of the OHS Act No. 85 of 1993 versus the SASA No. 84 of 1996. As indicated in Chapter 5, Section 5.2.2, the lack of safety within a school could lead to hazards, dangers and risks (Themane & Osher, 2014:3). Section B of the questionnaire examined the participants' knowledge and understanding of the OHS Act No. 85 of 1993.

6.3.2   Section B: Occupational health and safety legislation: Knowledge

Section B investigates H$_1$ to determine if there is a relationship between the knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety. Question 5 of the questionnaire (Annexure B-2) enquired from participants whether they had heard of the OHS Act No. 85 of 1993. It is noted in Table 6.1 that 168 (69.7%) of participants indicated that they had heard of the OHS Act No. 85 of 1993, 51 (21.2%) indicated that they had not heard of the OHS Act No. 85 of 1993. In addition, 22 (9.1%) indicated uncertain. From the descriptive statistical analysis the mean is calculated at 1.39 with a standard deviation at 0.650, meaning there is a small deviation between the data points (Table 6.1).

Table 6.1:   **Occupational Health and Safety (OHS) Act No. 84 of 1933**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	168	69.7	69.7	69.7
	No	51	21.2	21.2	90.9
	Uncertain	22	9.1	9.1	100.0
	Total	241	100.0	100.0	

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Q7 Have you heard of the Occupational Health and Safety (OHS) Act No. 85 of 1933	241	1	3	1.39	.650
Valid N (listwise)	241				

Source: IBM (2021b)

Although 69.7% of the participants indicated having heard of the OHS Act No. 85 of 1993, it does not inherently mean that these participants have an in-depth knowledge

of the legislated content of the OHS Act No. 85 of 1993. The participants' knowledge was explored through further questioning.

Comparing to the same question asked in the interview guide (Section 5.2.2, question 5), it was noted that school management (principals, deputy head principals and HoDs) indicated not having sufficient understanding and knowledge pertaining to the OHS Act No. 85 of 1993. Furthermore, this is confirmed in the literature, where it was stated that there was a need to improve legislated knowledge pertaining to the OHS Act No. 85 of 1993 (Ferreira, 2015:99). This question will be compared with question 7 which is related to the participants' understanding of the OHS Act No. 85 of 1993.

Question 6 asked participants if the school has a copy of the OHS Act No. 85 of 1993. As legislated in the General Administrative Regulations (GARs), regulation 4, an employer should have a readily available copy of the OHS Act No. 85 of 1993 when five or more persons are employed. If the number of employees is less than five, the employer should make available a copy of the OHS Act No. 85 of 1993 to an employer on request (Lexis Nexis, 2021:21).

Table 6.2 reviews the responses to question 6, where 117 (48.5%) participants indicated that the school has a copy of the OHS Act No. 85 of 1993, 11 (4.6%) indicated that the school did not have a copy, while 113 (46.9%) were uncertain whether the school has a copy of the OHS Act No. 85 of 1993.

Table 6.2:   Does the school have a copy of the OHS Act No. 85 of 1993?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	117	48.5	48.5	48.5
	No	11	4.6	4.6	53.1
	Uncertain	113	46.9	46.9	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

It is a legal imperative that a copy of the OHS Act No. 85 of 1993 is readily available on the school premises. This may be linked to the availability of an H&S policy explored later in question 8.

Question 7 explored the participants' understanding of the OHS Act No. 85 of 1993. In question 5, the participants were asked whether they had heard of the OHS Act No.

85 of 1993. Intrinsically, having heard of the OHS Act No. 85 of 1993 does not imply that one understands the legislative content of the OHS Act No. 85 of 1993.

This is evident in the responses where 77 (32%) participants indicated having a poor understanding, while 73 (30.3%) participants indicated having a fair understanding of the OHS Act No. 85 of 1993. Furthermore, 52 (21.6%) participants had no understanding of the OHS Act No. 85 of 1993, 32 (13.3%) indicated having a good understanding, while seven (2.9%) participants indicated having an excellent understanding of the OHS Act No. 85 of 1993. as illustrated in Figure 6.8.
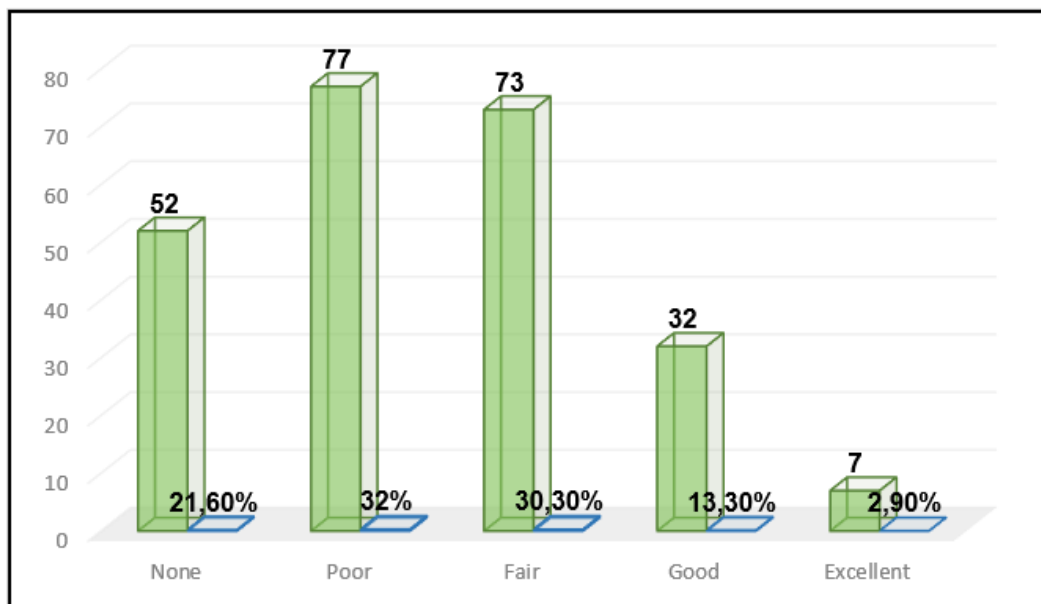
Figure 6.8:   Understanding of the OHS Act No. 85 of 1993

Source: Researcher's own compilation

A data mean (average) comparison and cross-tabulation between question 5 and question 7, where participants indicated having heard of the OHS Act No. 85 of 1993 was calculated at a mean (average) of 2.76. In addition, participants who indicated having a good knowledge of the OHS Act No. 85 of 1993 was calculated at a mean (average) of 1.09 and an excellent knowledge at a mean (Average) of 1.0 as illustrated in Table 6.3 (IBM, 2022).

Table 6.3: Data mean (average) comparison and cross-tabulation between question 5 and question 7

Have you heard of the Occupational Health and Safety (OHS) Act No. 85 of 1933	Mean	N	Std. Deviation
Yes	2.76	168	.994
No	1.67	51	.841
Uncertain | Don't know	1.82	22	.795
Total	2.44	241	1.059

Have you heard of the Occupational Health and Safety (OHS) Act No. 85 of 1933 / What is your understanding of the OHS Act No. 85 of 1993?	Mean	N	Std. Deviation
None	1.85	52	.668
Poor	1.45	77	.735
Fair	1.18	73	.452
Good	1.09	32	.390
Excellent	1.00	7	.000
Total	1.39	241	.650

Source: IBM (2021b)

Furthermore, comparing the quantitative data analysis with the qualitative data results in Section 5.2.2, question 5, it can be inferred that participants do not have sufficient understanding of the OHS Act No. 85 of 1993. This means that safety understanding amongst participants (school educators) requires consideration. In accordance with these findings, the DBE should make OHS a priority, as safety is a constitutional imperative.

The literature has stated that the focus of the DBE is on school values and ethics and that policies and measures have been implemented to address the safety of educators, scholars and other role-players through its action plan. The DBE outcome statement 5 in the strategic action plan is to increase the safety net in schools through "pro-poor policies." The DBE outcome 6 related to communication of information and to teaching and promoting school safety (DBE, 2019; DBE, 2020:45). Question 8 in Section B enquired whether the school has a safety policy.

The OHS Act No. 85 of 1993, section 7(1)(a), states that the chief inspector of the DoL may require an employer to have a written H&S policy. Furthermore, section 7(3) indicates that the policy must be prominently displayed (Lexis Nexis, 2021:10). As previously indicated in Section 5.2.3, question 7, the researcher believes that the participant made reference to an SOP and not an actual H&S policy. An internet search conducted by the researcher did not yield a positive result related to a DBE H&S policy.

The researcher is thus uncertain as to the participant's understanding of the difference between a safety policy and a safety SOP.

The results obtained from question 8 are potentially inaccurate, as 230 (95.4%) of the participants indicated that the school has a safety policy (Table 6.4).

Table 6.4:   Does your school have a safety policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	230	95.4	95.4	95.4
	No	4	1.7	1.7	97.1
	Uncertain	7	2.9	2.9	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

Question 9 enquired regarding the effective implementation of the safety policy. In response, 73 (30.3%) participants agreed that the safety policy was effectively implemented, 53 (22%) somewhat agreed, and 23 (9.5%) strongly agreed. In comparison, 51 (21.2%) participants somewhat disagreed, 29 (12%) disagreed, and 12 (5%) strongly disagreed that the safety policy was effectively implemented, as illustrated in Table 6.5.

Table 6.5:   Is the safety policy effectively implemented?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	5.0	5.0	5.0
	Disagree	29	12.0	12.0	17.0
	Somewhat disagree	51	21.2	21.2	38.2
	Somewhat agree	53	22.0	22.0	60.2
	Agree	73	30.3	30.3	90.5
	Strongly agree	23	9.5	9.5	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

Linking to question 7 related to the participants' understanding of the OHS Act No. 85 of 1993, question 10 enquired regarding the participants' understanding of their duties and responsibilities as related to section 14 of the OHS Act No. 85 of 1993. Where section 14(a) requires every person to take responsibility for the health and safety of persons who may be affected by their acts or omissions (Lexis Nexis, 2021:11).

Comparing the data related to these questions, it is interesting to note that 77 (32%) participants had a poor understanding of the OHS Act No. 85 of 1993, while 73 (30.3%) participants indicated having a fair understanding (Figure 6.8).

The researcher, however, notes some inconsistencies between question 7 and question 10, where 113 (46.9%) participants indicated understanding their responsibilities as prescribed by the OHS Act No. 85 of 1993 (Figure 6.9). A possible explanation to the discrepancy could be that participants understood their duties and responsibilities as an educator, and interpreted these duties and responsibilities in line with the legislative requirements of the OHS Act No. 85 of 1993. Interestingly, 79 (32.8%) participants indicated being uncertain what the duties and responsibilities entailed as related to the legal prescript of the OHS Act No. 85 of 1993, while 49 (20.3%) participants indicated 'no' to the question related to understanding the duties and responsibilities of an employee as legislated. Figure 6.9 presents a graphical illustration of the responses.
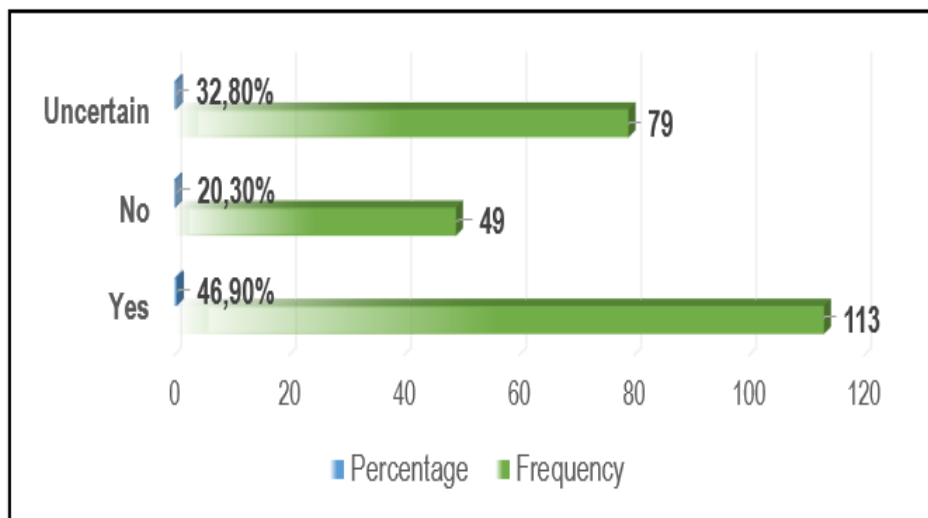
Figure 6.9: **OHS Act No. 85 of 1993, Section 14: Employee duties and responsibilities**

Source: Researcher's own compilation

An inherent part of an educator's responsibility is to identify hazards and risks within the school environment. The final question in Section B, question 11, examined if participants were aware that the OHS Act No. 85 of 1993 requires from them as an educator (employee) to identify hazards and risks in the school environment (workplace). Legislation further requires that scholars, parents and other persons are informed regarding these identified risks and hazards.

In response to question 11, 157 (65.1%) participants indicated that they were aware of this requirement (Table 6.6), 47 (19.5%) were uncertain, while 37 (15.4%) indicated that they were not aware that they had to identify the risks and hazards in the school environment.

Table 6.6: **Occupational Health and Safety Act No. 85 of 1993: Identify hazards and risk in the school environment**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	157	65.1	65.1	65.1
	No	37	15.4	15.4	80.5
	Uncertain	47	19.5	19.5	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

This section explored participants' knowledge related to the OHS Act No. 85 of 1993 through questions related to the legislative duties and responsibilities. As indicated, an inherent part of an educator's responsibility is to identify hazards and risks within the school environment. The literature has indicated that the lack of safety within a school environment could go unnoticed by educators, resulting in hazards, dangers, and risks, causing unhealthy and unsafe conditions (Themane & Osher, 2014:3). In addition, Maseko (2016:31) stated that educators (employees) have a responsibility to inform scholars, parents and other role-players regarding any dangers, hazards and/or risks identified.

In summary, the data analysis has indicated discrepancies in the responses, where 168 (69.7%) participants indicated having heard of the OHS Act No. 85 of 1993 (Table 6.1); however, 77 (32%) participants indicated having a poor understanding of the OHS Act No. 85 of 1993, with an additional 52 (21.6%) having no knowledge related to the legislative prescripts. Only seven (2.9%) of the participants indicated having an excellent knowledge of the OHS Act No. 85 of 1993 (Figure 6.8). As indicated, participants may have inferred their educational duties and responsibility as educators to those as prescribed by the OHS Act No. 85 of 1993. The next section explores legislative compliance to the OHS Act No. 85 of 1993.

Cross-tabulating of question 10 with question 7 and the Chi-Square test of independence indicated a significant association between the independent variable

(X) of the participants' understanding of the OHS Act No. 85 of 1993 (questions 7) and the dependent variable (Y) of the understanding of the participant's duties and responsibilities (question 10). The Chi-square test of independence is calculated as $X2$ (4, n = 241) = 56,328 ($p<0.001$). Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the participants understanding of the OHS Act No. 85 of 1993 and their legislative duties and responsibilities where the Kendall tau-b is valued at 0.427 (Table 6.7). Meaning, there is a significant relationship between the independent variable of the participants understanding of the OHS Act No. 85 of 1993. Knowing and understanding the legal requirements of the OHS Act No. 85 of 1993 allows the participant to have better knowledge of their duties and responsibilities (Figure 6.10).

Table 6.7:   Question 7 versus question 10: Chi-Square test of independence with Kendall tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	56.328[a]	4	0,000
Likelihood Ratio	63,771	4	0,000
Linear-by-Linear Association	53,975	1	0,000
N of Valid Cases	241		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.28.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,427	0,047	8,862	0,000
	Spearman Correlation	0,468	0,052	8,176	<,001[c]
Interval by Interval	Pearson's R	0,474	0,049	8,327	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
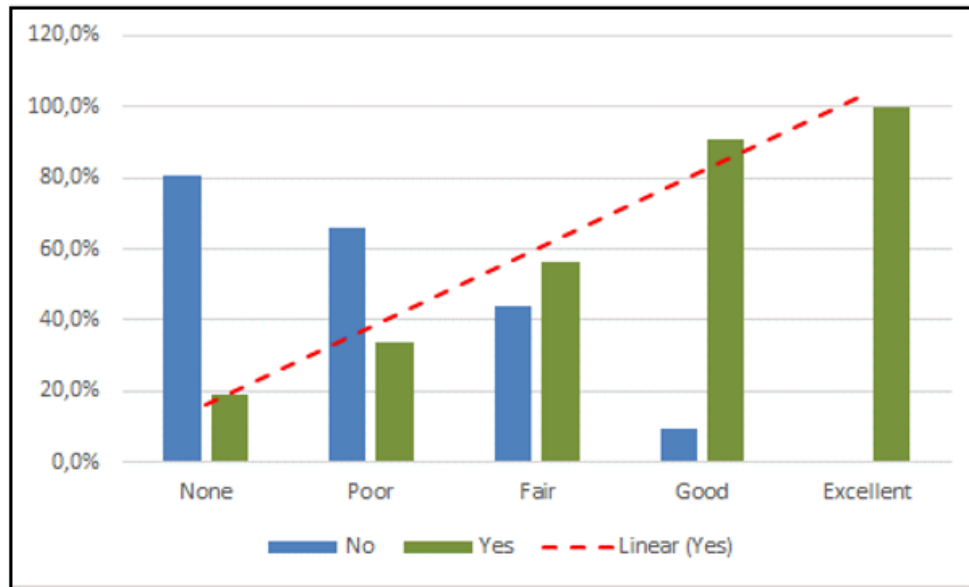
Figure 6.10:   Question 7 versus question 10: Linear relationship between the participants understanding of the OHS Act No. 85 of 1993 (variable X) versus understanding their duties and responsibilities (variable Y)

Source: Researcher's own compilation

Similarly, question 11 was cross tabulated with question 7 and the Chi-Square test of independence indicated an association between the independent variable (X) of the participants understanding of the OHS Act No. 85 of 1993 (questions 7) and the dependent variable (Y) of the participants' awareness related to the identification of hazards and risk in the school (question 11). The Chi-Square test of independence is calculated as X2 (4, n = 241) = 37.143 (p<0.001). In addition, Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the participants understanding of the OHS Act No. 85 of 1993 (question 7) and their awareness of the OHS Act No. 85 of 1993 that requires the identification of hazards (question 11) where the Kendall tau-b is valued at 0.350 (Table 6.8). Meaning, there is a significant relationship between the independent variable of the participants' understanding of the OHS Act No. 85 of 1993 and the participants awareness toward the legal requirement to identify hazards and risks in a school environment (Figure 6.11).

Table 6.8:   Question 7 versus question 11: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.143[a]	4	0,000
Likelihood Ratio	46,864	4	0,000
Linear-by-Linear Association	34,370	1	0,000
N of Valid Cases	241		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.44.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,350	0,049	6,877	0,000
	Spearman Correlation	0,383	0,054	6,413	<,001[c]
Interval by Interval	Pearson's R	0,378	0,052	6,320	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
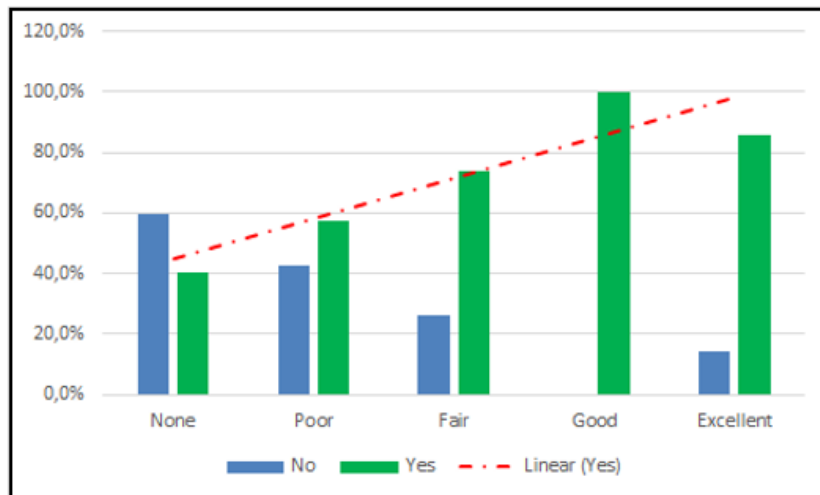
Figure 6.11:   Question 7 versus question 11: Linear relationship between the participants understanding of the OHS Act No. 85 of 1993 (variable X) versus hazard identification (variable Y)

Source: Own compilation

Having heard of the OHS Act No. 85 of 1993 does not imply that participants' understand the legislative requirements. As noted from the above discussion participants do not have sufficient knowledge and understanding of the OHS Act No. 85 of 1993 to effectively implement. Linking section B to H[1]: There is a relationship between the knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety. The results confirm that school management has insufficient

understanding and knowledge pertaining to the OHS Act No. 85 of 1993 and its legislative implementation. It can thus be inferred that a relationship exists between the OHS Act No. 85 of 1993 and the implementation of school safety, H^1 is thus supported.

The next section explores legislative compliance to the OHS Act No. 85 of 1993.

6.3.3 Section C: Occupational health and safety legislation: Compliance

Section C of the questionnaire comprised of 13 questions to determine participants' compliance to the OHS legislation. This section will test H_2 relating to compliance to the OHS Act No. 85 of 1993 leads to the effective implementation of legislated school safety by exploring legislative compliance. The section begins with the appointment of H&S representatives, H&S committees, and hazards and risk identification. The section consisted of questions related to legislative compliance where the first four questions explore the legislative requirement of H&S representatives beginning with their appointments. As previously indicated, section 17(1) of the OHS Act No. 85 of 1993 requires the appointment of H&S representatives where there are 20 or more employees. In addition, section 17(4) states that these appointed H&S representatives should be in full-time employment within the specific workplace they are appointed for. In addition, section 17(5) of the OHS Act No. 85 of 1993 states that at least one H&S representative should be appointed for every 100 employees (ratio = 1:100). A school with a thousand educators and scholars would need to appoint a minimum of 10 H&S representatives (1 000 ÷ 100 = 10). Furthermore, SASA No. 84 of 1996 does not mention H&S representatives (RSA, 1996b).

Question 12 enquired whether schools have appointed H&S representatives, and 191 (79.3%) participants indicated that there are H&S representatives appointed in the school, 44 (18.3%) participants were uncertain whether the school had appointed H&S representatives, and six (2.5%) participants indicated there were no appointed H&S representatives, as outlined in Table 6.9.

Linking to question 12, question 13 enquired regarding the number of appointed H&S representative in schools. As alluded to above, the OHS Act No. 85 of 1993, section 17(5), requires the appointment of at least one H&S representatives per 100 employees (ratio = 1:100) (Lexis Nexis, 2021:12). The ratio of safety representative

appointed is calculated in Section 5.2.3, Section C (question 13) (a full list of calculations is available in Annexure F, question 13).

Table 6.9:   Health and safety representatives in the school

Are there appointed H&S representatives in your school?			
	Frequency	%	Cumulative %
Yes	191	79,3	79,3
No	6	2,5	81,7
Uncertain	44	18,3	100
How many H&S representatives have been appointed in the school?			
None	9	3,7%	3,7
1-2	42	17,4%	21,2
3-4	65	27,0%	48,1
5-6	31	12,9%	61
7-9	16	6,6%	67,6
>10	29	12,0%	79,7
Uncertain	49	20,3%	100

Source: IBM (2021b)

In response to question 13, 65 (27%) participants indicated between three and four appointments, 49 (20.3%) participants were uncertain whether there were appointed H&S representatives, and 42 (17.4%) had between one and two appointments. In addition, 31 (12.9%) participants indicated the appointment of between five and six, while 29 (12%) participants indicated the appointment of more than 10 H&S representatives. Sixteen (6.6%) indicated between seven and nine H&S appointments, while nine (3.7%) participants indicated having no H&S representative appointments, as outlined in Table 6.9.

In addition to appointing H&S representatives, these appointed representatives should be trained to ensure that their duties are correctly carried out. Question 14 explored whether the appointed H&S representatives have received formal H&S training. Section 17(7) of the OHS Act No. 85 of 1993 requires that all activities and training related to health and safety are conducted within normal working hours. No reference or referral is made to H&S training in the SASA No. 84 of 1996 (RSA, 1996b). Section 5.2.3 found that the responses received from the interviews with senior management were inconclusive, as participants indicated that H&S training was given during formal educational training.

In response to question 14, related to formal H&S training, 122 (50.6%) participants indicated that H&S training was received, while 94 (39%) participants were uncertain whether H&S training had been given to representatives, and 20 (8.3%) participants indicated they had not received H&S training (Figure 6.12).

A comparison of the responses from school management in the interview guide with the responses received in the questionnaire shows conflicting responses. Management indicated that H&S training was received during formal education, while 122 (50.6%) participants in the questionnaire indicated that H&S training was given to appointed H&S representatives, as outlined in Figure 6.12.
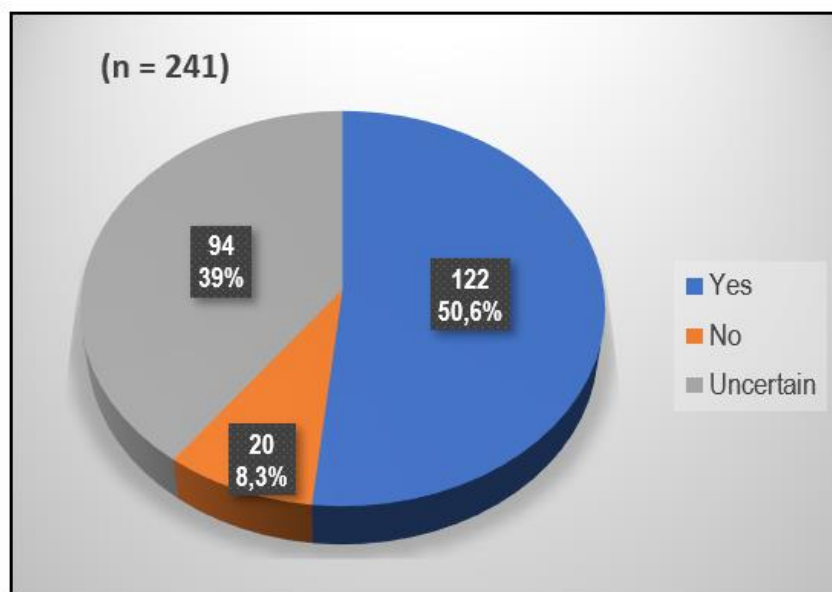
Figure 6.12:   Health and safety representatives training

Source: Researcher's own compilation

Question 15 determined who the appointed H&S representatives are. It is a legal imperative in section 17(4) of the OHS Act No. 85 of 1993 that appointed H&S representatives be employed full-time within the workplace they are appointed (Lexis Nexis, 2021:12). From the responses, 186 (77.2%) indicated that educators were the main persons appointed as H&S representatives in a school, while 16 (6.6%) participants were uncertain who had been appointed as a H&S representative, and eight (3.3%) appointments were amongst support staff. Scholars were not appointed as H&S representatives. The question allowed the participants to indicate any other appointed members. Indications that were given included the appointment of 12 (5%) safety coordinates, eight (3.3%) security guards, and seven (2.9%) administrative

staff. In addition, two (0.8%), principals/deputy head principals and one (0.4%) Head of Discipline were appointed as the H&S representative, as outlined in Table 6.10.

Table 6.10:   Who are the appointees of H&S representatives in the school?

	Frequency	%	Cumulative %
Educators	186	77,2%	77,50%
Scholars	0	0,0%	
Support staff	8	3,3%	80,80%
Uncertain	16	6,6%	90,40%
Other			
Security guard	8	3,3%	94,20%
Administrative staff	7	2,9%	83,80%
Principal/Deputy Head principal	2	0,8%	95%
Head of discipline	1	0,4%	90,80%
Safety coordinator	12	5,0%	100%

Source: IBM (2021b)

In reviewing the literature, it was stated that the DBE should ensure that all principals, educators, and school officials should receive H&S training to become acquainted with the legal prescripts of the OHS Act No. 85 of 1993 (Ferreira, 2015:99).

Summarising the legal compliance in relation to H&S representatives, it is noted that 79.3% of participants (Table 6.8) indicated having appointed H&S representatives, while the majority of these appointments appear to be educators (77.2%, Table 6.10). However, it would appear from the responses that only 122 (50.6%) (Table 6.11) of the appointed H&S representatives have received H&S training (question 14), while 20 (8.3%) indicated that no H&S training had been received, and 94 (39%) were uncertain whether H&S training was received. In addition, five (2.1%) participants added that the question was not applicable.

Table 6.11:   Training of H&S representatives

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not applicable	5	2.1	2.1	2.1
	Yes	122	50.6	50.6	52.7
	No	20	8.3	8.3	61.0
	Uncertain | Don't know	94	39.0	39.0	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

Following the appointment of the H&S representatives, the next step is the establishment of an H&S committee, as prescribed by section 19 of the OHS Act No. 85 of 1993 and the General Administrative Regulations (GARs), regulation 5. Section 19(1) requires of an employer to establish an H&S committee if two or more H&S representatives have been appointed. Furthermore, section 19(4) states that an H&S committee meeting should be held at least once every three months, or as deemed to be necessary (Lexis Nexis, 2021:12, 21).

Question 16 enquires from participants how often H&S meetings are conducted in the school. In Section 5.2.3, question 12, it was determined that H&S meetings are conducted in some form; however, not necessarily as a formal H&S committee meeting as prescribed by the OHS Act No. 85 of 1993. As such, 82 (34%) participants indicated bi-monthly (every second month) H&S committee meetings, and 54 (22.4%) participants indicated they were uncertain whether H&S committee meetings were being conducted. In addition, 42 (17.4%) participants indicating six monthly H&S committee meetings, while 40 (16.6%) participants indicating monthly H&S committee meetings. Thirteen (22.4%) participants indicated weekly H&S committee meetings, four (1.7%) indicated that meeting never took place, and three (1.2%) indicated quarterly H&S committee meetings. Furthermore, three (1.2%) participants that the question was not applicable and zero (0%) indicated that meeting took place annually, as outlined in Figure 6.13. Schools that indicated having H&S committee meetings less than quarterly do not meet the legislative requirement.

	Never	Weekly	Monthly	Bi-monthly	Quarterly	Six monthly	Annually	Not applicable	Uncertain
■ Frequency	4	13	40	82	3	42	0	3	54
■ Percentage	1,70%	22,40%	16,60%	34%	1,20%	17,40%	0%	1,20%	22,40%
(n=241)									
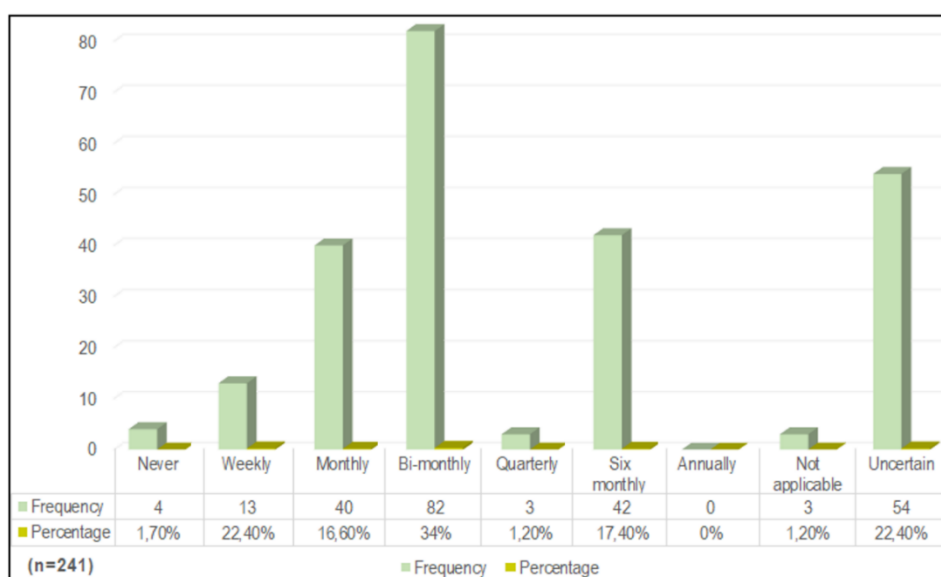
Figure 6.13:   Health and safety committee meetings

Source: Researcher's own compilation

The cross-tabulation of question 16 with question 7 and the Chi-Square test of independent indicated an association between the independent variable (X) of the participants understanding of the OHS Act No. 85 of 1993 (questions 7) and the dependent variable (Y) relating to how often H&S meetings take place (question 16). The Chi-square test of independence is calculated as X2 (4, n = 241) = 23.484 (p 0.318). In addition, there is an asymptotic significance of 0.266 between the participants' understanding of the OHS Act No. 85 of 1993 and the frequency of H&S meetings. Kendall tau-b is valued at 0.039 (Table 6.12). Meaning that there is no significant relationship between the frequency of H&S meetings and the participant knowledge of the OHS Act No. 85 of 1993 (Figure 6.14).

Table 6.12: **Question 7 versus question 16: Chi-Square test of independence with Kendal tau-b value**

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.484[a]	20	0,266
Likelihood Ratio	22,800	20	0,299
Linear-by-Linear Association	1,002	1	0,317
N of Valid Cases	241		

a. 14 cells (46.7%) have expected count less than 5. The minimum expected count is .09.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,039	0,053	0,735	0,463
	Spearman Correlation	0,047	0,064	0,724	.470[c]
Interval by Interval	Pearson's R	0,065	0,063	1,001	.318[c]
N of Valid Cases		241			

Source: IBM (2022)

263
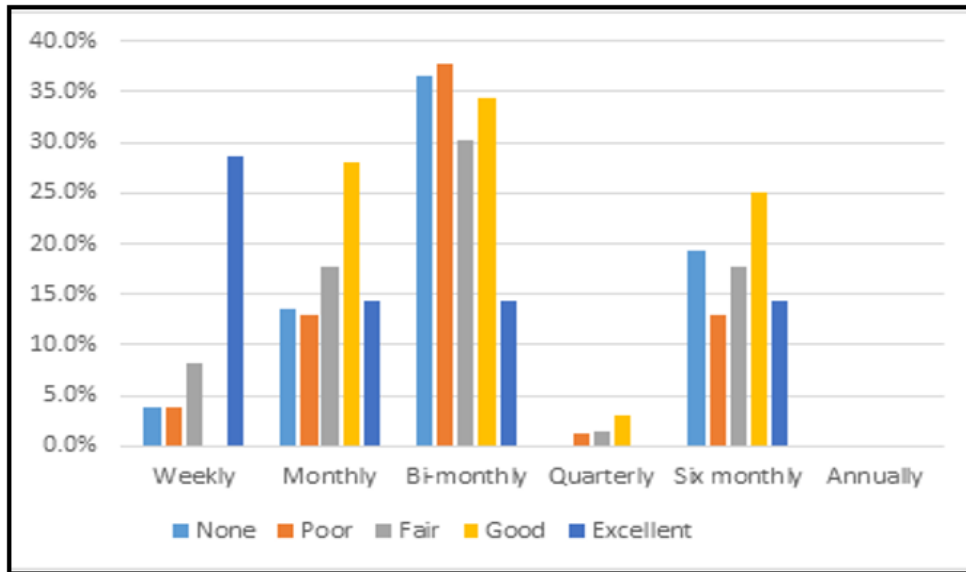
Figure 6.14:   Frequency of H&S committee meetings

Source: Researcher's own compilation

Question 17 aimed to establish if H&S aspects are discussed at school staff meetings where no H&S committee meetings take place. It is concerning to note that in question 16, most participants indicated having some form of H&S committee meeting. However, in question 17, 167 (69.7%) participants indicated that health and safety aspects are discussed at school staff meetings, 64 (11.7%) were uncertain if H&S aspects were discussed, and 10 (4.3%) participants indicated that health and safety was not discussed at school staff meetings, as shown in Figure 6.15.
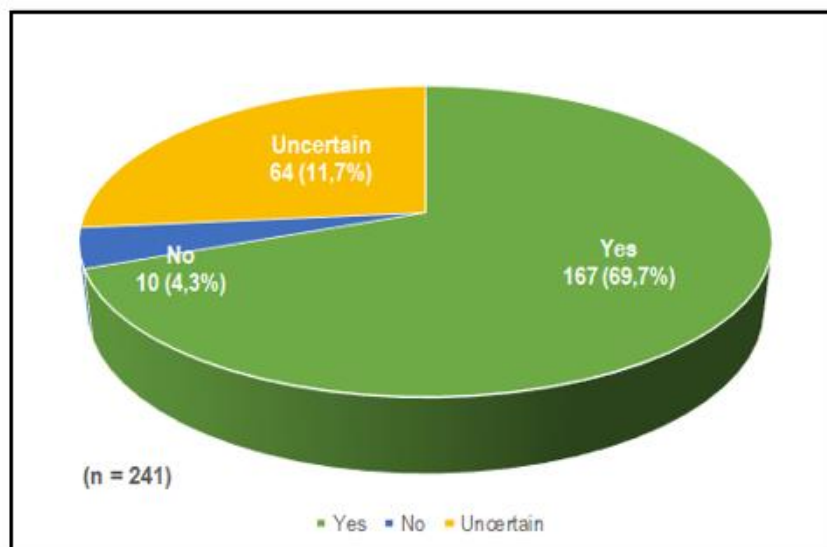
Figure 6.15:   Are health and safety aspects discussed at school staff meetings?

Source: Researcher's own compilation

As already mentioned, quarterly H&S committee meetings and discussions is a legal imperative in relation to section 19(4) of the OHS Act No. 85 of 1993. Part of these H&S committee meeting agenda discussions are the H&S inspections conducted in the school.

The next range of questions (questions 18 to 20) in Section C of the questionnaire explored if H&S inspections are conducted on the school premises, how often H&S inspections are conducted, and who conducts the H&S inspections. Section 8(1) of the OHS Act No. 85 of 1993 necessitates that an employer provides a safe working (school) environment that is safe and without risk to the health of employees. Section 8(2)(b) states that a process should be implemented to eliminate and mitigate any hazard or potential hazard to the health and safety of employees. A method of identifying hazards and risks is through safety inspections. No reference or referral is made to safety inspections in the SASA No. 84 of 1996 (RSA, 1996b).

Question 18 established if H&S inspections are conducted on the school premises. In Phase 1 (Section 5.2.3, question 13), it was deduced that educators conduct inspections in their classrooms in schools. However, these inspections do not necessarily mean that safety hazards and risks are identified.

As shown in Table 6.13, 170 (70.5%) participants indicated that H&S inspections are conducted on the school premises, 56 (23.2%) participants stated that they were uncertain, and 15 (6.2%) indicated that no inspections were conducted.

Considering the participants' H&S training, as indicated in Section 6.3.3, question 14, the researcher is not confident that H&S inspections are conducted effectively to identify safety hazards and risks as prescribed by the OHS Act No. 85 of 1993. As indicated in Section 6.3.1, question 4, 40 (43.7%) participants did not receive H&S training, while 31 (56.3%) participants indicated having received H&S training (figure 6.7). Therefore, it is evident that the responses to H&S inspections and the effectiveness of these H&S inspections require more in-depth investigation.

Table 6.13:   Health and safety inspections conducted on the school premises

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	170	70.5	70.5	70.5
	No	15	6.2	6.2	76.8
	Uncertain	56	23.2	23.2	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

Section 8(1)(b) of the OHS Act No. 85 of 1993, requires that employers ensure a healthy and safe working environment. In addition, section 18(1)(a) requires that H&S representatives evaluate the effectiveness of H&S measures, identify potential hazards (section 18(1)(b)), and investigate complaints by any employee pertaining to health and safety (section 18(1)(d)). H&S inspections may be held at least quarterly as a means for an employer to determine these aspects, and where decisions are made regarding control measures (Lexis Nexis, 2021:12).

Interestingly, in question 18, 170 (70.5%) participants indicated that inspections were conducted (Table 6.13). However, in question 19 (Figure 6.16), 74 (30.7%) participants were uncertain how often H&S inspections were conducted. This is conflicting information: how can a participant know that inspections are performed but does not know how frequently they are conducted? Furthermore, in response to question 19 about how often H&S inspections were conducted, 44 (18.3%) participants indicated inspections were conducted quarterly, 41 (17%) indicated that inspections were conducted six-monthly, while 36 (14.9%) indicated monthly inspection. In addition, 19 (7.9%) indicated weekly inspections, 15 (6.2%) bi-weekly (every two months) inspections and zero (0%) indicated annual inspections, as illustrated in Figure 6.16.
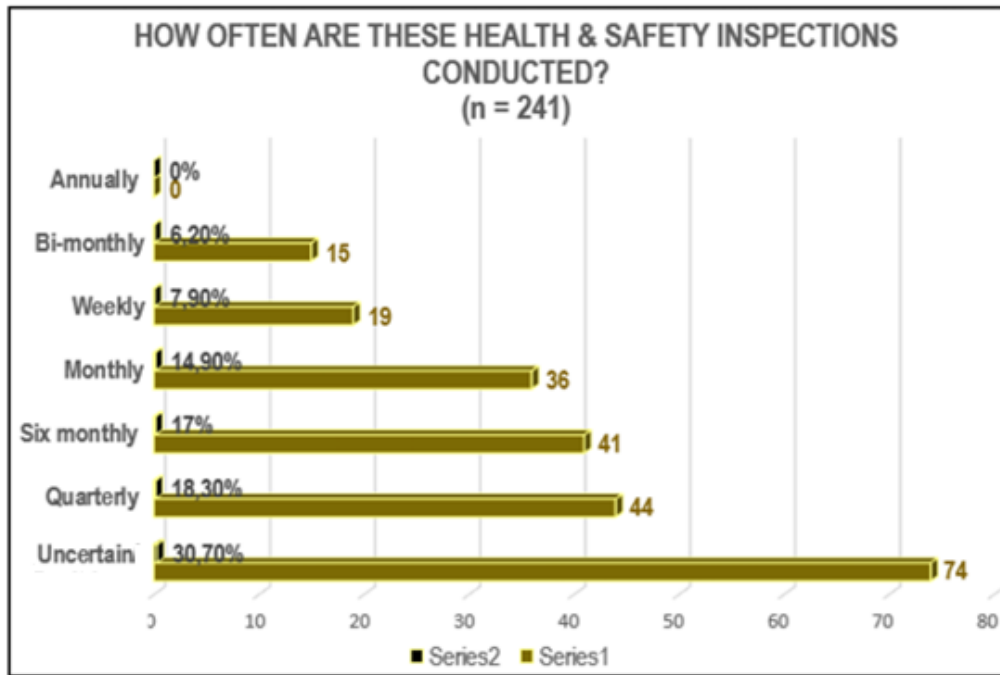
Figure 6.16: Frequency of H&S inspections

Source: Researcher's own compilation

As indicated, an H&S inspection is a legal imperative in relation to sections 8 and 18 of the OHS Act No. 85 of 1993. The researcher is concerned about this legal imperative, as 74 (30.7%) participants indicated they were uncertain whether H&S inspections were being conducted. A more in-depth investigation in the reasons why participants regard question 19 as not applicable may be warranted.

Cross-tabulating of questions 19 with question 18 and the Chi-Square test of independent an association between the independent variable (X) of whether H&S inspections are conducted (questions 18) and the dependent variable (Y) of how often H&S inspections were conducted (question 19). The Chi-Square test of independence is calculated as X2 (4, n = 241) = 68,732 (p<0.001). Kendall tau-b correlation provided an indication of direction to determine a linear relationship between the conducting of H&S inspections (question 18) and the frequency of the H&S inspections (question 19) where the Kendall tau-b is valued at 0.270 (Table 6.14). Meaning there is no meaningful corelation between the conducting of H&S meetings and the frequency at which these H&S meetings are conducted (Figure 6.17).

Table 6.14:   Question 18 versus question 19: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	68.732[a]	6	0,000
Likelihood Ratio	78,446	6	0,000
Linear-by-Linear Association	25,103	1	0,000
N of Valid Cases	241		

a. 3 cells (21.4%) have expected count less than 5. The minimum expected count is .59.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,270	0,063	4,207	0,000
	Spearman Correlation	0,301	0,070	4,887	<,001[c]
Interval by Interval	Pearson's R	0,323	0,067	5,284	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
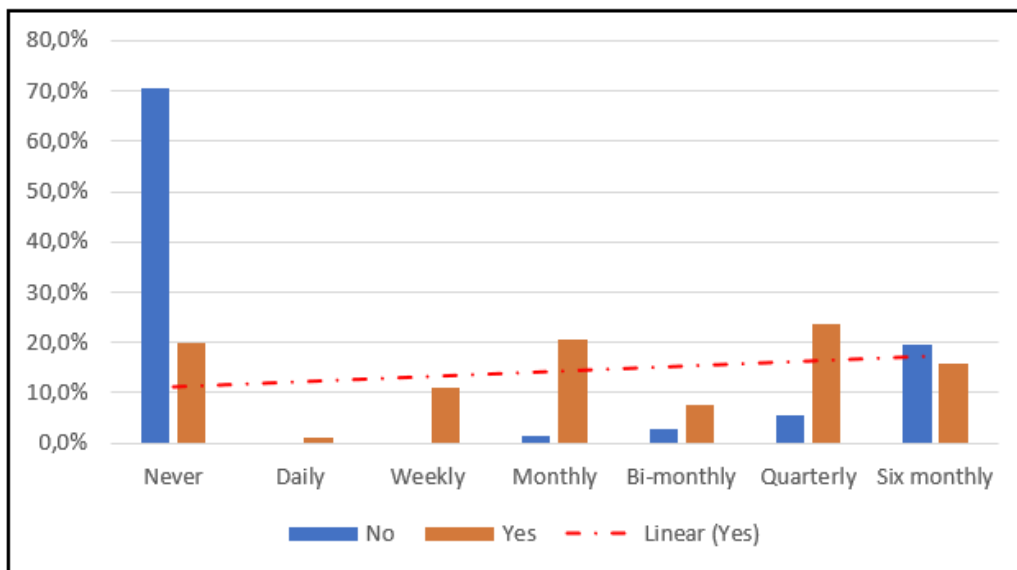
Figure 6.17:   Question 18 versus question 19: Linear relationship between conducting of H&S inspections (variable X) and how often the H&S inspections are conducted (variable Y)

Source: Researcher's own compilation

Question 20 established who conducts the H&S inspections. It has been concluded that educators are the main body of inspectors, and 122 (50.6%) participants indicated that educators conduct the H&S inspections. Furthermore, 24 (10%) were uncertain who conducts the safety inspections, while 19 (7.9%) indicated inspections were conducted by administrative staff, and 17 (7.1%) indicated that support staff conduct

inspections. One (0.04%) participant indicated that scholars conducted H&S inspections (Table 6.15). The question allowed participants to add other members who conduct the H&S inspections, where 20 (8.3%) participants indicated that the SGB conducts H&S inspections, five (2.1%) indicated the safety committee, while three (1.2%) indicated that principals/deputy head principals and outside/private companies conduct H&S inspections. Furthermore, two (0.8%) indicated that H&S inspections were conducted by the DoH and engineers/experts, as outlined in Table 6.15.

Table 6.15:   Who conducts the H&S inspections?

	Frequency	%	Cumulative %
Educators	122	50,6%	50,60%
Administrative staff	19	7,9%	65,60%
Support staff	17	7,1%	57,70%
Scholars	1	0,4%	66%
Uncertain	24	10%	100%
Other			
School governing bodies	20	8,3%	74,30%
Safety Committee	5	2,1%	89,20%
Outside/Private companies	3	1,2%	85,10%
Principals/Deputy Head Principal	3	1,2%	87,10%
Department of Health	2	0,8%	90%
Engineers/Experts	2	0,8%	85,90%

Source: Researcher's own compilation

Section 8(2)(d) of the OHS Act No. 85 of 1993 requires that an employer establishes what hazards and risks are in the workplace that could cause harm to employees and other persons. Furthermore, section 8(2)(f) requires the employer to ensure that the work performed by employees is conducted under supervision by a trained person who has the authority and can ensure that precautionary measures are implemented by the employee (Lexis Nexis, 2021:10).

Question 21 was structured as an open-ended question where participants could indicate (list) the hazards/risks observed during H&S inspections. Table 6.16 highlights the hazards and risks listed by educators, and 102 (42.3%) participants were uncertain what hazards and risks have been observed. The most prevalent hazard/risk listed by 32 (13.3%) participants was broken windows/glass. The next prevalent hazard/risk listed by 16 (6.6%) participants was electrical and loose wires. Fourteen (5.8%) participants listed fire equipment that had not been checked as a hazards/risk. Nine (3.7%) participants listed walkways, stairs and stair rails as a hazard/risk, while six (2.5%) participants listed structural integrity, and five (2.1%) listed distribution boards.

Three (1.2%) listed broken, loose, and uneven floors, and building site/building material as a hazard/risk. Two (0.8%) participants listed cracked walls and moisture, and broken lights, while one (0.4%) listed broken and unsafe doors, broken and loose ceilings, fences in need of repair, liquid spillages, HCSs and unsafe school crossings. In addition, participants listed non-hazard/risks such as insufficient illuminating, emergency exit plan, corridors, terrain irregularities, first aid boxes and first aid training, expired sick room stock, tree branches and roots, pruning of trees and bullying, as outlined in Table 6.16.

Linking this to the literature, such as the walkway collapse at the Driehoek High School in Vanderbijlpark in February 2019, and a ceiling collapse in 2021 at a school in Mamelodi (Selepe, 2019; Modipa, 2021), the researcher is concerned regarding the low rating given to walkways, stairs and railings (3.7%) and structural integrity (2.5%).

Connecting to Phase 1, question 15, an indication was given by participants that after the Driehoek High School incident in Vanderbijlpark, a structural survey was conducted (Annexure F).

In question 18, (70.5%) of the participants indicated that inspections were conducted (Table 6.13). However, in question 21, 102 (42.3%) participants were uncertain what hazards and risks have been identified in the school (Table 6.16). A full list of reported hazards/risks can be viewed in Table 6.16.

Table 6.16:   Hazards/risks observed during H&S inspections

	Frequency	%	Cumulative %
Uncertain	102	42,30%	49,40%
Broken windows/glass	32	13,35	86,40%
Electrical and loose wires	16	6,60%	65,50%
Fire equipment not checked	14	5,80%	57%
Walkway, stairs, railing	9	3,70%	69,40%
Structural integrity	6	2,50%	71,90%
Distribution boards (unlocked)	5	2,10%	98,70%
Emergency exit plan, fire drills and firealarms	4	1,7&	58,70%
Classroom equipment faulty/unsafe	4	1,70%	97,40%
Broken/loose/uneven concrete floor/tiles	3	1,20%	88,50%
Building site, building material	3	1,20%	98,70%
Illumination, insufficient	2	0,80%	50,20%
Broken lights	2	0,80%	51,10%
Cracked walls, moisture on walls	2	0,80%	72,80%
Terrain irregularities	2	0,80%	90,60%
Parking vehicles	2	0,80%	92,30%
First aid boxes not updated, first aid learning training	2	0,80%	93,20%
Bullying	2	0,80%	100%
Broken/unsafe doors	1	0,40%	86,80%
Broken/loose ceiling boards	1	0,40%	87,20%
Corridors	1	0,40%	88,90%
Fences - repair	1	0,40%	89,80%
Liquid spillages	1	0,40%	91,10%
School crossing unsafe	1	0,40%	91,50%
Tree branches, tree pruning, tree roots	1	0,40%	91,90%
Expired sickroom stock	1	0,40%	93,60%
Hazardous chemical substances	1	0,40%	99,10%

Source: IBM (2021b)

Additional to identifying the hazards/risks, section 13 of the OHS Act No. 85 of 1993 requires employers to inform employees (educators, scholars, and other persons) of any hazards and risk that may affect their health and safety in the workplace (school) (Lexis Nexis, 2021:11). In question 22, the participants were asked to indicate how frequently they were informed regarding hazards and risks that could lead to exposure (illness/disease) in relation to the OHS Act No. 85 of 1993. It is interesting to note that

in question 18, 70.5% of the participants indicated that inspections were conducted (Table 6.13), while in question 22, 85 (35.3%) participants indicated that they were occasionally informed regarding hazards and risks (Figure 6.18). In addition, 58 (24%) participants indicated that they were informed often, while 45 (18.7%) indicated being rarely informed, 32 (13.3%) indicated that they were always informed, and 21 (8.7%) indicated that they were never informed of the identified hazards/risks, as illustrated in Figure 6.18.
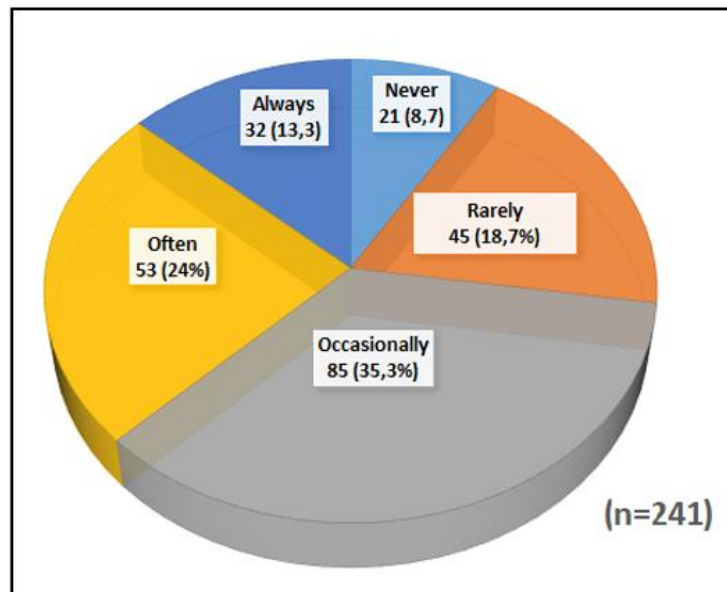
Figure 6.18:   How frequently are you informed regarding hazards and risks?
Source: IBM (2022)

Question 23 established if scholars are informed of hazards and risks they were exposed to on the school premises, and as related to the OHS Act No. 85 of 1993, section 13. As presented in Table 6.17, 181 (75.1%) participants indicated that scholars were informed regarding identified hazards/risks, while 31 (12.9%) indicated that they were uncertain whether scholars had been informed regarding identified hazards/risks, and 29 (12%) participants indicated that scholars were not informed regarding identified hazards/risks.

Table 6.17: Scholars informed regarding hazards and risks exposed to on the school premises as related to the OHS Act No. 85 of 1993, section 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	181	75.1	75.1	75.1
	No	29	12.0	12.0	87.1
	Uncertain	31	12.9	12.9	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

The final question (question 24) in Section C, determined how educators are informed regarding hazards and risks, and 174 (72.2%) participants indicated being informed during staff meetings, 44 (18.3%) indicated H&S meetings as the platform of information, while three (1.2%) participants indicated emails as the means of communication, as outlined in Table 6.18.

Question 24 allowed participants to indicate other means of communication. An indication was given by 10 (4.1%) participants that hall/assembly was a means of communication, five (2.1%) participants indicated a digital platform in the form of WhatsApp, and three (1.2%) indicated briefing sessions as the platform where information regarding hazards and risks was made known to staff. One (0.4%) indicated that notice boards and the D6 Communicator were the means of communicating information, as outlined in Table 6.18.

Table 6.18: How are educators informed regarding hazards and risks?

	Frequency	%	Cumulative %
Health and safety meeting	44	18,3%	18,3%
Staff meeting	174	72,2%	90,5%
Email	3	1,2%	91,7%
Other			
D6 Communicator	1	0,4%	92,1%
WhatsApp	5	2,1%	94,2%
Hall/Assembly	10	4,1%	98,3%
Briefings	3	1,2%	99,6%
Notice boards	1	0,4%	100,0%

Source: Researcher's own compilation

In summary, the OHS Act No. 85 of 1993 stipulates the minimum legislative compliance related to H&S representatives, where section 17(5) of the OHS Act No. 85 of 1993 requires the appointment of at least one H&S representative for every 100 employees (ratio = 1:100) in a school environment. It was further deduced (Table 6.10) that educators (77.2%) were the majority of appointees.

Section B tested H_2: Compliance to the OHS Act No. 85 of 1993 leads to the effective implementation of legislated school safety. It was noted that although some schools are not totally compliant to legislation, at least one H&S representative had been appointed. It was further determined in Table 6.11 that 50.6% of appointed H&S representatives received training. However, the researcher was not convinced that this training was related to legislated health and safety, as Phase 1 (Section C, question 10) referred to training during the formal teacher-training phase. In relation to hazard identification, it is concluded that inspections are conducted by educators (Table 6.15), and that educators are informed of the identified hazards through staff meetings (72.2%) (Table 6.18). It is therefore concluded that a relationship exists between compliance to the OHS Act No. 85 of 1993 and the legislative implementation of safety in schools, H^2 is thus supported.

Section D explored the legislative requirements related to school incidents, accidents, injuries and first aid.

6.3.4 Section D: Occupational health and safety legislation: Incidents, accidents, injuries, and first aid

Section D to Section I investigates H_3 in relation to the implementation of legislated school safety to create a safe school environment. Questions 25 to 29 of Section D of the questionnaire were related to incidents, accidents and injuries, and the reporting of these to specific role-players. As indicated in Phase 1 (Section 5.2.4), section 24(1) of the OHS Act No. 85 of 1993 lists incidents in the workplace that are to be reported. These incidents include any temporary or permanent disabilities, unconsciousness and incidents, accidents, and injury that result in the inability to work for 14 days or more, and should be reported to the chief inspector at the DoL (Lexis Nexis, 2021:13). In addition, the General Administrative regulation (GAR), as linked to the OHS Act No. 85 of 1993, regulation 8, states that an incident, accident, injury, or occupational disease should be reported within seven days from the time of occurrence as per listed

criteria. Regulation 9 outlines the recording of the investigation of such incidents, accidents, injuries, or occupational diseases (Lexis Nexis, 2021:22).

Question 25 determined if school incidents, accidents and injuries are reported to the educator. As indicated in section 24(1) and GAR(8), school incidents, accidents, injuries, or occupational diseases are to be reported as legislated to the chief inspector at the DoL (Lexis Nexis, 2021:13, 22). As shown in Table 6.19, 196 (81.3%) participants indicated that school incidents, accidents and injuries are reported to educators, 25 (10.4%) stated that they were sometimes reported, while 10 (4.1%) were uncertain whether incidents, accidents and injuries were reported to the educator. Furthermore, eight (3.3%) indicated that they were rarely reported, and two (0.8%) participants stated that they were not reported.

Question 26 established if school incidents, accidents and injuries are reported to the school principal, and 172 (71.4%) participants indicated that school incidents, accidents and injuries are reported to the school principal, 41 (17%) stated that it was sometimes reported, while 15 (6.2%) participants stated that they were uncertain whether school incidents, accidents and injuries were reported to the school principal. In addition, 11 (4.6%) indicated school incidents, accidents and injuries were rarely reported, with two indicated that school incidents, accidents and injuries were not reported to the school principal, as outlined in Table 6.19.

Table 6.19: **Reporting of incidents, accidents and injuries to educators and school principals**

Are school accidents, incidents and injuries reported to educators			
	Frequency	%	Cumulative %
Uncertain	10	4,1%	4,1%
Yes	196	81,3%	85,5%
No	2	0,8%	86,3%
Rarely	8	3,3%	89,6%
Sometimes	25	10,4%	100,0%

Are school accidents, incidents and injuries reported to the school principal			
	Frequency	%	Cumulative %
Uncertain	15	6,2%	6,2%
Yes	172	71,4%	77,6%
No	2	0,8%	78,4%
Rarely	11	4,6%	83,0%
Sometimes	41	17,0%	100,0%

Source: IBM (2021b)

An inherent requirement of a school environment would be to report any school incidents, accidents and injuries to the school principal. The reasons for the non-reporting of school incidents, accidents and injuries to the school principal would require a more in-depth investigation.

Question 27 enquired if school incidents, accidents and injuries are reported to the school district office. From the responses, 64 (26.6%) participants indicated that the incidents, accidents, and injuries are reported to the school office. In addition, 64 (26.6%) participants were uncertain if school incidents, accidents and injuries are reported to the school district office. Furthermore, 57 (23.7%) participants indicated that school incidents, accidents and injuries are sometimes reported to the school district office, while 35 (14.5%) indicated it was rarely reported, and 21 (8.7%) indicated it was not reported to the school district office, as outlined in Table 6.19.

Question 28 was the final question in this range of questions, and enquired from participants whether school incidents, accidents and injuries were reported to the DoL. The responses showed that 95 (39.4%) participants were uncertain, while 50 (20.7%) indicated they were not. This may be partly because the school rarely experiences severe school incidents, accidents, and injuries where educators or scholars are booked off for more than 14 days, or where there has been a temporary or permanent disability, or a severe incident resulting in death. In addition, 39 (16.2%) stated they were rarely reported, while 30 (12.4%) stated that it was sometimes, and 27 (11.2%) stated that school accidents, incidents and injuries were reported to the DoL, as outlined in Table 6.20.

Table 6.20: Reporting of incidents, accidents and injuries to the school district office and the Department of Labour (DoL)

Are school accidents, incidents and injuries reported to the school district office			
	Frequency	%	Cumulative %
Uncertain	64	26,6%	26,6%
Yes	64	26,6%	53,1%
No	21	8,7%	61,8%
Rarely	35	14,5%	76,3%
Sometimes	57	23,7%	100,0%

Are school accidents, incidents and injuries reported to the Department of Labour (DoL)			
	Frequency	%	Cumulative %
Uncertain	95	39,4	39,4
Yes	27	11,2	50,6
No	50	20,7	71,4
Rarely	39	16,2	87,6
Sometimes	30	12,4	100

Source: IBM (2021b)

In summary, 81.3% of school incidents, accidents and injuries are reported to educators, while 71.4% are reported to the school principal (Table 6.19). Interestingly, 26.6% of the participants stated that school incidents, accidents and injuries are reported to the school district office. However, the participants stated that only 11.2% of school incidents, accidents and injuries are reported to the DoL (Table 6.20). As previously stated, this may be because schools rarely experienced serious school incidents that result in the loss of life or major property damage.

Questions 29 and 30 explored the availability of a school incident, accident, and injury policy, and the recording of these school incidents, accidents, and injuries in the register. Section 24 of the OHS Act No. 85 of 1993 requires an employer to report each incident that occurs in the workplace to the DoL chief inspector as stipulated in section 24(1-4) (Lexis Nexis, 2021:13). Question 29 asked participants whether the school has an incident, accident and injuries policy, and 161 (66.8%) participants indicated that the school did have an incident, accident and injury policy, while 58 (24.0%) participants were uncertain, and 22 (9.1%) stated that the school did not, as presented in Table 6.21.

Question 30 asked participants whether the school had an incident, accident and injury register to record school incidents, accidents and injuries that were reported. In

response to the question, 188 (78%) participants indicated there was an incident, accident, and injury register, while 47 (19.5%) were uncertain, and six (2.5%) stated that the school did not have an incident, accident, and injury register, as outlined in Table 6.21.

Table 6.21:   School incident, accidents, and injuries policy and register

Does the school have an accidents, incidents, and injuries policy as required by the OHS Act No. 85 of 1993, section 24 & 25?			
	Frequency	%	Cumulative %
Yes	161	66,8%	66,8%
No	22	9,1%	75,9%
Uncertain	58	24%	100,0%
Is there an accidents, incidents, and injuries register for recording of school accidents, incidents, and injuries?			
	Frequency	%	Cumulative %
Yes	188	78,0%	78,0%
No	6	2,5%	80,5%
Uncertain	47	19,5%	100,0%

Source: IBM (2021b)

Questions 31 enquired from participants who indicated in question 30 that the school had an incident, accident, and injury register who manages the register. As noted in Figure 6.19, 63 (26.1%) participants stated that the school incident, accident, and injury register was managed by the school deputy head principal, while 50 (20.7%) participants indicated that educators manage the school incident, accident and injuries register. Furthermore, 47 (19.5%) participants indicated that the principal manages the school incident, accident, and injury register. In addition, 32 (13.3%) indicated that it was managed by administrative staff, and four (1.7%) participants indicated support staff, as illustrated in Figure 6.19.

Question 31 allowed participants to add an additional member who manages the school incident, accident and injuries register. The responses are listed as 'other' (18%) in Figure 6.19, included the H&S officer, the safety co-ordinator, incident staff, staff on duty and the receptionist.

It is interesting to note that most of the participants regarded this as the duty of the deputy head principal (26.1%) and school principal (19.5%), while it is in fact, the duty of the person to whom the school incident, accident, and injury was first reported, probably the educator or first aider.
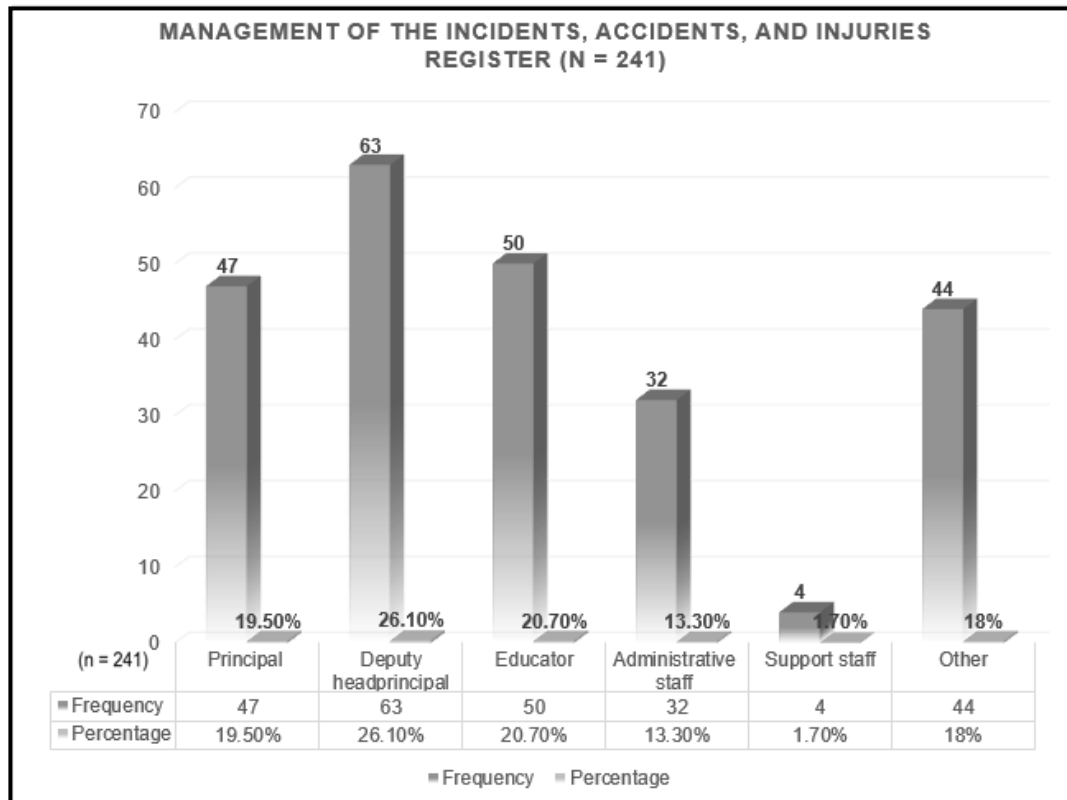
Figure 6.19:   Management of the incidents, accidents, and injuries register

Source: Researcher's own compilation

Questions 32 to 39 examined the appointment and availability of first aiders in the school in relation to the General Safety Regulations (GSRs), regulation 3. It was concluded in Phase 1 (interviews) that in a school environment, it could be expected that first aid is a high priority, as GSRs regulation 3(1) requires that an employer ensures that an injured person receives prompt first aid treatment. Regulation 3(4) states that where there are more than 10 employees in the workplace, the employer must appoint at least one first aider for every 100 employees (ratio = 1:100). The appointment of first aiders is a compulsory legal appointment and requires a formal appointment letter.

Regulation 3(2), similarly, states that where there are more than five employees in a workplace, the employer should provide a first aid box in or near the workplace that is accessible and available for first aid treatment, should the need arise. The first aid box is to be stocked according to the requirements in the annexure related on the minimum content of a first aid box. It is important to note that no medication is allowed to be placed in a first aid box (Lexis Nexis, 2021:27, 31). The content of the first aid box was

updated with the change in first aid legislation in 2021, to include a spillage kit of HCSs (Boshoff, 2022).

The literature has stated that it is the employer's responsibility to take reasonable steps to ensure prompt and immediate first aid treatment, and to determine the first aid box requirements in relation to the identified risk assessment, as well as the number of employees (Appleby & Smail, 2012:136-137; Boshoff, 2022).

As indicated in Phase 1 (Section 5.2.4, question 23), first aid appeared to be well managed in the participating schools. This is reiterated in Phase 2, question 32, where 207 (85.9%) participants indicated that first aiders had been appointed, as shown in Figure 6.20. Additionally, 23 (9.5%) participants indicated there were no appointed first aiders, while 11 (4.6) were uncertain related to the appointment of first aiders, as depicted in Figure 6. 20.
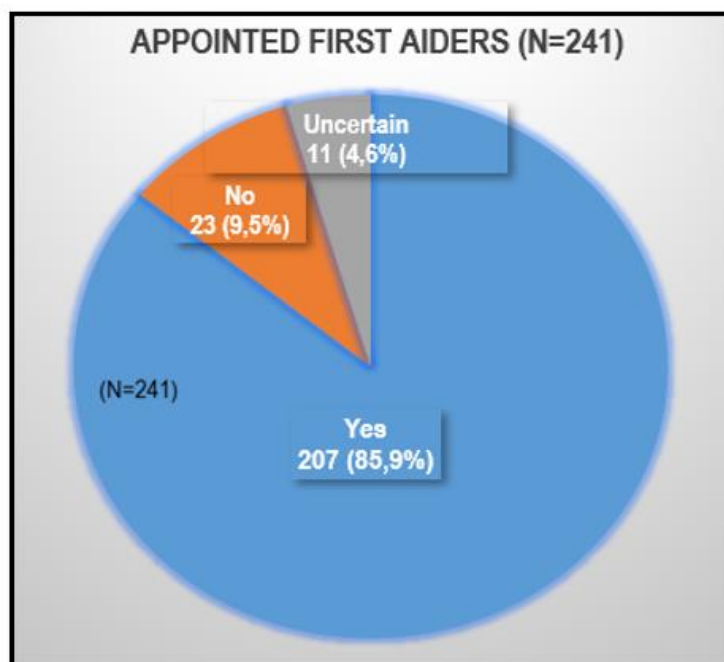
Figure 6.20:   Appointed first aiders

Source: Researcher's own compilation

In relation to the legislative prescript of the GSRs, regulation 3(4), question 33 enquired regarding the number of appointed first aiders. Similarly, in Phase 1 (Section 5.2.4, question 23), the appointment of first aiders was reviewed, where it was found that schools had appointed first aiders. Similarly, in question 33, 73 (30.3%) participants indicated having between six and nine appointed first aiders. In addition, 56 (23.2%) indicated the appointment of between three and five first aiders, while 50

(20.7%) indicated having more than 10 appointed first aiders, and 27 (11.2%) indicated between one and two appointments. Twenty-one (8.7%) stated no first aiders were appointed, as illustrated in Figure 6.21.

(n = 241)	1-2	3-5	6-9	>10	Uncertain
Frequency	27	56	73	50	14
Percentage	11,20%	23,20%	30,30%	20,70%	5,80%
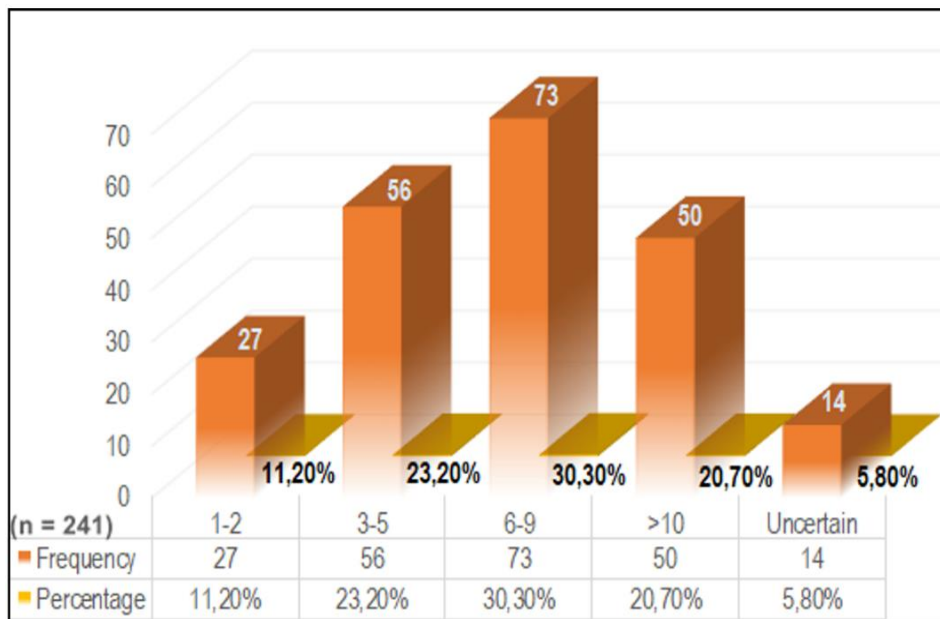
Figure 6.21:   Number of appointed first aiders

Source: Researcher's own compilation

Question 34 examined who had been appointed as a first aider, and 184 (75.3%) participants indicated that educators were the appointed first aiders. Sixteen (6.6%) participants were uncertain who had been appointed, while 10 (4.1%) indicated the appointment of support staff. In addition, four (1.7%) indicated the appointment of administrative staff, while two (0.8%) stated that scholars had been appointed, as illustrated in Table 6.22.

The question allowed participants to add other appointed members, where responses are listed in Table 6.22, and includes the safety co-ordinator (1.2%), first aid team members (0.4%) and paramedic (0.4%).

Table 6.22:   Who has been appointed as a first aider?

	Frequency	%	Cumulative %
Educators	184	76,3%	83,0%
Uncertain	16	6,6%	96,3%
Support staff	10	4,1%	88,8%
Administrative staff	4	1,7%	84,6%
Scholars	2	0,8%	89,6%
Other			
Safety coordinator	3	1,20%	98,3%
Paramedic	1	0,04%	96,7%
First aid team/first aider	1	0,04%	97,1%

Source: Researcher's own compilation

It is essential that appointed first aiders are trained in accordance with the GSRs, regulation 3(4), by a certified first aid training service provider, such as the South African Red Cross, St John's ambulance and the South African First Aid League, who can issue a valid certificate of competency (CoC) (Lexis Nexis, 2021:27). In March 2021, changes were made to first aid training by the DoL, chief inspector for OHS, where first aid level 1, 2 and 3 training will no longer have any legal standing in relation to the GSRs, regulation 3(4) as of 1 April 2021. First aid training from 1 April 2021 will be managed under the Quality Council for Trades and Occupations (QCTO) or their Quality Assurance Partners (QAP), such as the relevant Sector Education and Training Authority (SETA). The QCTO approved the continuation of first aid training by 2021 first aider service providers on the basis that they provide only skills-based training linked to specific South African Qualifications Authority (SAQA) unit standards (SAIOSH, 2021).

Question 35 enquired from participants if first aiders have received formal first aid training. In response, 187 (77.6%) participants indicated that appointed first aiders had received formal first aid training, while 33 (13.7%) participants were uncertain regarding the training received by first aiders. Additionally, 21 (8.7%) indicated that no training had been given to appointed first aiders, as illustrated in Figure 6.22.

(n = 241)	Yes	No	Uncertain
■ Frequency	187	21	33
■ Percentage	77,6%	8,7%	13,7%
■ Cumulative %	77,6%	86,3%	100,0%
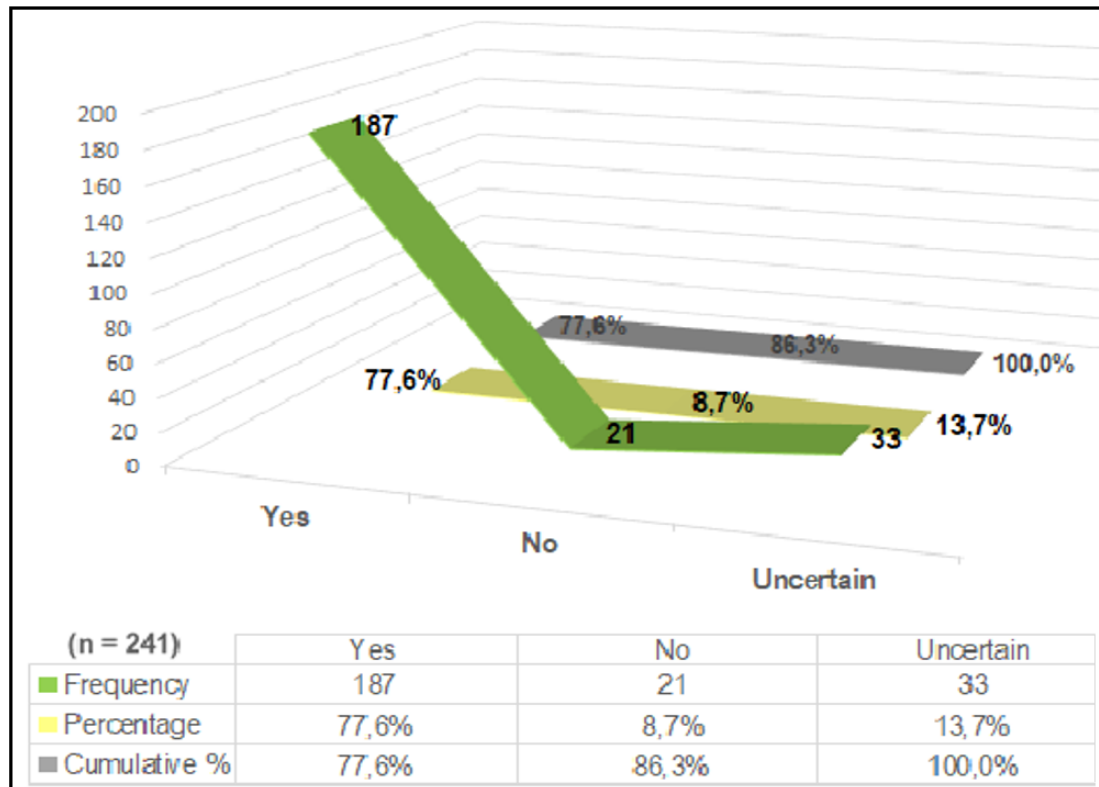
Figure 6.22:   Formal first aid training received

Source: Researcher's own compilation

In response to question 35 related to first aid training, question 36 enquired from participants who had indicated that first aiders had received training (77.6%) who the first aider training service providers were. Table 6.23 outlines the responses received, where interestingly, 153 (63.5%) participants were uncertain who the service providers were.

Table 6.23:   First aid service providers

		Frequency	Percent	Valid Percent	Cumulative Percent
Q39 Please indicate the first aid service provider:					
Valid	Uncertain	153	63.5	64.6	64.6
	Not applicable	22	9.1	9.3	73.8
	ER 24	1	.4	.4	74.3
	Critical Life Assist	12	5.0	5.1	79.3
	LiveMed	2	.8	.8	80.2
	Dynamic Development Institute	18	7.5	7.6	87.8
	National Occupation Safety & Health Consultancy	3	1.2	1.3	89.0
	Top compliance	8	3.3	3.4	92.4
	Trained - uncertain who conducted training	4	1.7	1.7	94.1
	Tericorp medical solutions	8	3.3	3.4	97.5
	Vaal Emergency Academy	1	.4	.4	97.9
	Netcare	1	.4	.4	98.3
	St John Ambulance	3	1.2	1.3	99.6
	Institute vir Christelike Onderwys	1	.4	.4	100.0
	Total	237	98.3	100.0	
Missing	System	4	1.7		
Total		241	100.0		

Source: IBM (2021b)

Cross-tabulating of questions 35 with question 32 and the Chi-Square test of independence indicated an association between the independent variable (X) of whether the school has appointed first aiders (questions 32) and the dependent variable (Y) of formal training received by appointed first aiders (question 35). The Chi-Square test of independence is calculated as $X2$ (4, n = 241) = 90.044 (p<0.001). Kendall tau-b correlation provided an indication of direction to determine a liner relationship between the appointment of first aiders and formal first aid training where the Kendall tau-b is valued at 0.611 (Table 6.24). Meaning, that there is a significant relationship between the independent variable of appointed first aiders and formal first aid training received (Figure 6.23).

Table 6.24: **Question 32 versus question 35: Chi-Square test of independence with Kendal tau-b value**

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	90.044[a]	1	0,000		
Continuity Correction[b]	85,882	1	0,000		
Likelihood Ratio	75,489	1	0,000		
Fisher's Exact Test				0,000	0,000
Linear-by-Linear Association	89,670	1	0,000		
N of Valid Cases	241				

. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.62.

. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,611	0,062	6,264	0,000
	Spearman Correlation	0,611	0,062	11,940	<,001[c]
Interval by Interval	Pearson's R	0,611	0,062	11,940	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
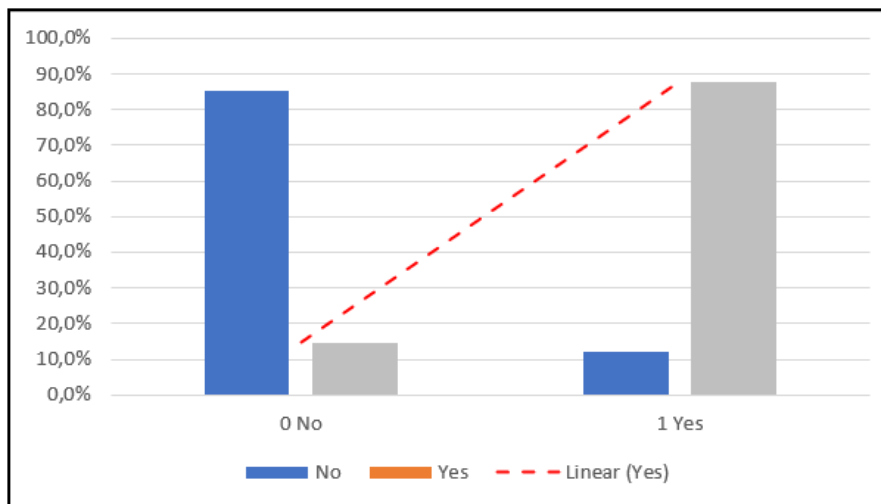
Figure 6.23: **Question 32 versus question 35: Linear relationship between the appointment of first aiders (variable X) and formal training received by appointed first aiders (variable Y)**

Source: Researcher's own compilation

As already indicated, the GSRs, regulation 3(2), require of employers to supply a first aid box in or near the workplace that is accessible and available. The first aid box should be stocked according to the requirements in the annexure in the GSRs. However, changes were made in 2021 to the content of first aid boxes in the GSRs where it became a legal requirement to include a HCS spillage kit (Boshoff, 2022).

In line with the legal requirements of the GSRs 3(2), question 37 enquired from participants if the school had first aid boxes, and if so, how many first aid boxes where available. As could be expected in a school environment, 227 (94.2%) participants indicated that first aid boxes are available on the school premises, while 13 (5.4%) participants were uncertain as to whether first aid boxes were available. Only one (0.4%) indicated that there was no first aid box available, as illustrated in Table 6.25.

Question 38 was related to the number of fist aid boxes available on the school, and 120 (49.8) participants stated that they had more than five first aid boxes available, 53 (22%) indicated between three and four first aid boxes, and 40 (16.6%) participants indicated between one and two first aid boxes being available. Twenty-five (10.4%) participants were uncertain how many first aid boxes were available, as illustrated in Table 6.25.

If first aid boxes are available but not maintained in accordance with the legislative prescript, they are ineffective in an emergency situation. The responses to question 39 were that 114 (47.3%) participants indicated that the first aid boxes were always maintained, while 60 (24.9%) indicated sometimes, 33 (13.7%) participants indicated often, and 15 (6.2%) indicated that first aid boxes were rarely maintained as legislated. Thirteen (5.4%) indicated the question was not applicable, while six (2.5%) participants indicated that first aid boxes were never maintained, as presented in Table 6.25. In addition to the availability of first aid boxes (94.2%) first aid boxes appear to be maintained (47.3%), as indicated in Table 6.25.

Table 6.25:   First aid boxes

Does the school have first aid boxes available on the school premises?			
	Frequency	%	Cumulative %
Yes	227	94,2%	94,2%
No	1	0,04%	94,6%
Uncertain	13	5,4%	100,0%
How many first aid boxes are available on the school premises?			
1-2	40	16,6%	17,8%
3-4	53	22,0%	39,8%
>5	120	49,8%	89,6%
Uncertain	25	10,4%	100,0%
Are first aid boxes maintained in relation to the General Safety regulations (GSRs) as prescribed in the OHS Act No. 85 of 1993?			
Always	114	47,3%	100,0%
Sometimes	60	24,4%	39,0%
Often	33	13,7%	52,7%
Rarely	15	6,2%	14,1%
Not applicable	13	5,4%	5,4%
Never	6	2,5%	7,9%

Source: IBM (2021b)

In summary, schools need to take cognisance of the changes to the first aid legalisation as prescribed in the GSRs, regulation 3 made in 2021, with specific reference to the accreditation of first aid training service providers. Another change of note made to the legislation is the inclusion of a spillage kit as a minimum requirement in first aid boxes. As data collection for this study was collected during 2019-2020, further investigation regarding the new legislative prescripts of first aid needs to be conducted.

The next section of the questionnaire (Section E) examined the legal requirements in relation to facilities (school buildings) where section 8(1) of the OHS Act No. 85 of 1993 requires that the employer (school principal) should maintain a working (school) environment that is without risk to the health and safety of persons within that environment (Lexis Nexis, 2021:10). In addition, the OHS Act No. 85 of 1993 contain the FRs, including SANS 10400 (2021), which contains criteria related to the NBRs that address aspects of buildings such as floors, windows, ramps, roofs, stairways, lighting and ventilation. In addition, the SASA No. 84 of 1996, Section 12(5), requires that the physical school facilities in public schools should be accessible for disabled persons.

As previously mentioned, the literature and the safety theory (Section 2.3.2) referred to the walkway bridge collapse at the Driehoek High School in Vanderbijlpark in 2019. Prior to this collapse, the school experienced several near-miss and structural incidents that were unreported (Dlamini, 2019). Another safety incident of note is that of unsafe pit latrines in schools, where reference (Section 2.6.5) is made to an incident in 2014 that occurred when a five-year old fell into a pit latrine at a school in the Limpopo Province. Another such incident occurred in 2016 when a five-year old fell into a pit latrine and was severely injured in the North West Province. In 2017, a six-year-old died when the walls of an outside toilet collapsed on him in the Eastern Cape. In 2018, a five-year old fell into a pit latrine at a school in the Eastern Cape Province. During the period May to July 2018, a survey of 86 schools was conducted in Limpopo, and it was found that 41 schools had unlawful pit latrines (Bhagwan, 2018; Hazvineyi, 2018). Furthermore, school violence is South Africa appears to be a daily occurrence putting both educators and schools at risk (Banda, 2022). Section E explores the safety of school facilities (buildings).

6.3.5   Section E: Occupational health and safety legislation: Facilities

In light of the incidents mentioned in the literature, Section E explored the maintenance of school facilities where question 40 enquired whether the school has a maintenance and facility plan. As noted from the responses collected in Phase 1 of the study (Section 5.2.5, question 25), a few schools had a proactive approach, where schools employed the assistance of a structural engineer to assess school buildings. As noted from responses to question 40, 176 (73%) indicated that the school has a maintenance and facility plan, while 52 (21.6%) indicated they were uncertain whether the school had a facility and maintenance plan. Thirteen (5.4%) stated there was no facility and maintenance plan, as illustrated in Figure 6.24.
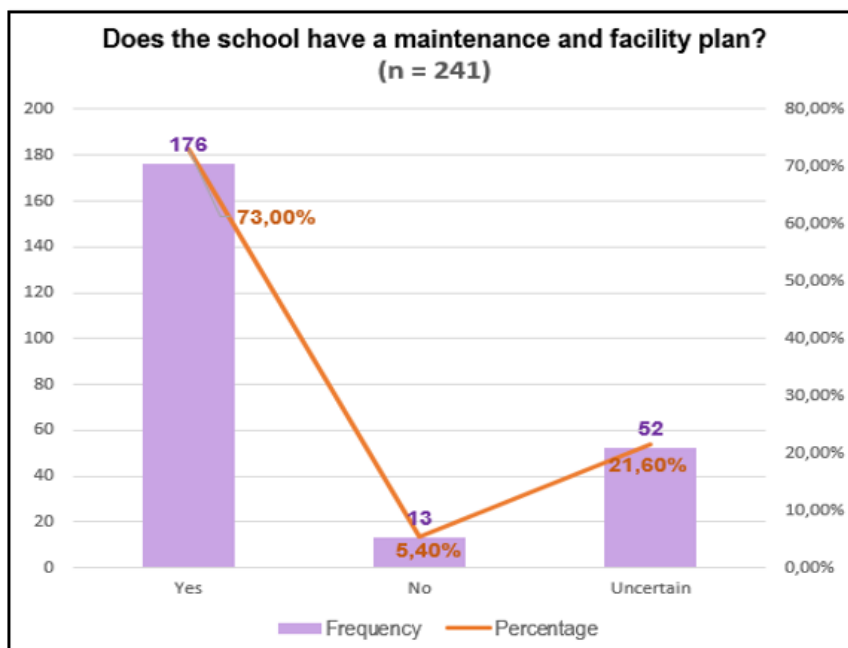
Figure 6.24:   Maintenance and facility plan

Source: IBM (2022)

The SASA No. 84 of 1996 Section 12(5) requires the MECs to ensure that the physical school facilities in public schools are accessible for disabled persons and available to the community (RSA, 1996b:19 and 28). Another important aspect of note related to facilities is the use of asbestos that is managed under the Asbestos Regulations (ARs) of 2020. The NIOH has indicated that one in every eight schools in Gauteng contains asbestos. The NIOH has also stated that several of these asbestos structures are neglected, resulting in asbestos fibres exposure (NIOH, 2017). In Phase 1 (Section 5.2.5, question 26), 11 of 14 schools indicated not using temporary classrooms.

Question 41 asked participants whether the school has any temporary structures/buildings being used. In question 41, 148 (61.4%) participants stated that there was temporary school structures/building on the school premises, while 78 (32,4%) indicated there were no temporary structures/buildings. Fifteen (6.2%) participants were uncertain whether there are temporary school structures/buildings, as illustrated in Figure 6.25.

Question 42 asks participants to indicate the type of temporary school structures/buildings used on the school premises. In response to question 42, 103 (42.7%) participants stated that they use possible asbestos prefabricated classrooms, 23 (9.5%) participants indicated using a prefabricated structure/building not containing

asbestos. Some, 14 (5.8%) indicated using a zinc/corrugated iron structure. No participants indicated using a gazebo/marquee tent, as illustrated in Figure 6.25.
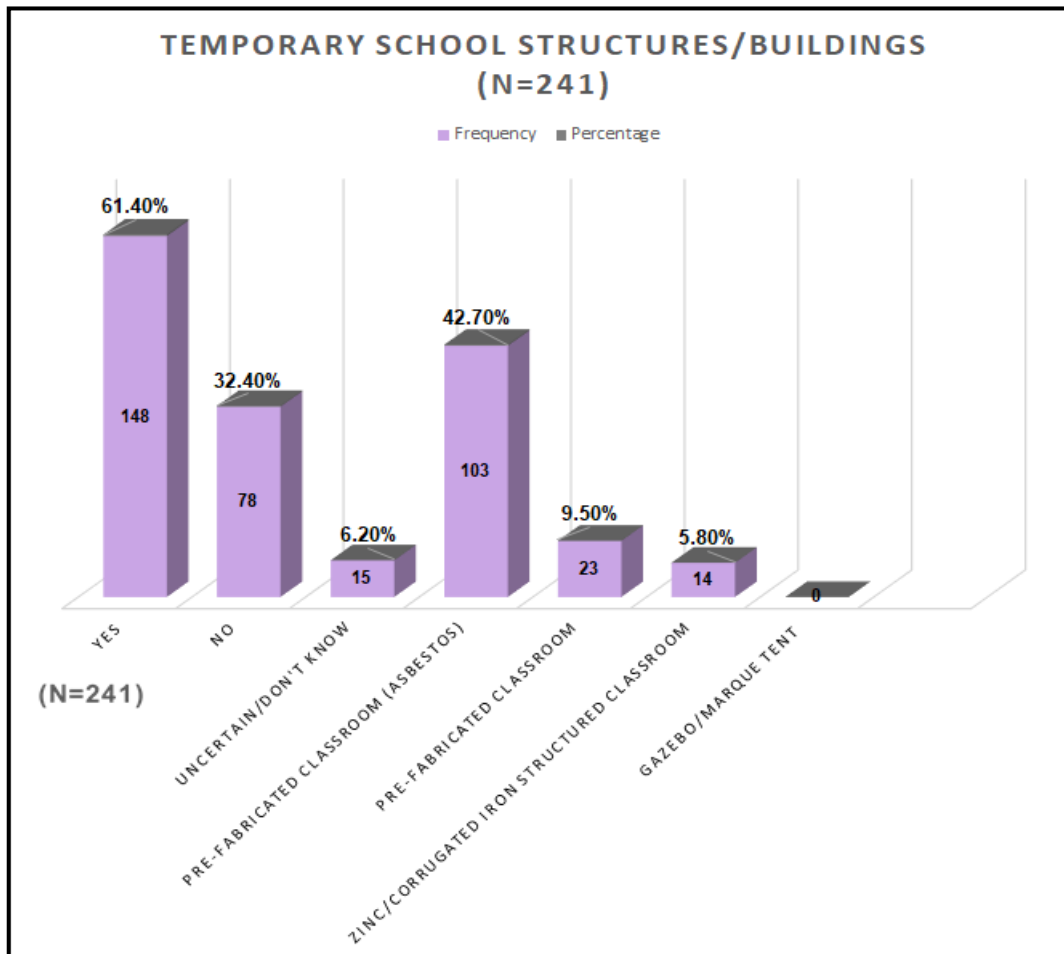
Figure 6.25: Temporary school structures/buildings

Source: Researcher's own compilation

In addition, question 42 allowed participants to list other types of temporary school structures where three (1.2%) participates indicated using mobile classrooms. Two (0.08%) participants making use of properly built square room, cement, stone and wood structure, aluminium and chromodeck structures respectively. One (0.04%) participant indicted making use of a metal structure as illustrated in Figure 6.26.
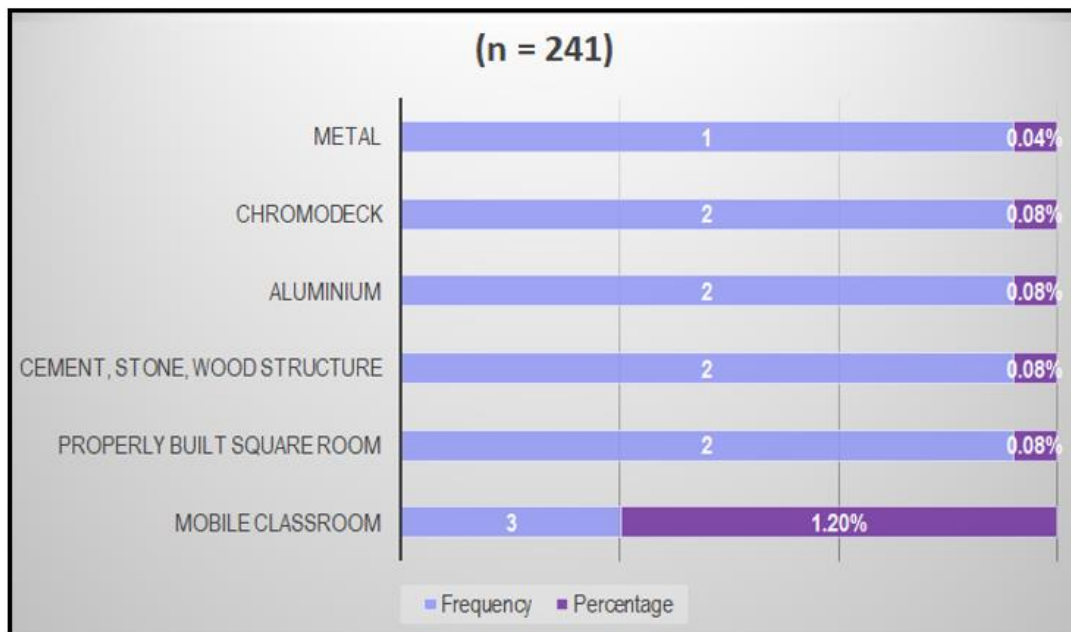
Figure 6.26: Other types of temporary school structures/buildings

Source: Researcher's own compilation

In Phase 1 (Section 5.2.5, question 27), one school indicated having knowledge of asbestos structures, while 10 of 14 schools (71.4%) indicated not having asbestos structures. However, as noted from question 41 (Figure 6.25), 42.7% indicated possible asbestos structures were used as temporary school structures (classrooms).

The discrepancies in responses between Phase 1 (Section 5.2.5, question 27) and Phase 2 (Section 6.3.5, question 41) regarding asbestos structures is concerning, as literature has indicated that one out of eight schools in Gauteng contains asbestos (NIOH, 2017). Furthermore, literature has estimated that 214 schools in Gauteng, clustered in townships, contain asbestos structures (NIOH, 2017, Shange, 2021). This is a significant health risk in schools that requires urgent attention by the DBE.

Question 42 allowed participants to add other temporary school structures/buildings used on the school premises, and 78 (32.4%) participants indicated the question was not applicable, three (1.2%) listed mobile classrooms, and two (0.8%) indicated properly built square structures. Other listings included cement, stone/wood structures (0.8%), aluminium 0.8%), chromodeck (0.8%), and metal (0.4%) structures.

In question 40, participants were asked if the school had a maintenance and facility plan, and 73% of the participants indicated there was such a plan (Figure 6.24). Question 43 linked to this question and enquired whether a temporary

structure/building was included in the schools' maintenance and facility plan. Interestingly, in response to question 43, 109 (45.2%) participants indicated they were uncertain, while 98 (40.7%) stated that the temporary structure/building was included in the school's maintenance and facility plan, and 31 (14.1%) stated it was not, as outlined in Table 6.26.

Table 6.26:   Facilities and maintenance plan for temporary (asbestos) school structures/buildings

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	98	40.7	40.7	40.7
	No	34	14.1	14.1	54.8
	Uncertain | Don't know	109	45.2	45.2	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

The next range of questions (questions 44 to 47) examined the presence of asbestos in schools. The use of asbestos has been banned in South Africa since 2008, yet there are still reports of asbestos being found in a large number of structures and buildings across South Africa. The literature has stated that one out of eight schools in Gauteng contains asbestos, and 908 schools in KwaZulu-Natal still have asbestos roofs (NIOH, 2017; Magubane, 2021). The probability of finding asbestos in structures and buildings that were built pre-2000 is substantial. The literature has indicated that a possible 21.7% of schools contain asbestos in Gauteng alone. Furthermore, it is stated in the asbestos eradication programme that 17 schools are in the planning phase, with eight schools in the implementation phase of the eradication programme (Grant & Otter, 17c; Shange, 2021).

In South Africa, asbestos safety is regulated under the Asbestos Regulations (ARs) of 2020 where regulation 3 outlines aspects of identifying asbestos, as previously outlined in Section 5.2.5. In response to the potential source of asbestos school structure/building indicated, question 44 established if participants are aware of asbestos structures/building on the school premises, while question 45 enquired regarding the reason for using asbestos school structure/building. In response to question 44, 103 (42.7%) participants were aware that school structures/buildings contained asbestos, while 74 (30.7%) indicated they were not aware of asbestos on

the school premises, and 64 (26.6%) were uncertain regarding the possible asbestos content of structures and facilities, as illustrated in Figure 6.27.
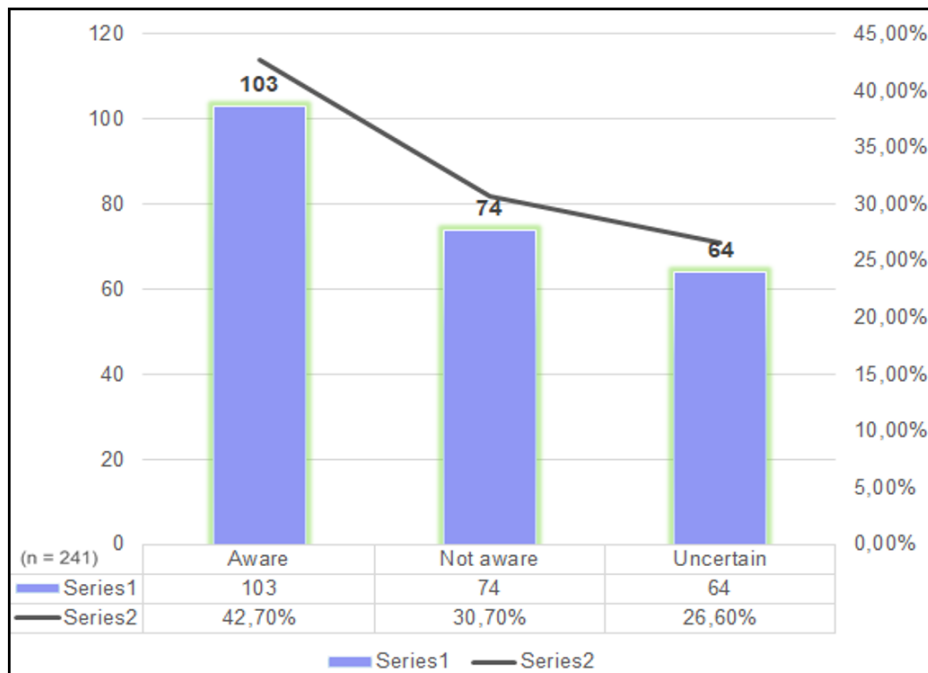
Figure 6.27:   Asbestos buildings/equipment

Source: Researcher's own compilation

Following from the previous question, question 44 enquired from participants what the reason was for using the asbestos school structure/building, and 83 (34.4%) stated that classroom teaching was the main reason for utilising such asbestos school structure/building. Interestingly, 79 (32,8%) were uncertain what the asbestos school structure/building was being used for, while 78 (32.4%) indicated the questions was not applicable, and one (0.04%) stated it was used for storage, as outlined in Table 6.27.

Table 6.27:   Reason for using the asbestos structures/building

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not applicable	78	32.4	32.4	32.4
	Uncertain	79	32.8	32.8	65.1
	Classroom teaching	83	34.4	34.4	99.6
	Storage	1	.4	.4	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

Cross-tabulating of questions 46 with question 44 and the Chi-Square test of independent indicated an association between the independent variable (X) of the participants awareness of asbestos structures/buildings on the school premises (question 44) and the dependent variable (Y) of whether these asbestos structures/building were considered to be a problem on the school premises (question 46). The Chi-Square test of independence is calculated as $X2$ (4, n = 241) = 13.025 (p<0.001). Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the awareness of asbestos structures/buildings (question 44) and whether the participant considers asbestos to be a problem on the school premises (question 46). Where the Kendall tau-b is valued at 0.207 (Table 6.28). Meaning, there is an insignificant relationship between the independent variable of the participants awareness (question 44) of asbestos and the dangers (question 46) associated with asbestos exposure where the participant's do not consider asbestos on the school premises to be a problem (Figure 6.28).

Table 6.28:   Question 44 versus question 46: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.025[a]	4	0,011
Likelihood Ratio	13,062	4	0,011
Linear-by-Linear Association	8,428	1	0,004
N of Valid Cases	241		

ı. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 3.85.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,207	0,061	3,285	0,001
	Spearman Correlation	0,215	0,064	3,411	<,001[c]
Interval by Interval	Pearson's R	0,187	0,064	2,949	.004[c]
N of Valid Cases		241			

Source: IBM (2022)
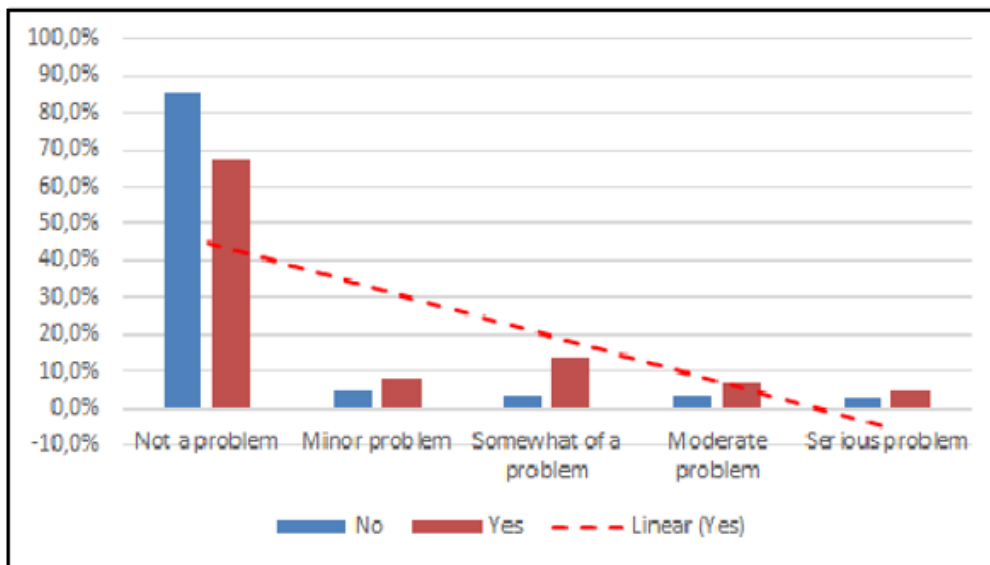
Figure 6.28:   Question 44 versus question 46: Linear relationship between the awareness of asbestos structures/buildings on the school premises (variable X) and whether asbestos structures/building were considered to be a problem on the school premises (variable Y)

Source: Researcher's own compilation

Similarly question 47 was cross tabulated with question 44 and the Chi-Square test of independence indicates an association between the independent variable (X) of the participants' awareness of asbestos structures/buildings on the school premises (questions 44) and the dependent variable (Y) related to the condition of the asbestos structures/building (question 47). The Chi-Square test of independence is calculated

as X2 (4, n = 241) = 105.192 (p<0.001). Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the participants' awareness of asbestos structures/buildings and condition observed related to these asbestos structures/building. Kendall tau-b is valued at 0.579 (Table 6.29). Meaning, there is a relationship between the independent variable of the participants awareness of asbestos structures/building (question 44) and the participants' observation (dependent variable) related to the condition of the asbestos structures/building (Figure 6.29).

Table 6.29:   Question 44 versus question 47: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	105.192[a]	4	0,000
Likelihood Ratio	119,192	4	0,000
Linear-by-Linear Association	89,329	1	0,000
N of Valid Cases	241		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.83.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,579	0,043	13,723	0,000
	Spearman Correlation	0,632	0,046	12,605	<,001[c]
Interval by Interval	Pearson's R	0,610	0,047	11,904	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
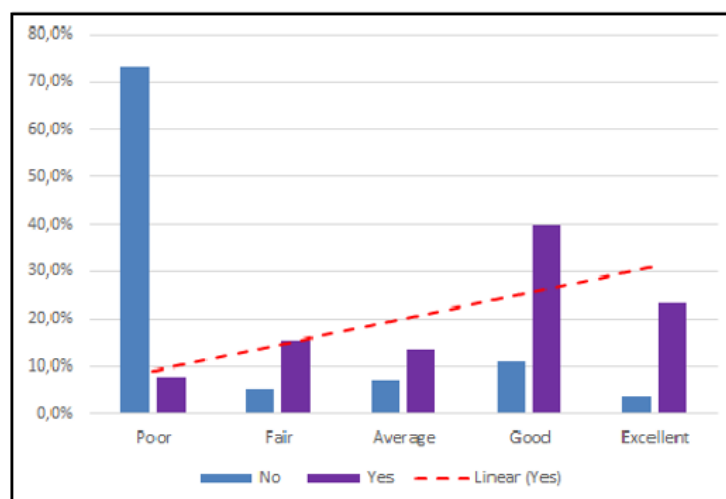
Figure 6.29:   Question 44 versus question 47: Linear relationship between the awareness of asbestos structures/buildings (variable X) and the condition of the asbestos structure/building (variable Y)

Source: Researcher's own compilation

In light of the health dangers of asbestos, the literature has indicated that many of the asbestos structures have been neglected, resulting in the exposure of asbestos fibres, that when inhaled by educators, scholars, and other persons in the vicinity, may result in asbestos exposure (Grant & Otter, 2017c). This asbestos exposure leads to a health risk and the development over time of asbestosis, a deadly respiratory disease (NIOH, 2017; NIOH, 2018).

Question 46 enquired from participants if they considered asbestos structures/buildings on the school to be a problem. A total of 115 (47.7%) participants did not regard asbestos structures/buildings as a problem, while 72 (29.9%) participants regarded the question as not applicable. Nineteen (7.9%) regarded the asbestos structures/buildings as somewhat of a problem, while 14 (5.8%) participants stated it as a minor problem, 12 (5%) participants regarded asbestos as a moderate problem. Interestingly, nine (3.7%) participants considered asbestos structures/buildings to be a serious problem, as outlined in Table 6.30.

Considering the literature and the health risks of asbestos, this is a concern to the researcher and requires further investigation. Question 47 determined the condition of the asbestos structure/building, and 91 (37.8%) participants indicated the question was not applicable, while 56 (23.2%) indicated they were in good condition, 29 (12%) indicated an excellent condition, and 24 (10%) indicated that asbestos structures/ buildings were in an average condition. Of the participants, 23 (9.5%) indicated a fair condition, and 18 (7.5%) a poor condition, as outlined in Table 6.30.

Table 6.30: Are asbestos structures/buildings a problem on the school premises and what is the condition of the asbestos structures, buildings, and equipment?

Do you consider asbestos structures/buildings on the school to be a problem on the school premises			
	Frequency	%	Cumulative %
Not applicable	72	29,9%	29,9%
Not a problem	115	47,7%	77,6%
Minor problem	14	5,8%	83,4%
Somewhat of a problem	19	7,9%	91,3%
Moderate problem	12	5,0%	96,3%
Serious problem	9	3,7%	100,0%
What is the condition of the asbestos structures, buildings/equipment?			
Not applicable	91	37,8%	37,8%
Poor	18	7,5%	45,2%
Fair	23	9,5%	54,8%
Average	24	10,0%	64,7%
Good	56	23,2%	88,0%
Excellent	29	12,0%	100,0%

Source: IBM (2021b)

Questions (No. 48 to 49) examined construction and maintenance work on the school premises, where section 37 of the OHS Act No. 85 of 1993 addresses acts or omissions by employees and mandatories (contractors). Section 17(2) of the OHS Act No. 85 of 1993 requires a written agreement to ensure compliance with the provisions of the OHS Act No. 85 of 1993 (Lexis Nexis, 2021:12, 17).

The construction regulation (CR) of 2014 addresses aspects such as the scope of construction work in regulation 2, regulation 3 addresses applying for a construction permit, while regulation 4 outlines the notification of construction work. In addition, regulation 5 outlines the duties of the client, regulation 6 deals with the duties of the designer, and regulation 7 refers to the duties of the principal contractor. Regulation 8 addresses aspects of supervision during construction, and regulation 9 the risk assessment of the construction site. The rest of the CR looks at aspects not necessarily related to a school environment, such as temporary work, excavations, demolition, tunnelling, scaffolding, and suspended platforms, rope works, and material hoists (Lexis Nexis, 2021:66-75).

In question 48, the participants were asked if they are aware of any construction/maintenance work taking place on the school premises. In response, 157 (65.1%) participants indicated that construction and maintenance takes place on the school premises, 64 (26.6%) indicated there was no construction and maintenance taking place, while 20 (8.3%) were uncertain if construction and maintenance was taking place on the school premises, as depicted in Figure 6.30.

Similarly, question 49 determined if the construction site was closed off (barricaded) to avoid incidents and/or injuries. As this is a school environment, it is essential that all precautions are taken to avoid unauthorised access by scholars to prevent potential unwanted injuries. Similar to the previous question, 154 (63.9%) participants indicated that the construction site was closed off in order to avoid unauthorised access, 73 (30.3%) participants were uncertain, and 14 (5.8%) indicated that the construction site was not closed off, as shown in Figure 6.30.
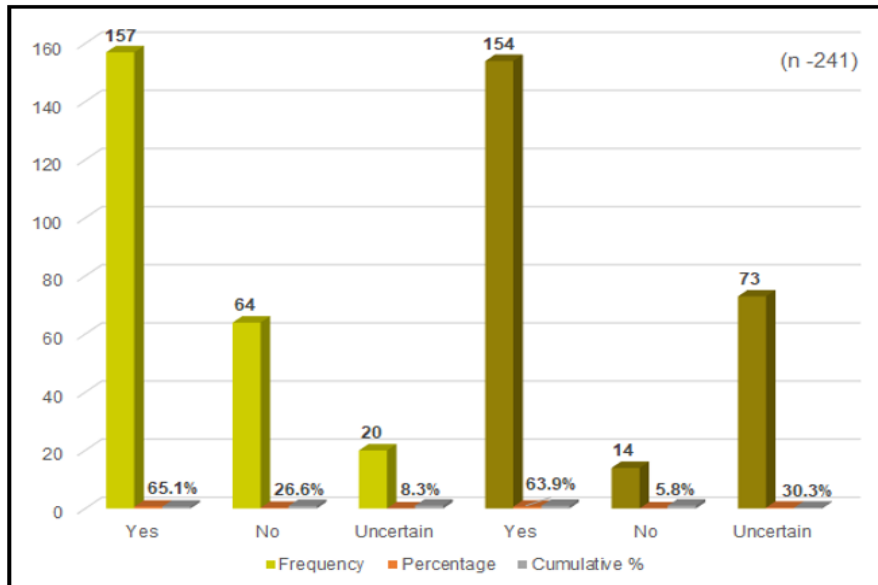
Figure 6.30: Construction/maintenance work taking place on school premises and was the construction site closed off to avoid incidents and/or injuries

Source: Researcher's own compilation

As indicated earlier, the OHS Act No. 85 of 1993, section 8(1) requires the employer to ensure an environment that is safe and without risk to employees' health. Another measure implemented by an employer to comply with this section of the OHS Act No.85 of 1993, is fire safety, and the availability of fire equipment. This aspect of the legislation is addressed in Section F, where fire safety and fire equipment were explored.

6.3.6 Section F: Occupational health and safety: Fire safety and fire equipment

The OHS Act No. 85 of 1993, Environmental Regulations for Workplaces (ERsW), regulation 9, addresses aspects of fire precautions and egress (escape), where at least two means of egress are required in relation to regulation 9(1)(g). The ERsW, regulation 9(1)(a and b) relates to emergency escape doors, and regulation 9(1)(d to f) relates to stairs and steps. Regulation 9(2) outlines the provision of adequate fire equipment situated in strategic locations (Lexis Nexis, 2021:162).

In combination with the ERsW, the PERs should be consulted, as fire extinguishers fall in the category due to the design pressure being equal to or greater than 50 kilopascals (kPa) (DoL, 2017:7; Lexis Nexis, 2021:305). In addition, these regulations also mention the South African National Standards (SANS) 1475 (2010) where sub-section 19 examines fire extinguishers. Furthermore, the SANS 10400 (2021) Part T

addresses the provision and maintenance of fire equipment, installations and fire protection systems (SABS, 2020:46).

In Phase 1 (Section 5.2.6, Section F), it was determined that at least one fire representative had been appointed in schools. One participant indicated the appointment of external service providers to manage the school's fire emergencies, should they occur. In Phase 2, question 50 determined if there are appointed fire representatives on the school premises, and 133 (55.2%) participants were uncertain, 69 (28.6%) stated there were no appointed fire representatives on the school premises, while 39 (16,2%) participants indicated that the school has appointed fire representatives on the school premises, as presented in Figure 6.31.

	Yes	No	Not applicable
Frequency	39	69	133
Percentage	16,2%	28,6%	55,2%
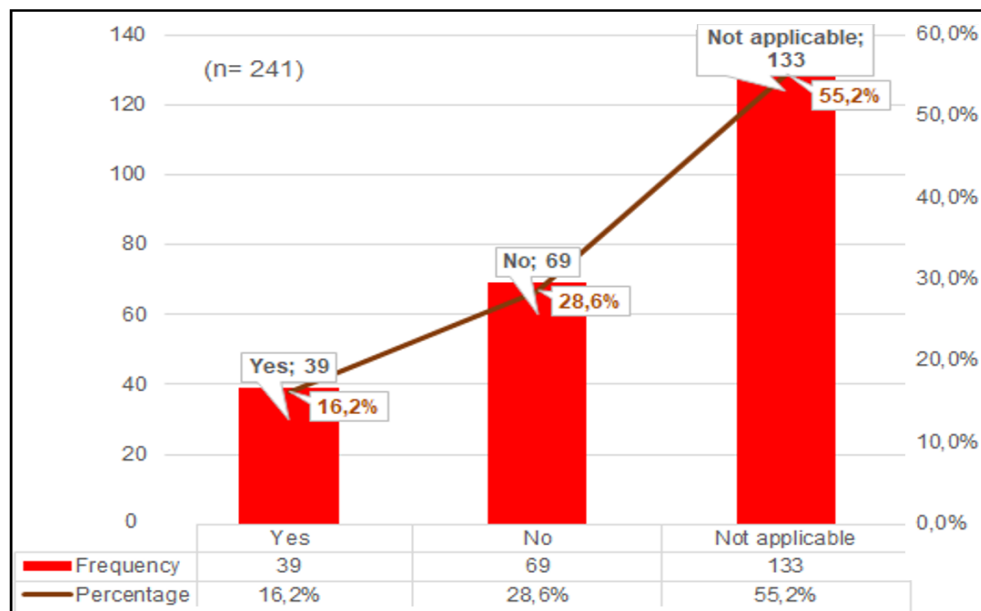
Figure 6.31:   Appointed fire representatives on the school premises

Source: Researcher's own compilation

Cross-tabulating of questions 50 with question 7 and the Chi-Square test of independent indicated an association between the independent variable (X) of the participants' understanding of the OHS Act No. 85 of 1993 (question 7) and the dependent variable (Y) and the appointment of fire representatives on the school premises (question 50). The Chi-square test of independence is calculated as $X2$ (4, n = 241) = 1,244 (p 0.494) and an asymptotic significance of 0.871. Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the participants understanding of the OHS Act No. 85 of 1993 and appointment of fire representatives where the Kendall tau-b is valued at -0.041

(Table 6.31). Meaning, there is no significant relationship between the independent variable of the participants understanding of the OHS Act No. 85 of 1993 and the appointment of fire representatives (Figure 6.32).

Table 6.31: **Question 7 versus question 50: Chi-Square test of independence with Kendal tau-b value**

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,244[a]	4	0,871
Likelihood Ratio	1,186	4	0,880
Linear-by-Linear Association	0,470	1	0,493
N of Valid Cases	241		

1 cells (10.0%) have expected count less than 5. The minimum expected count is 1.13.

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-0,041	0,061	-0,680	0,496
	Spearman Correlation	-0,045	0,067	-0,703	.483[c]
Interval by Interval	Pearson's R	-0,044	0,066	-0,685	.494[c]
N of Valid Cases		241			

Source: IBM (2022)
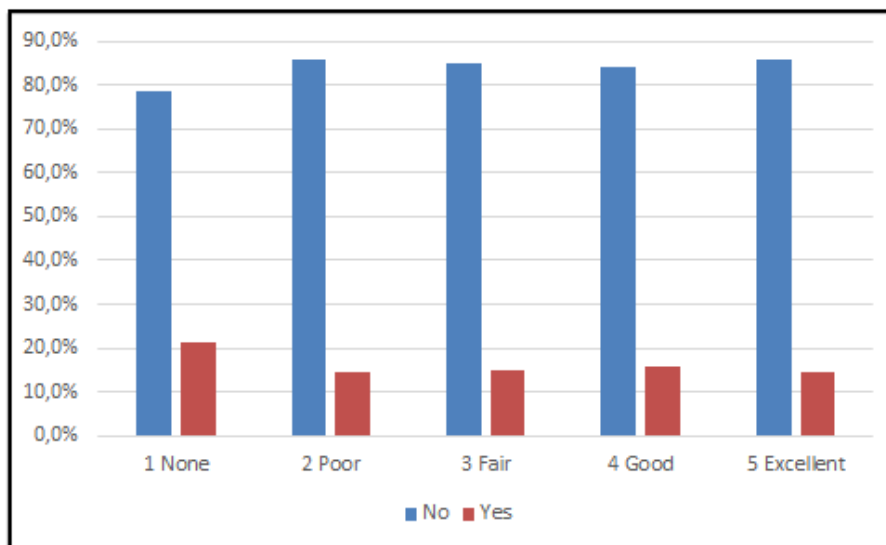
Figure 6.32: **Question 7 versus question 50: Relationship between the participants' understanding of the OHS Act No. 85 of 1993 (variable X) and the appointment of fire representatives (variable Y)**

Source: Researcher's own compilation

Question 51 established the number of fire representatives appointed on the school premises. As with the OHS Act No. 85 of 1993, the appointment ratio is one fire representative per 100 (1:100) employees (Lexis Nexis, 2021:12). Furthermore, firefighting facilities should be available in all vulnerable areas, such as schools, where

at least one in every 50 educators needs to have basic firefighting skills (Van Rooyen Attorneys, 2021).

It was noted in Phase 1 (Section 5.2.6, question 28), using the ratio of 1:100, most schools were non-compliant. It is concerning to note that in question 50, 111 (46.1%) participants indicated that there are no fire representatives appointed on the school premise. A total of 70 (29%) indicated that between one and three fire representatives had been appointed, while 33 (13.7%) stated more than 10 fire representatives were appointed. Additionally, 20 (8.3%) stated that between four and six fire representatives were appointed, five (2.1%) stated that between seven and nine fire representatives were appointed, as presented in Figure 6.33.
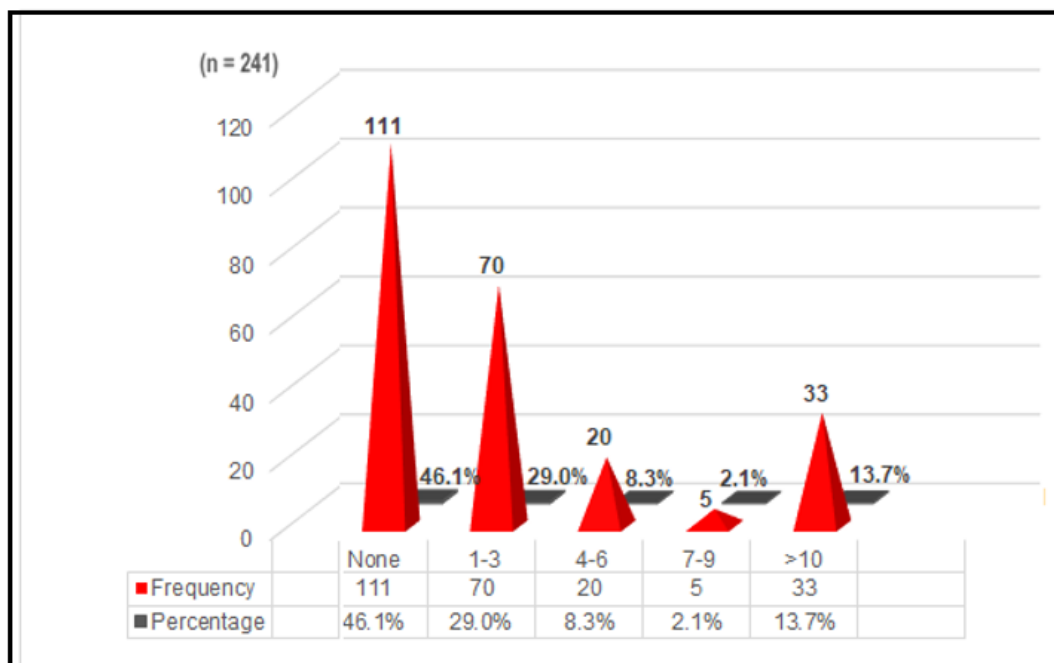
Figure 6.33:   Number of appointed fire representatives on the school premise
Source: Researcher's own compilation

Question 52 enquired who has been appointed as a fire representative, and 121 (50.2%) participants stated that educators had been appointed as the fire representative, while 12 (5%) indicated that support staff, five (2.1%) administrative staff, and one (0.4%) indicated that scholars had been appointed as the fire representatives.

An open-ended option allowed participants to include other appointees. Interestingly, 80 (33.2%) participants indicated the question was not applicable. Other listed

appointees included the appointment of 12 (5%) ground maintenance, four (1.7%) participants were uncertain, while three (1.2%) participants stated that the safety people/co-ordinator was appointed as the fire representative. Two (0.8%) participants stated that an external company had been appointed as the fire representative, and one (0.4%) indicated the appointment of the deputy head principal, as outlined in Table 6.32.

Table 6.32:   Who has been appointed as a fire representative?

	Frequency	%	Cumulative %
Educators	121	50,2%	83,4%
Support staff	12	5,0%	90,5%
Administrative staff	5	2,1%	85,5%
Scholars	1	0,4%	90,9%
Other			
Not applicable	80	33,2%	33,2%
Ground Maintenance	12	5,0%	96,3%
Uncertain	4	1,7%	100,0%
Safety people/Co-ordinator	3	1,2%	98,3%
External company	2	8,0%	97,1%
Deputy head principal	1	0,4%	91,3%

Source: IBM (2021b)

As required by the OHS Act No. 85 of 1993 and the ERsW, regulation 9(1), the employer should ensure a safe workplace for employees by providing expedited evacuation routes in the workplace as well as efficient and effective emergency equipment such as fire extinguishers. Question 53 established if fire equipment is readily and easily available in the school, and 207 (85.9%) participants stated that fire equipment was available, 19 (7.9%) participants were uncertain, and 15 (6.2%) participants indicated that it is not readily and easily available in the school, as depicted in Figure 6.34.
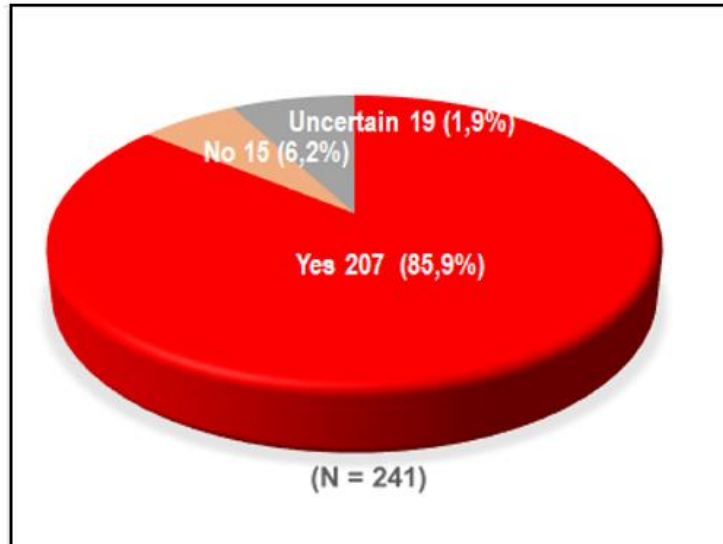
Figure 6.34:   Is fire equipment readily and easily available?

Source: Researcher's own compilation

Following from the previous question, question 54 enquired from participants who had indicated in question 53 that fire equipment was not readily and easily available what the reason was that fire equipment was not made available in the school. As noted in question 54, 15 (6.2%) indicated that the fire equipment was not available Interestingly, 207 (85.9%) participants stated in question 53 that they were uncertain why the fire equipment was not available, while 17 (7.1%) of participants indicated that fire equipment was old and needed replacement, while 12 (5%) participants indicated the question was not applicable, and two (0.8%) stated school negligence (Figure 6.35).
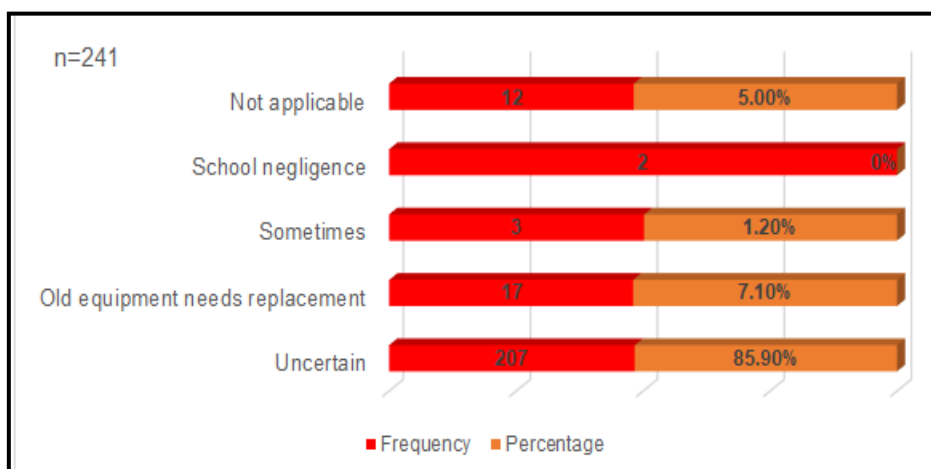
Figure 6.35:   Reason why fire equipment is not readily and easily available?

Source: Researcher's own compilation

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Question 55 establishes if fire equipment is maintained and serviced, where the PERs, regulation 19(2), states that no unauthorised person may service or refill a fire extinguisher unless employed by a permit holder and approved by the DoL's chief inspector. In addition, SANS 1475-1 (2010) requires that fire equipment is service at least annually. It also requires that water-, foam-, and powder-based fire extinguishers are pressure-tested every five years (SABS, 2010; Firesafe, 2019; Lexis Nexis, 2021:309). In response to question 54, 179 (74.3%) participants indicated that fire equipment is maintained and serviced, 47 (19.5%) were uncertain whether the fire equipment had been serviced, and 15 (6.2%) indicated that fire equipment had not been serviced, as depicted in Table 6.33.

Question 56 was an open-ended question that explored whether fire extinguishers on the school premises had been service within the required one-year period. As the questionnaire was completed during 2019 and 2020, the service dates noted should be evaluated for the same period, whereby the majority of participants listed a date during 2019 and 2020. In response to question 56, 135 (56%) participants were uncertain of the last service date, 70 (23.3%) indicated 2019, while 13 indicated 2020 as the service date, and four (1.7%) indicated that fire equipment had been service more than five years ago. Two (0.8%) indicated that fire equipment had been removed, while another two (0.8%) participants indicated 2018, and one (0.4%) indicated 2017 as the last service date, as outlined in Table 6.33.

Table 6.33: Fire equipment

Has fire equipment been maintained and serviced?			
	Frequency	**%**	**Cumulative %**
Yes	179	74,3%	74,3%
No	15	6,2%	80,5%
Uncertain	47	19,5%	100,0%

What was the last service date of fire extinguisher closest to your classroom?		
	Frequency	%
Uncertain	135	56,0%
2020	13	3,9%
2019	70	23,3%
2018	2	0,8%
2017	1	0,4%
> 5 years ago	4	1,7%
Not applicable	4	1,7%
No fire equipment has been removed	2	0,8%

Source: Researcher's own compilation

Cross-tabulating of questions 55 with question 7 and the Chi-Square test of independent indicated an association between the independent variable (X) of the participants understanding of the OHS Act No. 85 of 1993 (questions 7) and the dependent variable (Y) associated with the maintenance of fire equipment (question 55). The Chi-Square test of independence is calculated as X2 (4, n = 241) = 24.266 (p<0.001). Kendall tau-b correlation provided an indication of direction to determine a linear relationship between the participants understanding of the OHS Act No. 85 of 1993 maintenance of fire equipment where the Kendall tau-b is valued at 0.256 (Table 6.34). Meaning, there is a relationship between the independent variable of the participants' understanding of the OHS Act No. 85 of 1993 and the participants knowledge related to the maintenance of fire equipment (Figure 6.36).

Table 6.34:   Question 7 versus question 55: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.266[a]	4	0,000
Likelihood Ratio	27,927	4	0,000
Linear-by-Linear Association	16,575	1	0,000
N of Valid Cases	241		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 1.80.

Symmetric Measures

|		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	0,256	0,052	4,689	0,000
	Spearman Correlation	0,280	0,057	4,515	<,001[c]
Interval by Interval	Pearson's R	0,263	0,059	4,211	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
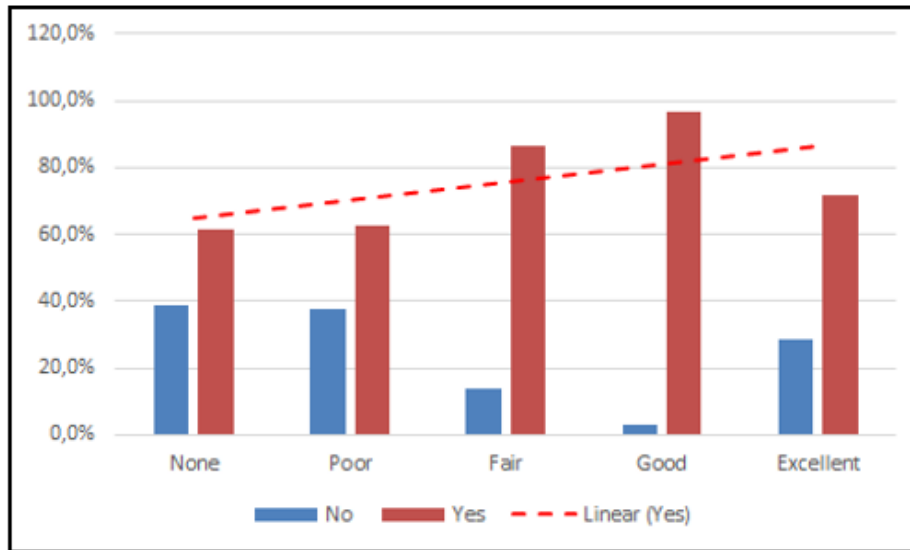
Figure 6.36:   Question 7 versus question 55: Relationship between the participants understanding of the OHS Act No. 85 of 1993 (variable X) and the maintenance of the fire equipment variable Y

Source: Researcher's own compilation

The employer has a responsibility to ensure that the workplace is safe for all employees. Part of that responsibility is to ensure that the school premises are safe. The supply of fire equipment allows employers to ensure the safety of the school premises as well as employees. However, it is one thing to have fire equipment available, yet another to know how to use such equipment; thus, fire training is important. Part of that training is conducting fire drills. Question 57 enquired if fire drills are conducted on the school premises. In response to fire drills being conducted, 181 (75.1%) participants stated that fire drills had been conducted, and 35 (14.5%) indicated that no fire drills had been conducted. Twenty-five (10.4%) participants were uncertain if fire drills had been conducted on the school premises, as shown in Figure 6.37.

Questions 58 enquired how often fire drills are conducted on the school premises to determine the legal imperative of conducting fire drills at least twice per year (Van Rooyen Attorneys, 2021). In response to question 58, 84 (34.9%) participants indicated that fire drills are conducted quarterly, 44 (18.3%) participants indicated that fire drills were conducted annually, 39 (16.2%) indicated six-monthly fire drills. Twenty-two (9.1%) stated they were conducted bi-monthly (every second month), and eight (3.3%) indicated monthly. Fourteen (5.8%) participants were uncertain as to how often fire drills were being conducted in the school, as shown in Figure 6.37.
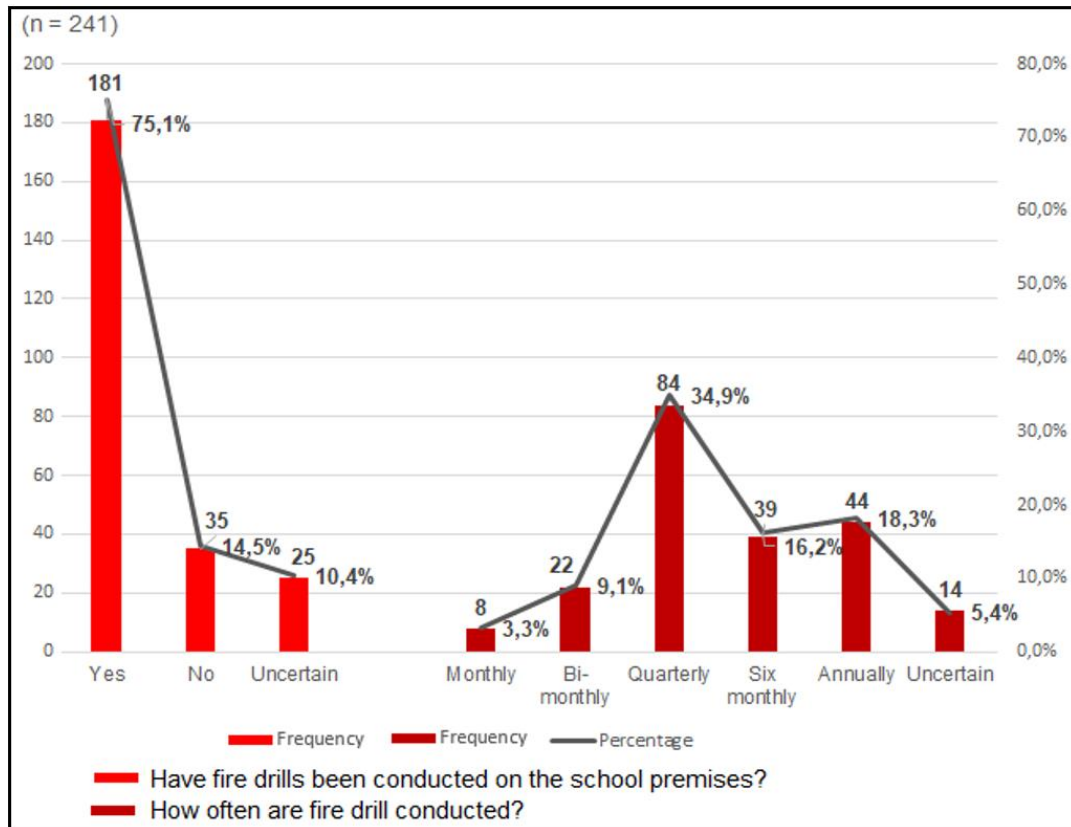
Figure 6.37:   Fire drills

Source: Researcher's own compilation

Cross-tabulating of questions 57 with question 50 and the Chi-Square test of independent indicated a significant an association between the independent variable (X) of appointed fire representatives (questions 50) and the dependent variable (Y) of the conducting of fire drills (question 57). The Chi-Square test of independence is calculated as X2 (4, n = 241) = 20,856 (p<0.001). Kendall tau-b correlation provides an indication of direction to determine a linear relationship between the appointment of fire representatives (question 50) conducting of fire drills (question 57) where the Kendall tau-b is valued at -0.294 (Table 6.35). Meaning, that there is an insignificant relationship between the independent variable of appointing fire representatives and conducting fire drill (Figure 6.38).

Table 6.35:   Question 50 versus question 57: Chi-Square test of independence with Kendal tau-b value

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	20.856[a]	1	0,000		
Continuity Correction[b]	19,050	1	0,000		
Likelihood Ratio	18,441	1	0,000		
Fisher's Exact Test				0,000	0,000
Linear-by-Linear Association	20,769	1	0,000		
N of Valid Cases	241				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.71.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Ordinal by Ordinal	Kendall's tau-b	-0,294	0,072	-3,679	0,000
	Spearman Correlation	-0,294	0,072	-4,758	<,001[c]
Interval by Interval	Pearson's R	-0,294	0,072	-4,758	<,001[c]
N of Valid Cases		241			

Source: IBM (2022)
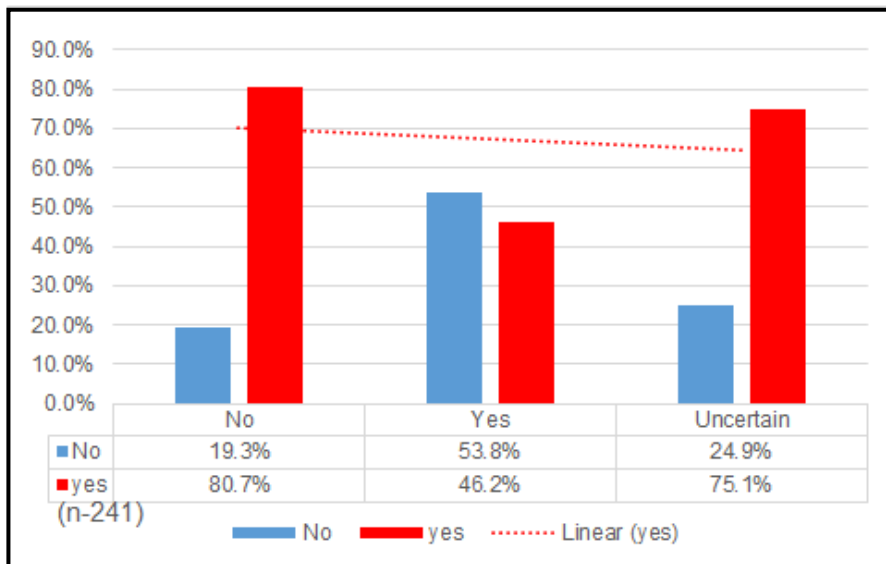
Figure 6.38:   Question 50 versus question 57: Relationship between the appointed fire representatives (variable X) and the conducting of fire drills (variable Y)

Source: Researcher's own compilation

As indicated throughout Section F, fire safety and fire equipment are legislated in the OHS Act No. 85 of 1993, where the employer (section 8(1)) is responsible for ensuring the health and safety of employees. In addition, the ERsW regulation 9(1) outlines fire precautions and means of egress (escape) in the workplace. Furthermore, SANS 10400 (2021) Part T of the NBRs addresses fire protection, and SANS 1475-1 (2010) sub-section 19 examines fire extinguishers (SABS, 2020:0). However, it is essential to consider the provincial by-laws drafted for each province and the local fire

department requirements when planning for fire safety. Section G of the questionnaire examined school noise in relation to the legislative requirements of the Noise-Induced Hearing Loss Regulations (NIHLRs) of 2003.

6.3.7 Section G: Occupational health and safety: Noise

The Noise-Induced Health Loss Regulations (NIHLRs) of 2003, under the OHS Act No. 85 of 1993 aim to assist with the diagnosis of occupational-related noise. The legally accepted noise-induced hearing loss rating limit or occupational exposure limit (OEL) is 85 decibels (dBA) over an eight-hour rating level (working day) (Lexis Nexis, 2021:181). As outlined in Section 2.7.7, the NIHLRs address several aspects of noise exposure, where regulation 5 outlines the duties and responsibility of persons exposed to noise. Regulation 6 outlines the assessment of potential noise, regulation 7 addresses noise monitoring, regulation 9 outlines noise zones, and regulation 10 the control of noise exposure. Furthermore, medical surveillance concerning occupational noise exposure is addressed in regulation 8 (Lexis Nexis, 2021:182-183).

Section G, questions 59 to 64 explored a range of questions related to noise exposure in specific schools' locations. Question 59 enquired from participants if they have experienced occasions where there has been excessive noise (having to shield your ears from the noise). In response, 120 (49.8%) participants indicated that they have never experienced noise, 68 (28.2%) indicated they almost never experience excessive noise, while 42 (17.4%) stated experiencing excessive noise sometimes. Nine (3.7%) indicated they often experience excessive noise, while two (0.8%) stated experiencing excessive noise continuously, as presented in Table 6.36.

Table 6.36:   Have you experienced occasions where there has been excessive noise?

		Frequency	Percent	Valid Percent	Cumulative Percent
	Have you experienced occasions where there has been excessive noise (having to shield your ears from the noise)				
Valid	Never	120	49.8	49.8	49.8
	Almost never	68	28.2	28.2	78.0
	Sometimes	42	17.4	17.4	95.4
	Often	9	3.7	3.7	99.2
	Continuously	2	.8	.8	100.0
	Total	241	100.0	100.0	

Source: IBM (2021b)

In question 60, participants were required to rank their experience to noise levels in the school hall where 97 (40.2%) indicate they that it was somewhat noisy in the school hall, 87 (36.1%) stated moderate noise in the school hall, while 41 (17%) stated high noise was experienced in the school hall. Fourteen (5.8%) participants indicated experiencing excessive noise, and two (0.8%) indicated experiencing extreme noise in the school hall, as depicted in Figure 6.39.

In addition, Question 61 asked participants to rank their experience to noise levels in the school corridors, and 85 (35.3%) participants stated moderate noise in the corridors, 72 (29.9%) somewhat noisy, 56 (23.2%) high noise, while 23 (9.5%) indicated excessive noise often in the corridors. Five (2.1%) participants indicated experiencing extreme noise in the school corridors as depicted in Figure 6.39.

Similarly, question 62 asked participants to rank their experience to noise levels in the school classroom where 107 (44.4%) participants indicated that they experience moderate noise in the school classroom, while 74 (30.7%) indicated somewhat noisy and 48 (19.9%) indicated high noise was experienced in the school classroom. Ten (4.1%) participants indicated excessive noise while two (0.8%) experiencing extreme noise in the classroom, as depicted in Figure 6.39.

Question 63 asked participants to rank the noise level experienced on the sports field, and 74 (30.7%) participants indicated moderate noise on the sports field, 62 (25.7%) indicated high noise, while 53 (22%) stated that they experienced excessive noise on the sports field. Forty-three (17.8%) participants indicated it was somewhat noisy, while nine (3.7%) indicated extreme noise on the sports field, as depicted in Figure 6.39.

The final question 64 in Section G, required participants to rank their experience to noise levels on the school grounds. Of the participants, 72 (29.9%) indicated high noise, 67 (27.8%) excessive noise, while 56 (23.2%) stated moderate noise on the school grounds. Twenty-eight (11.6%) participants indicated it was somewhat noisy, and 18 (7.5%) indicated extreme noise on the school grounds, as depicted in Figure 6.39.
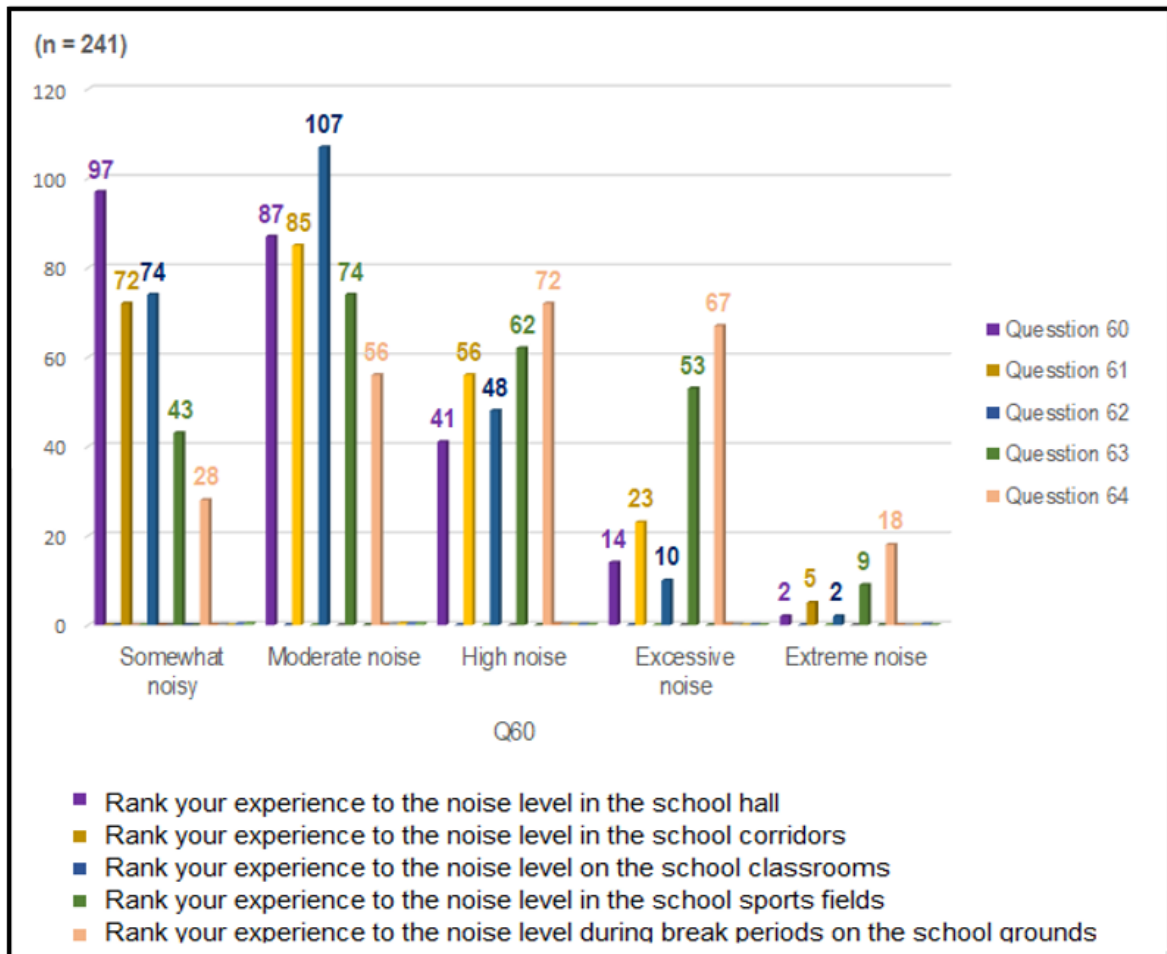
Figure 6.39: Rank experience to noise levels in the school

Source: Researcher's own compilation

The ERsW of 1987, was established as a minimum guideline for employers related to the management of environmental aspects, such as the thermal requirements in workplaces, ventilation, and illumination (lighting) (Lexis Nexis, 2021:159). Section H explored thermal, ventilation and illumination in schools.

6.3.8 Section H: Occupational Health and Safety: Thermal, ventilation and illumination

The ERsW, regulation 2 addresses thermal (temperature) requirements that state an employee may not work in an environment where the time-weighted average dry-bulb temperature, over a four-hour working period, is less than 6 °C, unless reasonable protective measures have been taken (Lexis Nexis, 2021:160). ERsW, regulation 3 outlines illumination (lighting) that is measured in Lux that refers to the level of light intensity/illuminance. Illumination in classrooms should be 200 Lux under the schedule

in the ERsW. Staircases and general working areas are measured at 100 Lux, inclusive of office facilities, such as reception areas and ablution facilities. While conference (school hall) and general offices are measured at 300 Lux, and computer and drawing facilities are measured at 500 Lux (Lexis Nexis, 2021:162-170). In addition, regulation 5 of the ERsW outlines ventilation where the employer should ensure adequate ventilation, either through natural or artificial means.

In light of the thermal requirements of regulation two in the ERsW, question 65 established from participants if air-conditioners are available in classrooms, and 153 (63.5%) participants indicated that they do not have air conditioners in their classrooms, and 57 (23.7%) participants stated that air conditioners were available in classrooms, as depicted in Figure 6.40.
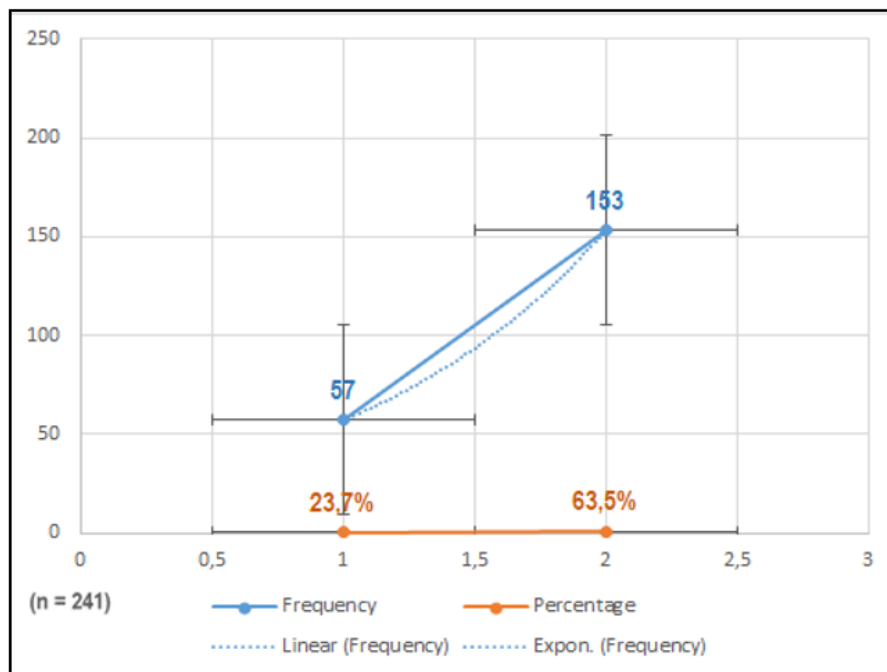
Figure 6.40:   Availability of air-conditioners in classrooms

Source: Researcher's own compilation

Additionally, the schedule in the ERsW of 1987 requires that the classroom has a Lux measurement of 200 Lux (Lexis Nexis, 2021:169). Question 66 explored if the lighting in classrooms allows for good visibility, where 86 (35.7%) participants strongly agreed, 74 (30.7%) agreed that lighting allows for good visibility, and 63 (26.1%) indicated that lighting was acceptable in classrooms. Twelve (5%) disagreed that illumination in classroom allow for good visibility, while six (2.5%) participants strongly disagreed that illumination allowed for good visibility, as illustrated in Figure 6.41.
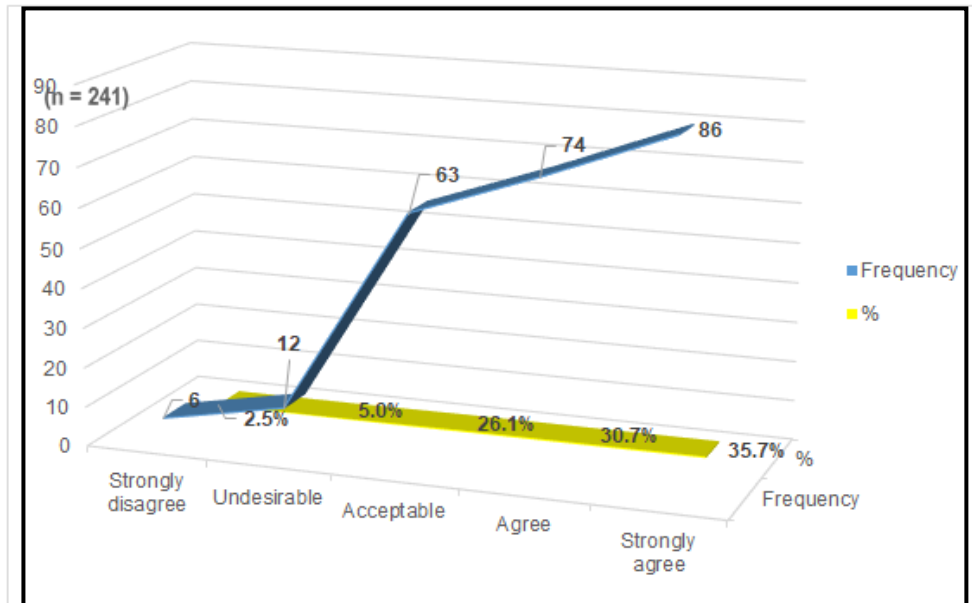
Figure 6.41: Does lighting in classroom allow good visibility?

Source: Researcher's own compilation

The majority of schools make use of fluorescent light tubes for artificial lighting. However, these fluorescent light tubes contain mercury (Hg), which is a liquid chemical element used in fluorescent light tubes. Mercury is categorised as a HCS under the RsHCSs of 2021 Table 3 on OEL - Restricted limits for hazardous chemical agents, where the OEL for elemental and inorganic forms of mercury over an eight-hour time weight average is set at 0.05 mg/m^3 (Lexis Nexis, 2021:242). Due to its toxicological properties, mercury is regarded as a dangerous substance; as such, educators and scholars can be exposed to inorganic mercury through inhalation of ambient air when the fluorescent light tubes are broken.

A study was conducted by the University of Johannesburg on the recommendations of handling fluorescent lamps in public schools in Johannesburg. The study was conducted in 38 schools around Johannesburg, and determined that none of the schools had written formal guidelines for the management of fluorescent light tubes. However, between 9% and 18% of the schools indicated that they had informal guidelines. The recommendation from the study was for the DBE, in liaison with the Health and Environmental Affairs and relevant non-governmental organisations to develop a fluorescent light management policy (Siziba, n.d.:15.).

Mercury is a natural occurring element that is found in air, water and soil; however, excessive exposure to mercury could have serious toxic effects on the digestive,

nervous and immune system of a person, inclusive of health effects related to the lungs, skin and eyes. In fact, mercury is one of the top 10 chemicals considered by the WHO to be a major public health concern, considering the health effects of mercury (WHO, 2022). Question 67 determined if fluorescent light tubes are used to create artificial light in schools. In response 166 (68.9%) indicated that fluorescent light tubes are used to create artificial light, while 41 (17%) were uncertain whether fluorescent light tubes are used to create artificial light, and 34 (14.1%) answered 'no', as shown in Figure 6.41.

The South African National Energy Development Institute (SANEDI) has indicated has new regulations banning the use of general lighting sources containing mercury in South Africa. The regulation on the compulsory specification for safety requirements of general service lamps (GSLs) Vernier Constant (VC) 9110 was gazetted on 01 March 2021 (Businessinsider, 2021; Gov.za, 2021c; RSA, 2021c; Qukula, 2021). With the new legislation, this will require further investigation.

Question 68 established if participants know if fluorescent light tubes contain mercury, where 144 (59.8%) participants were uncertain if fluorescent tubes contain mercury, 20 (8.3%) indicated that fluorescent light tubes contain mercury while 77 (32%) indicated that fluorescent light tubes do not contain mercury as illustrated in Figure 6.42.
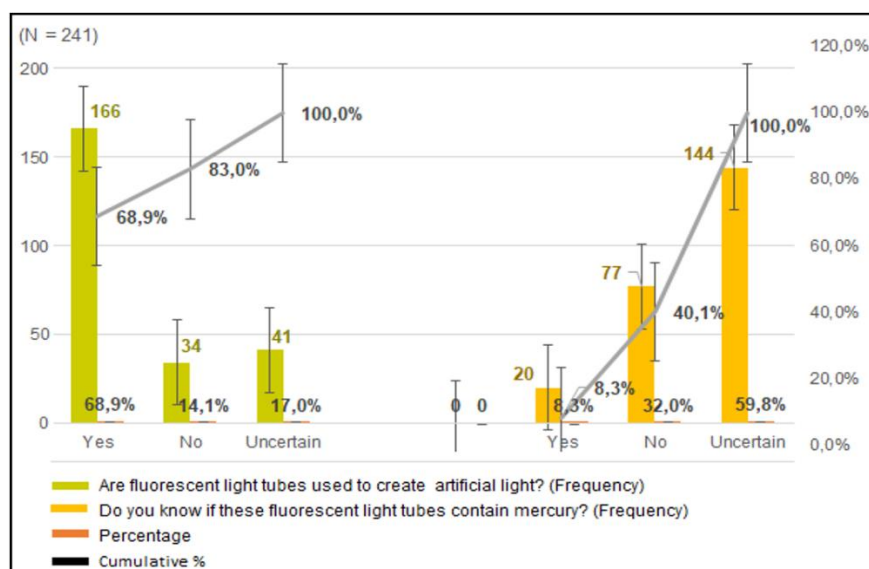
Figure 6.42: **Fluorescent light tubes used to create artificial light and do fluorescent light tubes contain Mercury**

Source: Researcher's own compilation

Mercury (Hg) is toxic to the environment and human health where the final question (question 69) examined how fluorescent light tubes are disposed of. In response to the question, 192 (79.7%) participants were uncertain how the fluorescent light tubes were disposed, 11 (4.6%) indicated municipal refuse, and four (1.7%) indicated an external contractor was used to dispose of fluorescent light tubes, as illustrated in Figure 6.43.
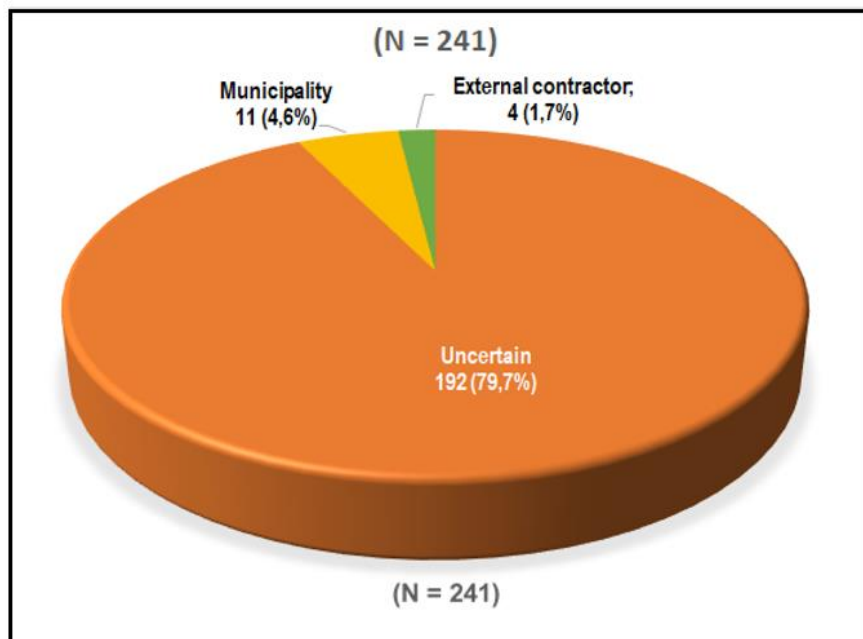
Figure 6.43:   Disposal of fluorescent light tubes

Source: Researcher's own compilation

Section I of the questionnaire included three open-ended questions which allowed participants to list their concerns and comments.

6.3.9   Section I: Occupational Health and Safety: Concerns and comments

In question 70, participants could state any safety concerns/challenges not mentioned in the questionnaire. The appointment of a dedicated safety professional in the school was mentioned and educator and scholar safety and security. A concern raised was the lack of safety knowledge, with specific mentions regarding formal safety and firefighting training. Another concern is that of resource maintenance related to school buildings and classrooms, as well as service providers that are not mindful of the school environment and equipment. In addition, the safety of educators in the parking area and outside areas of the school, and who is responsible for incidents that occur. Furthermore, a concern amongst participants was that of gate security and general

school security, where they mentioned open school access to parents and other visitors. Theft on the school premises was another concern raised by the participants, especially during open sports days.

A major challenge mentioned by the participants was scholars bringing weapons to the school that may result in violence, and even alcohol being brought onto the school premises. In addition, the lack of parental cooperation, and parents that do not abide by school rules were mentioned as concerns. A challenge in schools with multi-storey school buildings is the safety of scholars when leaning over the banisters and communicating with other scholars on the ground level.

A comment stated by a participant was that of scholars, parents and role players who have invested in the safety of the school, and its educators and scholars. Positive remarks and feedback given to the researcher indicated that the questionnaire was useful and insightful and that it would help the DBE regarding health and safety in schools.

Question 71 enquired from participants if they had any aspects related to school safety that they wanted to bring to the attention of the school district. Five participants indicated that asbestos buildings are a concern on the school premises as they reach high temperatures in summer, are very old, and in a poor state of repair.

Question 72 made provision for final remarks and questions. In the final section the researcher was thanked for conducting the study and for the in-depth questionnaire which gave educators an insight into safety aspects that they had never considered before.

The study's primary objective was to explore the legal imperative of the OHS Act No. 85 of 1993 to determine the nature and extend of safety implementation in schools. As such the questionnaire was developed to address the legal imperative of the OHS Act No. 85 of 1993 and the supporting regulations and to test the hypothesis. H_3 investigated the implementation of legislated school safety on creating a safe school environment. Where it was determined that 81.3% of school incidents, accidents, and injuries were reported to educators with 71.4% reported to school principal (Table 6.19). However only 26.6% is reported to the school district office and 11.2% was reported to the DoL (Table 6.20). Inherently first aid and the appointment of first aiders was managed effectively in schools (Figure 6.21). Furthermore, facility

management and the use of asbestos structures in schools remains a concern, where 61.4% indicated making use of temporary structures/building of which 42.7% was indicated as containing asbestos (Figure 6.25). Schools where not fully compliant regarding fire safety where 46.1% indicated that no fire representatives had appointed (Figure 6.33). Using the legislative ratio of 1:100, most schools were non-compliant related to the appointment of safety representatives, first aiders and fire representatives. It is therefore concluded that a relationship exists between compliance to the OHS Act No. 85 of 1993 and supporting regulations would lead to creating a safe school environment. H^3 is thus supported.

6.4 CONCLUSION

This chapter presented a discussion of the data analysis in Phase 2 of the current study. The chapter began with an outline of the descriptive statistics where the researcher made use of univariate and bivariate data analysis. This was followed by inferential statistics pertaining to cross-tabulation. The quantitative data analysis used a questionnaire to ascertain the participant's safety compliance and knowledge concerning the jurisprudence (legal) theory of the OHS Act No. 85 of 1993, in combination with safety theory. The quantitative data analysis commenced with Section A of the questionnaire which explored the demographic details of the 241 participants from public secondary schools in Gauteng. Section B explored the legislative health and safety knowledge of participants, while Section C explored legislative compliance. Section D examined safety specific regulations related to incidents, accidents injuries and first aid, and examined the legislative aspects of facilities in school. Section E explored the legislative requirements of facilities regarding the use of temporary structures/building and asbestos containing structures/building. The section further enquired into the facilities maintenance plan and construction/ maintenance on the school premises. Section F was related to fire safety and fire equipment, while Section G explored the legal aspect of noise in relation to the NIHLRs. Section H examined safety in relation to thermal, ventilation and illumination as prescribed in the ERsW. Section I allowed participants to list any concerns and comments for the researcher to note.

It is clear from the data analysis in Chapter 6 that participants do not have sufficient safety knowledge and that legislated safety compliance is not effectively implemented

in schools. The next chapter proposes a safety management framework for the implementation of legislated safety in schools.

CHAPTER 7:
SCHOOL SAFETY MANAGEMENT FRAMEWORK (SSMF)

CHAPTER 6. OVERVIEW

- **INTRODUCTION**
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    Phase 2: OHS legislation: Noise
  - Section H: Occupational Health and Safety. Thermal, ventilation, and illumination (lighting) (Phase 2)
  - Section H (phase 1) and Section J (phase 2): Occupational health and safety concerns and comments
- **SCHOOL SAFETY MANAGEMENT FRAMEWORK (SSMF)**
  - Stage 1 - Enabler
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  - Stage 3 - School Sustainable results
- **CONCLUSION**

7.1 INTRODUCTION

As indicated in previous chapters, the school principal has a legal responsibility and accountability in relation to the OHS Act No. 85 of 1993, section 8. The GDE and DBE, similarly, have legal accountability and responsibility related to the OHS Act No. 85 of 1993, sections 16(1) and 16(2), as investigated in Chapter 2.

The previous two chapters reported on the data analysis and findings of the two-phased approach: Phase 1 reviewed the qualitative data analysis and findings in Chapter 5, and Phase 2 the quantitative data analysis and findings in Chapter 6. In Chapter 1 (Section 1.7.3 and Table 1.1), the contribution of the study indicated the development of a school safety management plan (framework) to assist the GDE and DBE to create a safer school environment. This chapter focuses on the development of a school safety management framework (SSMF).

The developed SSMF makes use of 12 building blocks that are structured in two segments, namely, primary building blocks and supportive building blocks. The current study developed an SSMF with the intention that the GDE and DBE could use the SSMF as a blueprint on which to build and model its strategic school safety plan and school system safety management plan (SSSMP).

Therefore, the SSMF developed in this chapter proposes to guide the DBE, GDE and schools to manage its safety hazards, risks, and challenges through the identified building blocks based on a process safety approach. Process safety is multi-disciplined and incorporates several essential aspects to prevent and mitigate occupational incidents and accidents within hazardous processes. It is a systematic approach that is used to manage risks, and involves the integration of all the processes so that they work in synergy. The process safety approach is an integrated set of concepts and practices combined with risk management techniques for the purpose of safety risk management (The Safety Master, 2021).

7.2 SIGNIFICANCE OF THE STUDY

The study was initiated to investigate school safety, as legislated by the OHS Act No. 85 of 1993. The study examined school safety implementation through a mixed

method approach, utilising interviews and questionnaires to identify the gap in relation to the implementation of school safety.

The current study contributes to the body of knowledge through the identification of aspects affecting the legislated implementation of safety in schools, and to assist the DBE, GDE and schools in ensuring safety legal compliance. The primary research objective of the study, as indicated in Chapter 1 (Section 1.7.3), was to explore the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety. Three secondary objectives supported the primary objective in identifying safety risks and practices, identifying reasons and/or challenges related to why legislated safety had not been implemented, and finally, to develop a school safety management framework.

In order to evaluate the results in line with the study's objectives, the researcher made use of descriptive and inferential statistics to describe the features of the data. The descriptive statistics (Section 6.2.1) investigated the research problem to validate the legislative imperative of safety implementation in public secondary schools through the use of univariant frequencies (Section 6.2.1.1) and bivariant cross-functional tabulation (Section 6.2.1.2). A summary of the qualitative and quantitative data analysis and findings from Chapters 5 and 6 is presented in the next section.

7.3 SUMMARY OF THE QUALITATIVE AND QUANTITATIVE RESEARCH FINDINGS

The OHS Act No. 85 of 1993 formed the basis of the study to determine whether schools implemented safety as legislated by the OHS Act No. 85 of 1993. In addition, the SASA No. 84 of 1996 was compared to determine what aspects of safety it prescribed and how this was implemented in schools.

7.3.1 Section A: Sample detail

Section A was a generic section in both Phase 1 and Phase 2 of the study that explored sample detail and geographical location. The participants in Phase 1 (qualitative study, Section 5.2.1) comprised of school principals, deputy head principals and HoDs with a sample of 14 (n=14). The participants in Phase 2 (quantitative study, Section 6.3.1) comprised of educators with a sample of 241

(n=241). The schools used for the study were all located in Gauteng, as illustrated in Figures 5.1 and 6.4.

7.3.2 Section B: Occupational health and safety legislation: Knowledge

This section of the study is linked to the primary objective that explored the legal imperative of the OHS Act No. 85 of 1993 to determine the nature and extent of the implementation of legislated school safety. The questions in the interview guide and questionnaire ascertained the participants' knowledge regarding school safety concerning the jurisprudence (legal) theory of the OHS Act No. 85 of 1993.

Although the majority of participants indicated having heard of the OHS Act No. 85 of 1993, it became evident from the data analysis in Phase 2 (Section 6.3.2) that safety knowledge was lacking among educators. Although 69.7% of the participants in Phase 2 indicated having heard of the OHS Act No. 85 of 1993, only 2.9% indicated having an excellent knowledge, and 13.3% had a good knowledge of the OHS Act No. 85 of 1993, as illustrated in Figure 6.8. In fact, many participants in Phase 1 regarded safety as not being their responsibility but that of an appointed safety person (Section 5.2.7).

7.3.3 Section C: Occupational health and safety legislation: Compliance

This section is linked to one of the secondary objectives of the study, namely, the identification of risks and practices. Most schools indicated having a safety policy in place. However, it was perceived in the data analysis of Phase 1 (qualitative) that the safety policy was a standard operating procedure (SOP) addressing safety aspects in the school (Section 5.2.3). Most schools indicated having a good communication system in place through assembly periods, newsletters, and an electronic communicator known as the D6 Communicator. These methods are used for general day-to-day, weekly and monthly communication with educators, scholars and parents. The researcher is concerned that these communication methods are not related to emergency situations, such as those needed for evacuation in the event of a fire, or when incidents and injuries occur on the school premises.

As noted from the data analysis in Section 5.2.3 (question 9) and Section 6.3.3 (question 12), most schools indicated having at least one appointed H&S representative. The number of required OHS representatives was not in line with legislative requirements in all schools. However, without these appointed H&S

representatives receiving proper training (Section 6.3.3, question 14), the H&S functions may not be adequately carried out in terms of hazard identification.

The practice of H&S committee meetings is another point of concern. In Phase 1 (Section 5.2.3, question 12), the data analysis showed that while the majority of schools conduct meetings in some form, these meetings are not necessarily formal H&S committee meetings as prescribed by the OHS Act No. 85 of 1993. Although the participants indicated in Phase 1 that safety aspects are discussed, this confirms jurisprudence concerning the requirements of the OHS Act No. 85 of 1993 and the school principal's (employer's) responsibility to ensure school safety. In Phase 2 (Section 6.3.3, question 16), 1.2% of participants indicated that quarterly H&S committee meetings took place, 16.6& indicated monthly and 12.4% weekly. 1.7% indicated not having H&S committee meetings, as illustrated in Figure 6.13.

7.3.4 Section D: Occupational health and safety legislation: Incidents, accidents, injuries, and first aid

An inherent requirement of a school is to ensure that immediate first aid is available if a scholar, employee or visitor is injured while on the school premises. The data analysis clearly indicated good practices in relation to administering first aid to scholars, and the internal reporting process. A deficiency was noted in the external reporting process to the school district, the GDE and DoL. It is noteworthy to mention that the reporting of incidents to the DoL may be because schools rarely experience severe incidents. Furthermore, a gap noted in the data analysis was that responses to incidents and injuries did not include staff and educators, but only scholars.

7.3.5 Section E: Occupational health and safety legislation: Facilities

The incident that occurred in 2019 at Driehoek High School in Vanderbijlpark sparked a proactive response by some schools that took the initiative to have a structural engineering assessment conducted on the school building. However, many schools indicated that although facility problems have been reported, they are still awaiting assistance from the GDE.

An area of concern is the use of temporary asbestos structures (classrooms), where research has indicated that one out of eight schools in Gauteng contains asbestos. In addition, research indicated that 214 schools in Gauteng, clustered in townships,

contain asbestos structures (NIOH, 2017). It is alarming to note that many schools still contain asbestos structures even though the use of asbestos was banned in 2008. It may have health implications for educators and scholars later in life, not to mention legal implications to the DBE, GDE and schools, in terms of potential occupational disease compensation.

7.3.6 Section F: Occupational health and safety legislation: Fire safety and fire equipment

Fire safety did not appear to be high on the school agenda, in accordance with the data analysis. Although schools have the relevant fire equipment that is annually maintained, schools did not appear to have trained fire representatives. In Phase 1, (Section 5.2.6, question 28), seven of the 14 schools (50%) indicated having at least one educator appointed to manage fire equipment and fire-related events. Two schools indicated having a contract with an appointed external fire consultant and service provider.

The appointment of an external fire consultant and service provider is not in line with the legislative prescript of the OHS Act No. 85 of 1993 nor the provincial by-laws, as there is no trained fire representative on the school premises should a fire break out for immediate fire assistance and evacuation.

In Phase 2, 16.2% of the participants indicated having an appointed fire representative, as illustrated in Figure 6.31. in addition, 75.1% of the participants indicated that fire drills are conducted, where 34.9% are conducted quarterly, 16.2% every six months, and 18.3% annually, as illustrated in Figure 6.37.

7.3.7 Section G: Occupational health and safety: Noise

In Phase 2, the researcher explored the possibility of potential noise sources and noise zones in schools, in relation to the legislative requirements of the Noise-Induced Hearing Loss regulations (NIHLRs) of 2003. It is to be expected that noise would be an inherent part of any school; however, it was surprising to note from the data analysis in Phase 2 that educators did not regard noise to be a problem, as 49.8% of the participants in question 59 (Table 6.36) indicated that they had never experienced noise levels in the school to such a degree that they had to shield (cover) their ears. An additional 28.2% indicated that they had almost never experienced noise.

This section of the questionnaire (Phase 2) further explored the participants' experience of noise in specific areas, such as the school hall (question 60), where 97 (40.2%) participants indicated experiencing some noise in the school hall, with a further 87 (36.1%) indicating that they experienced moderate noise in the school hall. As for noise in school corridors (question 61), 107 (44.4%) participants experienced moderate noise, while 74 (30.7%) participants indicated it was somewhat noisy in their classroom.

Another interesting factor was that of noise on the sports field (question 63), where one would expect noise levels to be high 74 participants (30.7%) experienced moderate noise. While 62 (25.7%) participants experienced high noise and 53 (22%) participants indicated experiencing excessive noise on the sports field.

The final question (question 64) explored noise on the school premises during break periods, where it was once again interesting to note that 72 (29.9%) participants experienced high noise, 56 (23.2%) experienced moderate noise, and 28 (11.6%) experienced noise some during break periods, as illustrated in Figure 6.39.

7.3.8 Section H: Occupational Health and Safety. Thermal, ventilation, and illumination (lighting)

The use of fluorescent tubes containing mercury may be a concern, especially when these tubes are broken, and scholars have access to the mercury. As indicated in phase 2 (Section 6.3.8), mercury is categorised as an HCS under the RsHCSs of 2021, Table 3, where the accepted OEL for mercury over an eight-hour time weight average is set at 0.05 mg/m^3 (Lexis Nexis, 2021:242).

In response to question 68, 68.9% (Figure 6.42) of the participants indicated making use of fluorescent light tubes in the classroom. However, 59.8% of the participants were uncertain regarding the mercury content of fluorescent light tubes, while 79.7% were uncertain how these fluorescent light tubes are disposed of (Figure 6.43).

Due to the toxic effect of mercury in the environment, as well as its effect on human health, there are new regulations banning the use of general lighting sources containing mercury in South Africa (Businessinsider, 2021; Gov.za, 2021c; RSA, 2021c; Qukula, 2021). Further research is required concerning the new regulation regarding the compulsory specification for safety requirements of GSLs VC 9110

gazetted on 1 March 2021 regarding the banning of mercury-containing fluorescent lights tubes due to its mercury toxicity.

7.3.9 Section G (Phase 1) and Section I (phase 2): Occupational health and safety concerns and comments

A secondary objective was to identify reasons and challenges why legislated safety in relation to the OHS Act No. 85 of 1993 is not implemented in schools. From the data analysis, it became evident that although safety and security are seen as important in a school, it is not necessarily implemented to the letter of the law concerning the OHS Act No. 85 of 1993 and the jurisprudence (legal) theory as outlined in Section 2.3.1.

A legal theory aims to provide a framework of moral, societal, philosophical, and legal discourse for the purpose of conducting legal research and to expose legal solutions to complex legal problems (Wade, 2019). This fundamental jurisprudence (legal) research theory allowed the researcher to gain a deeper understanding of safety and education law. Through this jurisprudence (legal) research theory, the researcher found that there is no holistic safety system in schools. In addition, it was found that school systems (Section 5.2.7) are managed in silos, where school safety linked to the OHS Act No. 85 of 1993 is seen as the responsibility of the safety person and not that of the educator, as noted in Section 5.2.7.

In 2015, the DBE committed itself to the prevention and management of safety in schools through the introduction of the National School Safety Framework (NSSF). The NSSF was established to provide a management tool for school safety. However, this NSSF does not address safety as implied by the OHS Act No. 85 of 1993.

The final objective of the study was the development of a school safety management framework (SSMF) to assist the DBE, GDE and schools in attaining legal compliance to the OHS Act No. 85 of 1993. The next section discusses and provides an SSMF for the incorporation of legislated school safety.

7.4 SCHOOL SAFETY MANAGEMENT FRAMEWORK (SSMF)

The envisaged contribution to the research study was to develop a framework for school safety that the DBE and GDE can use in schools to ensure legal safety compliance. It became evident from the data collection in Phase 1 (Section 5.2.7) that

educators do not view legislated safety as their responsibility but rather as that of an appointed safety person. The SSMF aims to assist the DBE, GDE, school principals, educators, and other role-players with the implementation of legislated school safety, and will assist the DBE, GDE and schools through the mandated framework to comply with sustainable safety improvement practices. As noted from the literature review (Chapters 2 and 3), limited research has been conducted explicitly on how schools should manage and implement legislated school safety as prescribed by the OHS Act No. 85 of 1993. This section explores and proposes an SSMF based on the literature and the mixed method data analysis with the aim of contributing to the body of knowledge on school safety.

The proposed SSMF has been developed as a flexible and dynamic tool for the execution of safe school operations. It is intended that the SSMF would provide a holistic school safety system through the use of essential building blocks. These building blocks are connected to allow the school principal and educators to ensure optimised school safety. The structuring of these fundamental school safety building blocks will provide high performance sustained outcomes, such as school safety quality of life, physical and mental health, and a safe school environment.

Key outcomes of the SSMF would be to establish an awareness of dangers, hazards and risks in schools. When implemented, the SSMF will strengthen school operations and activities through improved hazard identification and risk assessment processes. The SSMF comprises of 12 building blocks, that was used as a foundation to develop the SSMF. These building blocks are: six primary and six supportive building blocks as linked to themes and code groups identified in Phase 1, Table 5.2, and clarified in Table 7.1 below.

Table 7.1:   Building blocks of a School Safety Management Framework (SSMF)

Primary building blocks	Description
Safety leadership	Leadership is the first primary building block, as leadership is a key driver for the successful implementation of any plan or framework. The primary driver of the SSMF in the enabler stage is the need for strong, active dedication and leadership. An inherent requirement of school management requires involved and committed leaders to advocate school processes and outcomes, manage change, and encourage a greater focus on school safety.
	School managers and educators should take accountability and responsibility for legislated school safety, as prescribed in the OHS Act No. 85 of 1993, section 8.
	Effective safety leaders require that management and educators ensure that safety hazards and risks are managed responsibly.
	School leadership should establish synergy and work collaboratively with all role-players. Furthermore, leaders should find confident enhanced solutions through rational decision-making to accomplish school safety goals and objectives.
	As noted in Phase 1 (Section 5.2.2, question 6), participants understood that they have a legal responsibility to ensure safety. However, participants indicated having a basic understanding of their legal roles and responsibility. As such, this lack of safety knowledge could lead to a lack of legislated safety leadership.
Strategic safety management plan	The strategic safety management plan should be the executable blueprint that paves the way by making goal-driven innovative plans within the legislative guidelines to provide a sustainable, safe school environment. The strategic plan should lead to effective interventions and implementation to ensure effective implementation of the SSMF through assigned responsibilities and resource allocation (Fadol, Barhem & Elbanna, 2015; Oschman, 2017:43).
	The strategic action plan should support the school's vision, mission, and key success factors as included in the school's safety policy and strategic safety plan.
	The data analysis in Phase 1 (Section 5.2.3, question 8) indicated that the school safety policies are perceived as being SOPs, addressing aspects of school activities, and not that of the school's strategic safety plans to ensure a safe school.
School safety hazard identification and risk assessment (HIRA)	Every school should conduct a school safety hazard identification and risk assessment (HIRA) to enable them to identify and quantify all their safety hazards and risks.
	The SGB, as a participant, should perform, facilitate and record internal HIRAs to comply with all legislative requirements.
	An inherent part of school safety is to identify hazards and risks in the school. The secondary objectives of the study were to identify safety risks and practices in secondary schools in Gauteng. Phase 1 (Section 5.2.3, question 14), and Phase 2 (Section 6.2.3, question 11) of the study were associated with the HIRA as an employer-

Primary building blocks	Description
	employee responsibility, as legislated in the OHS Act No. 85 of 1993, sections 8 and 14.
	Where no HIRA has been conducted, it would be advised that one is conducted as soon as possible to determine a baseline against which hazards and risks could be quantified.
School system safety management plan (SSSMP)	Part of any framework is to have a plan where the SSSMP should be integrated with the DBE's and GDE's strategic plans (Conti, 2010). The SSSMP should be the underlying management plan that is used to identify safety in schools.
	The purpose of the SSSMP is to give schools a holistic reflection of their school safety status to help reduce and control their safety hazards and risks. In addition, the SSSMP should give all school role-players visibility to help promote a school safety quality of life and a school safety culture within a school environment (Lee & Kim, 2015).
	Phase 1, Section C, (Section 5.2.3, question 16) was related to the operational system of communication in schools. Section D examined the incident, accident, and injury reporting systems used in the schools, while Section E examined the facility management system, and Section F, the fire safety system in the school.
	Similarly, Phase 2, Section D examined the incident, accident, and injury reporting system used in the schools, while Section E examined the facility management system. Section F examined the fire safety system in the school.
	Each of the systems examined in Phase 1 and Phase 2 appeared to be managed in silos and not as a holistic school system that is integrated into a strategic safety plan and SSSMP.
Safety audits	The school safety audit makes use of the SSSMP with its HIRA as a baseline to perform regular internal audits. This will assist schools in evaluating the overall safety status of the SSSMP and its effectiveness.
	Audits help identify continuous safety action measures to ensure compliance through safety control measures and the reporting of identified health and safety risks.
	These audits add value to legislative school safety and school safety work practice as part of safety planning, leadership, coaching, education, mentoring, and the futuristic process re-engineering of school safety systems and school management. In addition, internal school safety audits will add value in the creation of a holistic, proactive school safety system, SSSMP, and ultimately an effective SSMF.
School stakeholder satisfaction (SSS)	To reduce school hazards and risks, school-based stakeholder satisfaction should be a priority building block used by the DBE, GDE and SGBs.

Primary building blocks	Description
	Rigorous opportunities and actions should exist through the SSMF building blocks to reduce school hazards and risks through a participatory approach.
	The involvement of all the role-players and stakeholders will ensure collaboration to help schools align their legislative requirements with adequate resources to ensure the smooth implementation of the SSMFs' building blocks to achieve holistic school safety.
	Conducting SSS surveys will provide valuable insight into the school safety system and will assist schools in developing an effective SSSMP.

Supportive building blocks	Description
Engagement of people and relationship management	Employees are the basis of any organisation, and schools are no different. The involvement of employees (educators) is essential for the effective function of the schools, and as such, they should be equipped with the required knowledge and skills to provide an innovative and creative school environment.
	Strong and effective teamwork through engagement with school management, educators as well as other role-players is the key to a successful SSMF. In addition, to overcome safety challenges, schools need commitment for the implementation of legislated school safety through an effective strategic safety plan in support of the SSMF.
	The school can achieve a successful SSMF implementation by showing that school management cares through an attitude of empathy and engaging with educators to form trusting relationships and to share important information.
	People (educator) engagement and relationship management should be used to show the added value that can be achieved within the school through successful educator engagement towards achieving a holistic SSSMP.
Supportive structures and resources	Support structures and resources should allow schools to function effectively as an interconnected whole in one holistic SSMF. The SSMF should use the six primary building blocks to help shape and guide schools with their safety challenges by accurately allocating support structures and resources from the DBE and GDE.
	These support structures and resources are supplied by the DBE and GDE, which are crucial for any school to succeed. As such, these school-based support structures and resources should be coordinated through the school's strategic development to ensure future decision-making. In addition, this will ensure the collaboration between relevant stakeholders in aligning legislative safety requirements. Collaborative planning will also ensure that adequate resources and training are made available for the smooth implementation of holistic school-based support structures within the SSMF.

Supportive building blocks	Description
Safety change management and continuous improvement	In the current dynamic and ever-changing world, schools should be systematically and proactively managed, specifically in terms of internal and external technological expansions through regulatory requirement changes and reorganising procedures.
	As a support building block in the SSMF, it is essential to continually provide stable opportunities for sustainable preventative practices in schools to meet these challenges to ensure the improved preservation of the dynamic and ever-changing safety legislative requirements.
	All legislative changes should be proactively managed in schools to demonstrate the willingness to overcome school risks and challenges. Therefore, legislative safety and school changes should be incorporated in the DBE and GDE SSSMP to ensure the legal imperative of school safety.
	Part of change and continuous improvement is to quantify the effectiveness of change which can be achieved by conducting internal audits within the school to ensure continuous improvement.
	Evolution and change necessitate the interaction between three conditions: (1) to enable behaviour (capability), (2) to activate behaviour (motivation), and (3) to enable behaviour through opportunity.
	In an attempt to predict sustainability and to generate correct outcomes, safety change management should create a relationship with a new safety work culture.
System safety thinking	System safety thinking is a holistic approach that focuses on incorporating all systems into one functional (holistic) system. System safety thinking should incorporate the 12 building blocks (primary and supporting), which are interrelated into a holistic SSMF to address school hazards, risks, and challenges. When effectively implemented, the relationship and influence capabilities between the 12 building blocks should inherently strengthen one another through the system safety thinking approach.
	It will allow school stakeholders and role-players to plan, execute, and control safety challenges. The effective execution and application of the system safety thinking approach will exceed educator, stakeholder, and role-player expectations by delivering school outputs in a synchronised and sustainable manner. It will allow the DBE, GDE, schools, and educators to focus on one integrated and holistic system in an attempt to identify solutions to address legislated school safety hazards, risks and challenges.
Process safety approach and evidence-based decision-making	A process safety approach and framework should integrate "cradle to grave activities" that embrace a facilities life-cycle that is based on hazard identification and risk management control programmes (Render, 2018).
	It is essential that all schools conduct a HIRA to establish their safety hazards and risks for the development of a SSSMP.

Supportive building blocks	Description
	The HIRA process and safety process approach should be part of the school's fundamental and sub-processes to standardise, stabilise, organise, and optimise a continuous re-engineering and reviewing process to comply with the legislated safety requirements, as stipulated in the OHS Act No. 85 of 1993. In addition, these processes will help align strategic goals by giving better control of workflow and prevent school safety hazards and risks.
	As such, schools require well-designed interconnected safety processes to transform resources and legislative contributions into consistent, functional, and cost-effective outputs that will enable the upkeep and maintenance of holistic, safe schools within the legislative safety boundaries through the implementation of the SSMF.
Safety culture	Schools need to build an influential behaviour-based safety culture to create a holistic school-wide foundation for educators, scholars, and other safety stakeholders and role-players towards effective SSMF implementation.
	Schools should engage educators, stakeholders, and role-players involved by using an ownership culture, demonstrating the implementation of safety management principles, values, norms, attitudes, and collaborative efforts for achieving a culture of safety excellence. In addition, the safety culture should show profound concern for the well-being of stakeholders and role-players through communication, team participation, safety committee contributions, audit rectification actions, legal duties, and leading by example.
	The safety culture in the school should also have a coordinated influence on the unity of purpose and a sense of identity, together with an added value where educators, stakeholders, and role-players take ownership to ensure legislated school safety implementation through the SSMF.
	The integration of a safety culture into the SSSMP is critical to the success of the SSMF to ensure participative management and decision-making during the safety legislative change management and the implementation of the SSMF.

Source: Researcher's own compilation

The next section outlines a proposed School Safety Management Framework (SSMF) for the study.

7.4.1   Proposed School Safety Management Framework (SSMF)

This section discusses the third secondary objective to develop a School Safety Management Framework (SSMF) to assist the Department of Basic Education (DBE) and Gauteng Department of Education (GDE) to achieve legislated (occupational) school safety as prescribed by the OHS Act No. 85 of 1993 and supporting regulations.

This section explains the 12 building blocks in more detail, indicating the flexible and adaptive relationship between each of the building blocks. The 12 building blocks are divided into six primary and six supporting building blocks, as outlined in Table 7.1. The execution and implementation of the SSMF will differ from school to school and is dependent upon the active leadership from the school principal.

A theoretical approach was followed to identify these 12 building blocks and to construct an SSMF for the purpose of guiding the DBE, GDE and school principals as the accountable party and enabler of implementation. The six primary building blocks of safety leadership, strategic safety management, school safety HIRA, SSSMP, safety audits, and SSS form the core of the enabler, integration, and sustainable steps. These steps reinforce the role of the DBE, GDE, school managers and school principals in the management of school safety challenges through the integration of safety legislation and school safety policies. A school safety management framework (SSMF), as illustrated in Figure 7.1, seeks to meet the objectives of the current study to develop a school safety plan (framework) to assist the DBE, GDE school managers and school principals to achieve legislated school safety.
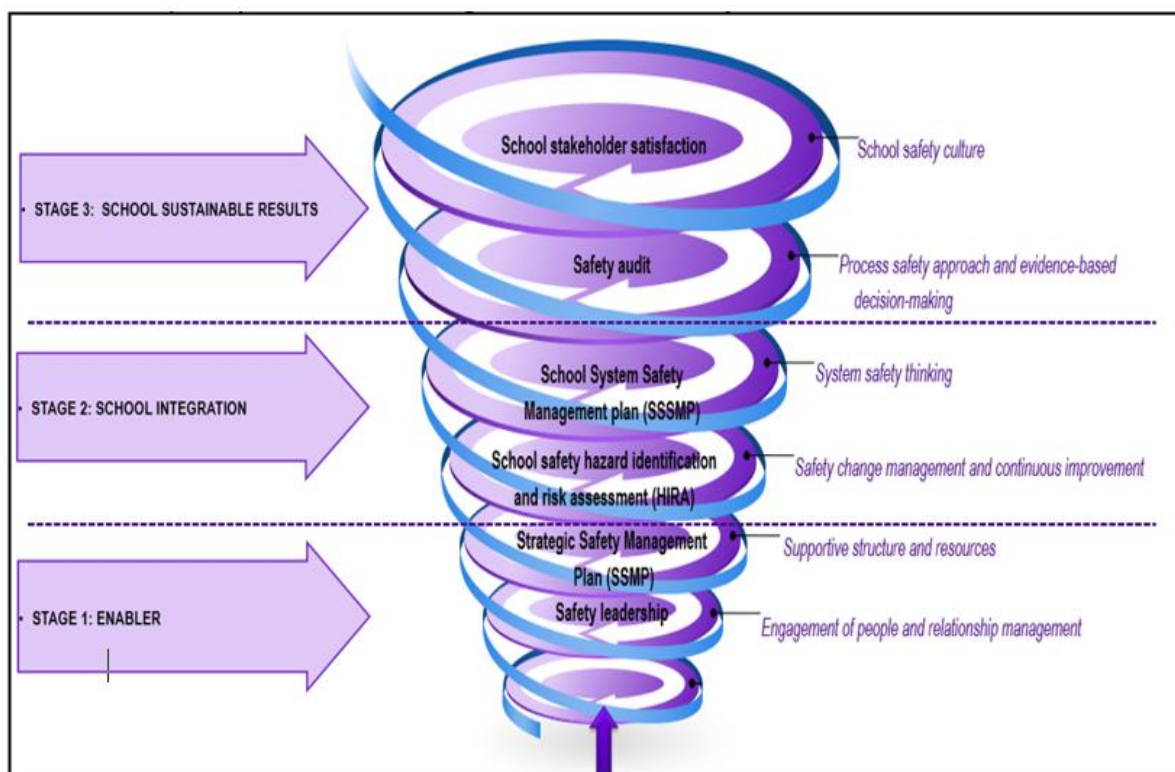
Figure 7.1:   Proposed School Safety Management Framework (SSMF)

Source: Researcher's own compilation

It is essential to create school awareness through the implementation of the three stages of the SSMF to create long-term success. The three stages are stage 1, enabler, stage 2, school integration and stage 3, school sustainable results.

7.4.1.1   Stage 1: Enabler

The enabler stage (stage 1) is the steering building blocks that drive the implementation of the SSMF. In addition, research has indicated that the building blocks used in the enabler stage should act mutually for the establishment of high-performance benefits (Birken *et al.*, 2017). Figure 7.1 illustrates this stage and its two building blocks: leadership, and the strategic safety plan.

The primary building blocks serve as enablers that describe the specific type of behaviour that brings visibility to work-related activities in support of effective delivery of these work activities. An enabler is a leader that allows managers to support their team and encourages the achievement of goals and objectives. As such, the first enabler in the SMMF is leadership, where the DBE and GDE should create a school environment that enables active participation, empowers educators, and encourages creativity and innovation to ensure employee satisfaction (Carruthers, 2022; Lathane, 2022).

Safety leadership

Leadership is about mapping out where you want to take your team. It is a key factor in the support of performance across a range of domains where different leadership styles are being researched. School leadership is under immense pressure to ensure successful school programme implementation. In addition, the concepts of school leadership, management and administration are closely aligned, and overlap. The role of the school principal as the top-tier leader is seen as of prime importance to improve school standards, promote school improvement, and school safety (Day & Sammons, n.d.:11, 13).

School leadership is the practice of enabling, influencing, directing and motivating educators as a team to achieve the school vision, mission, goals and objectives. Furthermore, good leadership in a school will adopt a positive and motivating school safety culture and school safety management programme. Good school leaders understand the importance of developing the school community. They empower educators and cultivate leadership skills amongst educators, and they create

collaborative learning and teaching environments within the school. In addition, school leaders are passionate about their work and their school and lead by example (Lathane, 2022).

A study by Grant and Otter (2017c) indicated that leaders and senior management should play an active role in schools through entrusted and assigned accountabilities, as well as responsibilities. Research conducted by Bush and Glover (2016) indicated that the fundamental legislation that governs schools in South Africa is the SASA No. 84 of 1996, where significant attention is given to school leadership and management. Bush and Glover (2016) stated that the DBE has introduced an advanced certificate in school leadership, and in 2007 they planned to enhance the qualification for principals by including an advanced diploma in education. The focus of the advanced certificate is on school leadership and management. Furthermore, the authors recognised the importance of developing a holistic and functional school system to improve school outcomes.

International research has also revealed that school leadership and management are important, and specifically, in schools with limited resource availability. An analysis by Zuze and Juan (2018) of school leadership made use of indicators that represent different aspects of leadership. The analysis revealed a distinct relationship between school leadership and management. Furthermore, research has shown that leadership is fundamental for any implementation. Communication, mentoring and training should encourage stakeholder engagement to create a strong ownership culture and competitive advantage (Gov.uk, 2018; Sony, 2018:243).

Leaders are encouraged to adopt a collaborative system by applying the supportive building blocks of change management and the process approach to address challenges in the implementation phase. Similarly, Xaba (2014:1587) indicated that leaders and managers should apply a safety culture of collective leadership to create a positive, supportive and safe working environment. In addition, Grant and Otter (2017c) argued that leaders and managers should be relationship-orientated through teamwork, change management, culture-forming, systems thinking, and should be task- and process-orientated to ensure the maximum participation of all stakeholders and role-players. Furthermore, Masitsa (2011:170-171) identified characteristics such as vision and goal creation, resource allocation, teamwork, supportive intervention, and continuous improvement of leadership.

The primary and supporting building blocks will allow operational plans to be created and implemented by the DBE, GDE, SGBs, and school managers in accordance with safety legislation and standards. The building block of safety leadership will assist schools in articulating to the next building block in the SSMF, namely, the strategic safety management plan.

In the data analysis of Phase 1, one of the themes (Table 5.2, theme 2) identified that the safety knowledge and awareness of participants was lacking, and leadership and responsibility were added as a code group, as noted in the participant responses to questions in the interview guide (Annexure F).

The second primary building block, the strategic safety management plan (SSMP) is discussed below.

Strategic safety management plan

Strategic planning is the process of setting goals and objectives. It is a process of developing action plans to achieve these goals and objectives and to ensure the attainment of resources. In addition, it is a document that allows a school to plan for the future and details how it intends to achieve its goals (Morrison-Porter, 2021). In the education environment, strategic planning requires both parental and community support, as well as legislative support. The GDE, DBE, school districts and schools use strategic planning to achieve goals and achieve academic success. Without adequate resources and parental and community support, and community engagement, the school strategic plan would fail (Morrison-Porter, 2021).

According to Oschman (2019:4), a strategic direction is a fundamental requirement to overcome the critical factors that influence safety, and which are impacted by stakeholders. Too often, strategic plans fail to guide the future of schools. This became evident during the 2020/21 Covid-19 pandemic, where the world, including schools, was forced to conserve resources. In a survey conducted by Morrison-Porter (2021) in 2020, it was found that 25% of schools planned to continue executing their pre-Covid-19 strategic plans. The author further stated that there are several approaches to strategic planning that are dependent upon school priorities. However, it was evident that the school should adopt a process, safety system and safety culture that is best suited to the school.

A strategic safety plan is a systematic approach that a school takes to ensure school safety. It is a high-level plan that is developed to assist managers and educators to meet the strategic safety goals of the DBE and GDE. The legislative mandate that governs the strategic plan of the DBE is the NEPA No. 27 of 1996 and the SASA No. 84 of 1996, as amended in 2011. In addition, the NDP 2030 is the blueprint to address challenges in South Africa, where chapter 9 of the NDP 2030 addresses the improvement of education, training, and innovation (NPC, n.d.).

When developing the SSSMP, the DBE and the GDE should use the national plans to establish direction related to school safety. The strategic safety management is the process whereby the school envisions its future direction and develops procedures to reach these future goals and objectives. As such, the function of the strategic safety management plan in the SSMF should be to align the aspects of the primary building blocks of school strategy, school safety HIRA, and school system safety management. Strategic safety management planning ensures that the school's future is not based on conjecture and presumption, but is a well-thought-out plan that has been carefully considered and researched. The strategic safety management plan also links to part of the integration that is closely linked to leadership and management commitment.

Furthermore, it supports the safety goals and objectives, and guides the safety team to ensure a standardised safety approach (HSE, 2020). It is essential to address the safety hazards, risks, and challenges to incorporate a safety culture in schools. The strategic safety plan also requires the integration of well-defined long-term goals, objectives, timeframes, resources, financial support, change management, safety risk management and system safety thinking that drive the strategic process (Busby, 2018).

The interconnection and interdependence between safety leadership and the strategic safety plan should incorporate the six supportive building blocks to enhance the emphasis on the implementation of the strategic safety plan. Research conducted by Masitsa (2011) and Xaba (2014) found that innovative and futuristic results should be interconnected within the strategic safety plan to ensure long-term success.

Similarly, the strategic safety plan should be managed through the GDE and the DBE to ensure school accountability, participation, stability, and transparency. In addition, it has been predicted that the supportive building block of system safety thinking would

be necessary during the implementation of the strategic safety plan to strengthen the execution of the plan. It furthermore acknowledges the connection of the flexibility of the building blocks within the SSMF. The indication is that a strategic safety plan with realistic goals and objectives will provide effective and continuous solutions through risk reduction in schools (Suarez, Calvo-Mora & Roldán, 2016:523-533).

The data analysis of Phase 1 (Table 5.2) found that strategic safety planning formed part of the code group on legislative and policy compliance (Theme 1), as well as the lack of an holistic, proactive school system (Theme 2). Integrated with the six supportive building blocks, strategic safety should adopt tenure through safety leadership and strategic safety planning.

The next building block in the SSMF is the school safety hazard identification and risk assessment (HIRA).

7.4.1.2   Stage 2: School integration

The foundation of the SSMF was set in stage 1 through effective safety leadership and the development of a strategic safety plan. The integration stage (stage 2) comprises of the two building blocks in the SSMF (Figure 7.1) beginning with a school safety hazard identification and risk assessment (HIRA).

School safety hazard identification and risk assessment (HIRA)

Schools have an inherent responsibility to ensure the safety of scholars on the school premises, while at the same time creating hazard and risk awareness not only amongst educators, but scholars as well. Safety should be a way of life, and safety education and risk should be integrated as part of the school curriculum. As such, a system safety approach to managing safety hazards and risks will enable schools to adhere to the safety legislation with the minimum of effort. This legislative safety responsibility is prescribed in section 8 of the OHS Act No. 85 of 1993, where employers (DBE, GDE and school principals) have to ensure that the school environment is safe and without risk to the health and safety of educators and scholars. In addition, section 8(2)(d) of the OHS Act No. 85 of 1993 requires that employers identify the hazards and risks in the workplace.

Oschman (2019:6) indicated that a gap assessment should be conducted when developing the strategic safety management plan to collect relevant information. It will

ensure that risks are made visible and provide information related to the location of the hazards and risks and available resources to minimise and mitigate the risk. The fundamental purpose of the HIRA is to allow schools to identify and prioritise opportunities and risks. As indicated in section 8(2)(d) of the OHS Act No. 85 of 1993, it requires from employers to determine the damage the hazard or risk as well as the impact of the hazards/risks on health and safety. Furthermore, employers should identify corrective action to minimise and mitigate these hazard or risk. In addition, a cost analysis may be required concerning the damage caused.

In Phase 1 (Table 5.2), the data analysis identified that schools lack a holistic, proactive school system (Theme 3) that link a lack of accountability and responsibility related to school safety. Even though participants indicated they had a safety responsibility, their responsibility was not evident as per the letter of the law in relation to the OHS Act No. 85 of 1993. Responsibility was indicated in relation to security safety and general school safety.

As previously indicated, safety is an inherent responsibility of education that includes the safety of scholars, educators, other staff members, stakeholders, and role-players, such as parents. As proposed by the HSE, a five-step process safety approach and change management process is recommended in the workplace, as illustrated in Figure 7.2, to ensure a responsible school safety culture.

STEP 1
• Hazard identification and risk assessment (HIRA)

STEP 2
• Specific assessment notes related to the hazard and/or risks

STEP 3
• Assesment of the different types and levels of safety hazards and risk

STEP 4
• Accurate and detailed record-keeping of safety findings

STEP 5
• Frequent safety reviews and audits
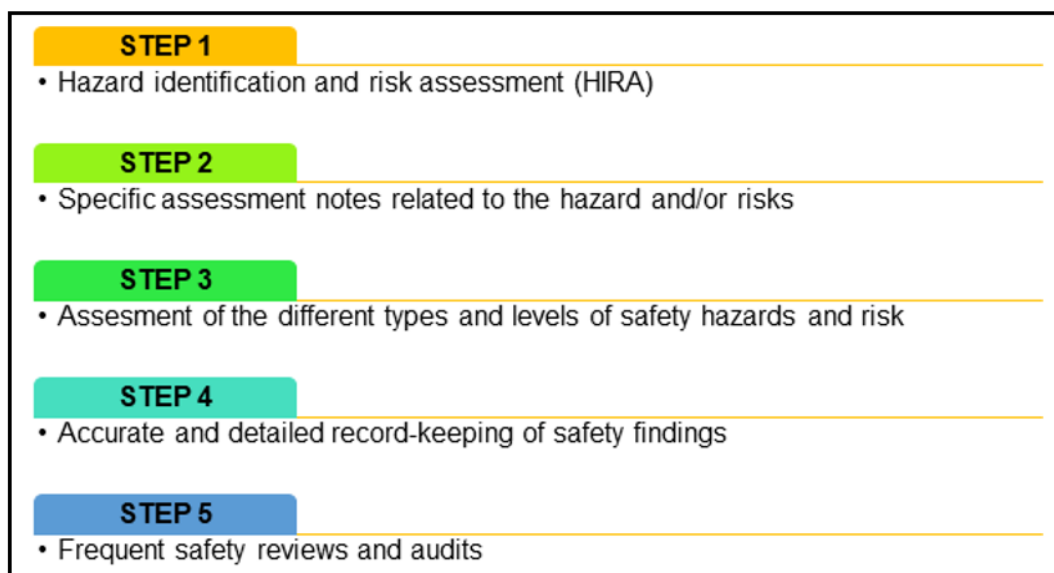
Figure 7.2:   HSE five-step process to the Hazard Identification and Risk Assessment (HIRA)

Source: Researcher's own compilation from text in RoSPA (n.d.)

As shown in Figure 7.2, these safety steps have been incorporated into the proposed SSMF, apart from step 4 that is an inherent part of the SSSMP, the HIRA, and safety auditing. Moreover, safety leadership and the strategic safety plan of stage 1 should drive the HIRA in an effort to close the safety gaps identified. In addition, the completion of the HIRA in stage 2 articulates the formulation and development of a system safety management plan (SSSMP). This SSSMP establishes the actual status of school safety in the SSMF.

School system safety management plan (SSSMP)

It was indicated in stage 1, safety leadership, the school's top and senior management should show commitment and take accountability and responsibility for school safety through the strategic safety plan. The HIRA discussed in the previous section allows for visibility about school safety, hazard, and risk exposure. The HIRA should enable the school to develop an internal school system safety management plan (SSSMP) with action steps to rectify, minimise, and mitigate the identified safety hazards and risks.

A safety management system is designed to ensure the health and safety of the workplace. It is a planned set of policies, procedures, operations, and actions that forms the framework for managing school safety. There are aspects to creating and maintaining safety in any environment. Due to its inherent environment, schools may be a greater challenge. A SSSMP should incorporate all school systems into one holistic system plan that ensures a safe school and working environment.

In addition, the SSSMP should be integrated into the school's strategic and operational plans and safety processes to guide the school's actions and form the basis of its legislative safety compliance. It should be an integral part of the day-to-day functioning and management of a school that is integrated into the core school operational systems. The SSSMP should define clear responsibilities of different roles to stakeholders to ensure the effective coordination of resources based on priorities as identified. It should also ensure that educators are competent in hazard identification, risk assessment, risk injury, and the implementation of safety controls to eliminate school hazards and risks.

Oschman (2019:10) indicated that resource elements should be articulated under specific critical key performance areas and action elements to ensure success. The

author listed several action elements that can be adapted for a school environment, as follows: (1) action timetable, (2) documented control, (3) monitoring and reviewing, (4) execution of accountabilities and responsibilities, (5) school procedural development, (6) safety inspections, (7) safety maintenance, (8) on the job safety training, (9) contingencies and emergency process, (10) risk management planning, (11) compliance of safety legislation and standards, (12) safety trend analysis, (13) challenges affecting the SSSMP and SSMF, and (14) safety communication. The author further commented that each of the action elements listed is required to establish a comprehensive school safety tool kit and safety culture in order to implement the SSSMP and SSMF.

Oschman (2019:4-5) recognised the support of other authors (Sivakumar, Devandasen & Murugesh, 2013) in terms of safety SOPs to create a safety culture in schools through a system thinking approach and safety change management. In addition, the drafting of an SSSMP should be standardised through the re-engineering of these action elements as listed. In essence, a safety management system should consist of six elements, as follows: (1) the safety plan, (2) safety policies, procedures, and processes, (3) safety training, (4) safety monitoring, (5) safety supervision, and (6) safety reporting (Weekes, 2017).

In the data analysis of Phase 2, question 11 examined the participants' responses to hazard identification, where 65.1% of the participants indicated that they were aware that hazards needed to be identified (Table 6.6). In addition, in question 18, 70.5% indicated that inspections were conducted on the school premises. Furthermore, 42.3% of the participants were uncertain what hazards and risks are identified (Table 6.13). A full list of reported hazards/risks can be viewed in Table 6.16.

According to Moir (2018:5), school principals require strong leadership to optimise the implementation of the SSSMP. The author further indicated that the school principal should chair the safety programme and be the fundamental body of knowledge to sustain school safety to increase the well-being of the holistic school environment.

Part of the SSSMP is the development of a safety file that should be a record of information that focuses on the management of health and safety. The safety file should contain vital information that proves safety compliance and would protect the employer from criminal liability. Safety files will differ from school to school. However,

there is basic generic content that could be used in the development of a safety file. The following is content to be included in a safety file:

- Copy of the OHS Act No. 85 of 1993

- DBE and GDE school occupational health and safety policy

- Safety standard operating procedures (SOPs) and safety work procedures

- Emergency preparedness and response

- OHS Act No. 85 of 1993 - Legal appointments

  o Section 16(2) appointments

  o Section 14(a) – Employee safety responsibility

  o Section 17 - Safety representative appointment

  o Section 19 - Safety committee member

  o Safety officer

  o First aider – GSRs, regulation 3(4)

  o Fire officer (Provincial by-laws)

- Appointment letters (other)

  o Facilities manager

  o Safety incident inspection officer

  o Security officer

  o Contractor appointment

- OHS Act No. 85 of 1993 - Legal agreement

  o Section 37(2) appointment

- Letter of appointment

- Notification of construction work

- Safety plan

- Safety registers

  o First aid register

  o First aid box register

  o Injury register

- o   Inspection register

- o   Personal Protective Equipment (PPE) register

- o   Hand tool register

- Incident and injury report

- Injury on-duty documentation – Workman's Compensation Claim (WCL) documents

- HCS Safety Data Sheets (SDS)

- Hazard Identification and Risk Assessment (HIRA) reports

- Medical surveillance records

- Safety committee minutes

- Safety communication and short safety discussions (toolbox talks) (HSE Training, SHE File)

A successful SSMP should be designed to manage the identified safety hazards and risks and should form part of the holistic school safety management system. In conclusion, each school should implement its SSSMP and SSMF independently through a systematic approach to complement and support the universal SSSMP developed by the GDE and DBE. This implementation is followed by stage 3, sustainable results that make use of the safety audit and SSS.

7.4.1.3   *Stage 3: School sustainable results*

As reviewed in Figure 7.1, the SSMF began with the initial stage 1, comprising of safety leadership and strategic safety plan building blocks. This was followed by stage 2 through the building blocks of school safety HIRA and SSSMP. The final stage (stage 3) concludes with the last of the building blocks that lead to safety audits and SSS. In addition, each of the stages and primary building blocks have incorporated the supportive building blocks of engaging people and relationship management, supportive structures and resources, safety change management and continuous improvement, system safety thinking, process safety approach and evidence-based decision-making, and school safety culture.

Safety audits

An audit is defined in the SANS 19011 (SABS, 2018b:1) as an independent and systematic process of obtaining evidence to objectively determine the reliability of the audit criteria. It is an on-site verification of process and can be described as a process of obtaining information regarding to the effectiveness and reliability of the safety management system. Safety audits are implemented to evaluate the safety practices, resource allocation, and legislative compliance (Creativesafetysupply, 2017). A safety (legal compliance) audit will assist in identifying safety problems and challenges before it becomes a serious concern. Safety compliance audits are about accountability, it is intended to ensure the effectiveness of the safety policies, plans, and programmes that are in place for the identification, elimination, and control of hazards and risks.

Audits conducted in a school environment can assist in optimising and sustaining the SSSMP and the management of school safety challenges. Audits help to identify continued safety action measures to ensure compliance and continuous improvement and use the SSSMP together with the HIRA to determine an audit schedule. Safety audits add value to legislative school safety, and school safety works as part of safety planning, leadership, and futuristic safety process re-engineering. School safety audits should be piloted based on the HIRA and document review to evaluate the school processes as established in the SSSMP. The purpose of a safety audit is to ensure the continuous improvement of the SSSMP (Stadnicka & Antosz; 2015:11; Oschman & Rielander, 2020:14).

Furthermore, Stadnicka and Antosz (2015), and Oschman and Rielander (2020) indicated that an internal school audit process should be applied at the end of every school term (quarterly) to measure and monitor the SSSMP. Quarterly internal school audits should be evaluated through an evidence-based process safety approach for stakeholder improvement to strengthen the foundation of school integrity, objectivity and ensure the accurate reporting for continuous improvement of the SSSMP and SSMF. The findings from the internal school audit should guide the school management to establish and re-engineer school policies and processes, the safety culture, and determine if the school effectively complies with the audit criteria and continuous improvement processes.

In Phase 1 of the data analysis, it was found that a safety audit links to the legislative and policy compliance (Table 5.3, Theme 1) concerning the identified gap in school safety policies. Furthermore, a safety audit was noted as lacking in a holistic school system (Table 5.3, Theme 2) as well as being an area of neglect (Table 5.3, Theme 3) which related to the hazard identification of hazards and risks. Another essential part of a SSSMP and safety audit is that of ensuring stakeholder satisfaction.

An internal school audit adds value through system safety thinking and change management to the school safety culture. It empowers the school towards a safer school environment to create a holistic, proactive school safety system to achieve SSS, and ultimately, an effective SSMF.

School stakeholder satisfaction (SSS)

A school improvement plan should begin with understanding the needs of the school community. Schools should have a process in place to determine the educator and scholar satisfaction or dissatisfaction. Part of the strategic safety management plan is to develop a school vision, mission, goals, and objectives that are in line with the DBEs 'strategic plan. These processes form the basis for building positive educator, scholar, and stakeholder relationships and for setting the school's direction. As such to reduce school hazards and risks, school-based stakeholder satisfaction should be a priority building block used by the DBE, GDE, SGBs and schools. The involvement of all role-players and stakeholders will ensure collaboration to help schools to align their legislative requirements with adequate resources to ensure the smooth implementation of the SSMFs' building blocks to achieve holistic school safety.

Stakeholder satisfaction is the measurement of how school stakeholders perceive the school's functioning. The most important stakeholders in a school are the scholars and, most especially, their parents who have a vested interest in the scholar's learning process and future success. SSS can be evaluated and measured at any time and in any stage of a programme/project. It is a means of evaluating the school's performance, change management, and programme/project management. It is a manner in which the school can build on its safety processes, safety culture and continuously improve on its success through the added supportive building block of system safety thinking, and stakeholder engagement. SSS is a fundamental building

block of the SSMF that forms a relationship with other primary and supporting building blocks (Spacey, 2018).

In the data analysis of Phase 1 (Table 5.3) there was an area of neglect inferred during theming. Where conducting SSS surveys, it will add valuable insight into the school safety management system and will assist schools in developing an effective SSSMP.

Rigorous opportunities and actions should exist through the SSMF primary building blocks to reduce school hazards and risks through a participatory approach and to form a relationship with the supporting building blocks. Another essential component is effective communication through collaborative discussion to strengthen stakeholder relationships and ground rules. It is critical that the school management 'stays in the know' and is aware of stakeholder trends, priorities and challenges. A proactive approach through active involvement with stakeholder engagement, not only with educators, scholars, and parents, but also other external stakeholders, is key to the success of a school and the SSMF. The school management should ensure educator, scholar, and stakeholder initiatives to continually improve and discover the foundation of an SSMF. Schools should conduct a confidential stakeholder survey to determine areas of improvement, resource allocation and to maintain a positive stakeholder relationship (Grochocki, 2021).

In an international survey conducted by the Organisation for Economic Co-operation and Development (OECD), the Teaching and Learning International Survey (TALIS) indicated frequent safety problems experienced in South Africa. These included resource shortages related to physical infrastructure (56%) with other non-safety resource shortages reported, such as library material (70%), digital technology (65%), and support personnel (60%) shortages (OECD TALIS, 2018:2).

A second part of the SSMF is that of the six supporting building blocks that include the engagement of people and relationship management, supportive structures and resources, safety change management and continuous improvement system safety thinking, the process safety approach and evidence-based decision-making, and safety culture. The SSMF should be implemented by schools as a holistic systems approach to ensure school safety.

7.4.1.4   Supportive building blocks

The first of the supportive building block of engagement with people and relationship management is linked to the six primary building blocks.

Engagement of people and relationship management

Educators and scholars are the basis of any school management system, and their involvement is critical to the functioning and success of the school. As such, educators should have the required knowledge and skills to provide an innovative and creative school environment. Engagement of employees (educators) and relationship management in a school is key to ensuring educator motivation and a healthy school environment. It is also key to building effective workplace teams and motivating teamwork. Poor communication is a major barrier when building workplace relationships and encouraging teamwork, and have an impact on productivity (Riberio, 2020).

An inherent part of school management and engagement is communication. In the analysis of Phase 1, question 8 (Section 5.2.3), it appeared that schools have good communication systems through the use of a digital platform, such as WhatsApp and the D6 Communicator, as well as paper-based communication, such as newsletters and notice boards. A gap was noted in these communication systems whereby critical information may be overlooked and go unnoticed, which could lead to areas of neglect and severe safety implications.

Furthermore, in the data analysis of Phase 2, question 16 (Section 6.3.2) enquired how often safety meetings were conducted to determine the means of safety engagement and communication. It was noted through the analysis that although safety meetings and communication do take place, it would appear that critical safety information goes unnoticed.

The SSMF can be successfully implemented by the school management if they display an attitude of empathy and engage with educators to form trusting relationships and also if they share important information with the educators. Educator engagement and relationship management should be used to show the added value that can be achieved in schools through successful educator engagement in the achievement of a holistic SSSMP, together with effective support structures and resources.

Support structures and resources

The primary building block of the strategic safety management plan requires the sufficient use of support structures and the availability of resources, which form the basis of the second support building block. The appropriate support structures and resources allow schools to function effectively as an interconnected whole in one holistic SSMF. The majority of schools should have sufficient resources available to begin their safety programme. These resources range from human, financial, structural, equipment and material. The human resources here will be educators, and perhaps even scholars. In contrast, the structural resources would be the school premises, buildings and equipment. The challenge is to manage these to produce a productive and effective safety programme within the SSMP and SSMF.

Many of these support structures and resources are supplied by the DBE and GDE, and are crucial for a school to succeed in the smooth implementation of a holistic school-based support structure within the SSMF. As such, these school-based support structures and resources should be coordinated through the school's strategic development to ensure future decision-making, safety change management, and continuous improvement.

Safety change management and continuous improvement

A change management process is never accepted with enthusiasm, as many individuals see it as a disruption to their normal day-to-day routine (Dickson, 2020). Change management is a specialised field, as is that of safety change management. Since 2020, the world has undergone immense changes due to the Covid-19 pandemic, particularly in the way schools teach and function. Schools had to adapt and change to online teaching, and this had an impact on the schools, educators, scholars, and parents. Even at the time of writing this thesis, in 2022, with decreasing Covid-19 infection rates, schools are once again faced with safety change management to ensure continuous improvement of the school safety functions to ensure that school proceedings are conducted in a safe and healthy manner within the prescripts of the law.

Within the SSMF, safety change management and continuous improvement are linked to the primary building block of a school safety HIRA. Both Phase 1 (Table 5.2) and Phase 2 (Table 6.16) require safety change management related to implementing risk

control measures for continual safety improvement. All legislative changes should be managed proactively in schools to demonstrate the willingness to overcome school risks and challenges. Therefore, legislative safety and school changes should be incorporated in the SSSMP of the DBE and GDE to ensure the legal imperative of school safety. It should be integrated into a holistic school safety system in an attempt to identify solutions that use system safety thinking to address legislated school safety hazards, risks, and challenges.

System safety thinking

A system is a set of interdependent elements (a cycle of events) that interact and function together to form a holistic environment for the achievement of a common goal. System safety thinking is a holistic approach that focuses on incorporating all systems into one functional (holistic) system. It combines the 12 interrelated building blocks (primary and supporting) into a holistic SSMF to address school hazards, risks and challenges. System thinking focuses on how a specific system works together over a period of time and within the context of the larger integrated system.

System safety thinking will allow school stakeholders and role-players to plan, execute and control safety challenges. It will allow school stakeholders and role-players to plan, execute and control safety challenges. Within the context of the SSSMP and SSMF, system thinking will guide the DBE, GDE and school managers to focus on an integrated and holistic system in an attempt to identify solutions to address legislated school safety hazards, risks and challenges. Most school managers focus on school tasks and activities, and the focus should be on aspects that form part of the holistic process safety approach to ensure continuous and better results through evidence-based decision-making.

Process safety approach and evidence-based decision-making

A process safety approach and framework should integrate the "cradle to grave activities" that embrace a facility's lifecycle that is based on hazard identification and risk management control programmes. As such, schools should establish their safety hazards and risks by conducting a HIRA (3rd primary building block). Furthermore, the HIRA is a tool that assists the DBE, GDE, SGBs and school managers to make an evidence-based decision based on the outcome of the HIRA. Together, the HIRA and process safety approach form part of a continuous re-engineering and review process

to comply with the legislated safety requirements of the OHS Act No. 85 of 1993. In addition, the process safety approach will help to align the strategic goals and the SSSMP in an attempt to prevent school safety hazards and risks.

In the analysis performed in Phase 1 (Section 5.2.2, question 6), participants indicated knowing that they were legally accountable and responsible for safety in terms of the OHS Act No. 85 of 1993. However, the participants indicated having only a basic knowledge of their legal accountability as linked to the OHS Act No. 85 of 1993. Fundamentally, this lack of knowledge would impact informed and evidence-based decision-making in terms of the safety-related aspects of schools. It is crucial that the DBE and the GDE ensure that school managers are adequately informed and trained concerning the process safety approach, the HIRA, and safety audits to ensure informed and evidence-based decision-making.

In an attempt to predict sustainability and to generate the correct outcomes, the implementation of the SSSMP and the 12 building blocks of the SMMF should create a relationship within a new school safety culture.

School safety culture

It has been stated that school principals have an instinctive awareness of culture as an element to a school's success (Shafer, 2018). Furthermore, a culture can be strong or weak depending on the interaction between the school management, educators and scholars. There are many interconnected aspects in a strong school culture, while the inadequate interaction in a weak school culture makes it difficult for managers, educators and scholars to interact.

Schools need to build an influential behaviour-based safety culture for educators, scholars, and other safety stakeholders and role-players towards effective SSMF implementation. The integration of safety culture into the SSSMP is critical to the success of the SSMF to ensure participative management and decision-making during the change management in terms of safety legislation and the implementation of the SSMF. In addition, it should have a coordinating influence on the unity of purpose and sense of identity, together with the added value where educators, stakeholders and role-players take ownership of the school safety culture.

To ensure the success of the SSMF (Figure 7.1), it is essential that the DBE and GDE create awareness amongst all school managers, educators, scholars, school

stakeholders and role-players concerning the implementation of the SSMF. The SSMF should be optimised by combining the commonalities of the 12 building blocks within each stage of the school strategic plan and the SSSMP. In addition, the SSMF would strengthen the awareness of each of the building blocks evaluated as a collective, integrated solution to overcome identified school safety hazards, risks and challenges.

The scholars, Birken *et al.* (2017:3) and Moir (2018:3) indicated two reasons why a safety framework should be implemented in schools. Firstly, it would change the potential impact of each of the listed building blocks into powerful results and show 'how-to-action' the benefit of the SSMF when implemented at every school level. In addition, the implementation of the SSMF would generate holistic results to assist schools in developing an effective school safety culture, safety system thinking, and safety change management with continuous improvement. Furthermore, the people (employee) engagement, communication, training, support structures and resources will transform the building blocks into outcomes with long-term benefits to overcome the identified school safety hazards, risks, and challenges.

7.5 CONCLUSION

The data analysis in the previous chapter aided in determining the interconnection between legislation allowing the researcher to expand on the body of school safety knowledge through the development of an SSMF consisting of 12 building blocks subdivided into two segments, namely, primary and supportive building blocks, as illustrated in Figure 7.1 (Section 7.4.1). The development of the SSMF intended to systematically manage, minimise and mitigate school hazards, risks and challenges through safety leadership, engagement with people, and relationship management.

The SSMF explored the strategic safety management plan, supportive structures and resources. In addition, this chapter presented basic generic content that could be used in the development of a safety file by the DBE, GDE, SGBs and school managers. This was followed by a discussion of the school safety hazard identification and risk assessment (HIRA), and safety change management to ensure the continuous improvement of the SSMF. The system safety thinking and the SSSMP, similarly, focus on incorporating all the systems into one functional (holistic) system through combining the 12 interrelated building blocks (primary and supporting) into a holistic SSMF to address school hazards, risks, and challenges. This was followed by a

discussion of safety auditing, a process safety approach and linked to evidence-based decision-making. Finally, to ensure the success of the SSMF, an integrated school safety culture is needed to ensure participative management and decision-making during the safety legislative change management to ensure the continuous improvement of the implemented SSMF.

The researcher is confident that the SSMF, as outlined in this chapter will add value to the strategic plans of the DBE and GDE by integrating the 12 building blocks to ensure effective and continuous school safety. The SSMF will assist the DBE, GDE, SGB, school principals and school managers to improve the quality of school life for every scholar, educator, stakeholder and role-player.

The final chapter is a summary of the study's significance, research implications, objectives and contribution. The final section makes recommendations and suggestions for further research.

CHAPTER 8:
CONCLUSION AND RECOMMENDATIONS

CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

- INTRODUCTION
- RESEARCH SUMMARY
- IMPLICATIONS OF THE RESEARCH
- SIGNIFICANCE OF THE STUDY
- OBJECTIVES AND CONTRIBUTION OF THE STUDY
- RESEARCH ETHICS
- RECOMMENDATIONS
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8.1   INTRODUCTION

With the increase in school tragedies in South African schools, the purpose of the current study was to investigate the safety characteristics, as legislated by the OHS Act No. 85 of 1993 to promote a safe school environment in public secondary schools. The significance of the study aimed to determine the nature and extent of the legal imperative as imposed by the South African government to identify the extent to which legislated safety has been implemented and managed in South African schools.

The primary objective of the study was to explore the legal imperative of the OHS Act No. 85 of 1993 versus the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety. The secondary objectives of the study were to identify safety risks and practices, and to determine the reasons and/or challenges related to why legislated safety had not been implemented in selected public secondary schools. The final secondary objective was to develop an SSMF that could be used by the DBE, GDE, SGBs and school managers to ensure and maintain legislated school safety. As noted from the preceding chapters, the implementation of occupational school safety is based primarily on security safety as legislated in the SASA No. 84 of 1996, and not work-related safety as prescribed by the OHS Act No. 85 of 1993. The study contributed to the body of knowledge by providing additional insight into how participants viewed safety and the degree to which occupational safety has been implemented in schools.

This final chapter summarises the study related to school safety in public secondary schools in Gauteng. The chapter reviews the implications and significance of the research, and reviews the hypotheses and research objectives to ensure that they have been successfully achieved. The researcher makes recommendations concerning how the DBE and GDE, SGBs, and school management could proceed with the implementation of the SSMF in schools. Finally, the researcher highlights areas for further research.

8.2   RESEARCH SUMMARY

There are 26 000 schools across South Africa with over 12 million scholars and approximately 386 600 educators. The scholar-to-educator ratio in public schools is 36.6 scholars to one educator. Of the 26 000 schools, 6 000 are secondary schools.

Gauteng has 2 606 schools spread across 83 towns and cities, of which approximately 365 are secondary schools. The Department of Basic Education is under the management and control of the Central Government responsible for national education across South Africa (Schools4sa, 2020).

Chapter 1 provided the background to the study and determined the nature and extent of the legal imperative of occupational safety as imposed by the South African government on South African schools. Furthermore, the chapter gave an overview of the legislative requirements enforced by the South African government, as legislated under the Occupational Health and Safety (OHS) Act No. 85 of 1993, the South African Schools Act (SASA) No. 84 of 1996, and the National School Safety Framework (NSSF). The chapter further outlined the research problem, research hypotheses, research questions, and research objectives. It continues with the research design, research methodology, research philosophy, and approach. The research population and sample for the study outlines. Th interview guide and questionnaire is discussed next with the pre-testing of the research instruments. In addition, the chapter gave an overview of the data collection and the research data analysis. The chapter outlies the validity and reliability of the study as well as the limitations and delimitation and the ethical considerations for the study. The chapter concluded with an outline of the chapters in the thesis.

Chapters 2 and 3 were the two literature review chapters. Chapter 2 reviewed the OHS Act No. 85 of 1993 and its regulations, linking the legislative requirements to occupational school safety. In addition, the chapter reviewed previous research studies related to school safety and safety management systems, such as the ISO 45001 (SABS, 2018). The chapter reviewed the jurisprudence, or legal theory, as related to the study of law, and which constitutes the principles of law enforceable in a court of law. In addition, the domino safety theory of Heinrich and the revised theory of Frank Bird were introduced.

The chapter presented an outline of the development of safety legislation and provided a review of South African legislation, with a specific focus on the OHS Act No. 85 of 1993 and its regulations. The chapter then reviewed the SANS 31000 (SABS, 2019) as related to risk management, followed by an overview of the ISO 45001 (SABS, 2018), and an outline of school safety frameworks, focusing on the NSSF. Chapter 2 further presented a discussion of international safety legislation, namely, the

Australian Work Health and Safety Act (WHSA) No. 137 of 2011, and the National School Safety Framework of Australia (NSSFA) (2011) as revised in 2018 to the Australian Student Wellbeing Framework (ASWF). The review included the UK Health and Safety at Work etc. Act (HSWA) of 1974, the USA state and federal laws, and the Canadian safety legislation. The chapter ended with a synopsis of school safety frameworks (Table 2.5) and an overview of school safety across BRICS countries.

Chapter 3 explored school safety in terms of the SASA No. 84 of 1996 and the NSSF of 2016. The chapter reviewed the management theory, which is vital to any organisation, including schools. As schools are part of the educational system, the systems theory was outlined at the hand of the systems theory of Von Bertalanffy who constructed the general theory of 'living systems', focusing on concrete matter-energy and interaction systems. The chapter also reviewed the HEWS School Safety Tool Kit developed to assist schools and communities in the fight against school-based violence and crime (security safety).

International school safety legislation and frameworks were outlined, focusing on the ASWF, the UK's Health and Safety at Work etc. Act (HSWA) of 1974, the USA's National School Safety and Security Service (NSSS), and the Canadian Safe Schools Network (CSSN). Table 3.1 provided a synopsis of these school safety frameworks (SSFs). Chapter 3 continued with a discussion of the Worldwide Initiative for Safe Schools (WISS) and school safety in developing countries and BRICS nations.

The literature review in Chapters 2 and 3 concluded that safety aspects as prescribed in the OHS Act No. 85 of 1993 are not addressed in the SASA No. 84 of 1996, nor the NSSF. The literature review noted that school safety legislation, as legislated in the SASA No. 84 of 1996, is related to security safety and school violence, and not occupational safety, as prescribed in the OHS Act No. 85 of 1993.

Chapter 4 examined the exploratory sequential mixed method research employed in this study. The chapter begins with a revision of the problem statement, hypotheses research questions and research objectives. The research methodology was divided into two phases: Phase 1 investigated the qualitative research methodology (Chapter 5) through semi-structured interviews with a homogeneous, convenience and purposive sample. Phase 2 (Chapter 6) explored the quantitative methodology through a questionnaire with probability, random and purposive sampling. the qualitative and

quantitative generic aspect related to the research philosophy and paradigms was discussed. Followed by research approach, research methodology, research strategy and process, research design, and the population and sample. The time horizon, data saturation and triangulation, research environment and data storage was explored. Phase 1 outlined the qualitative research examined the degree of research question and crystallisation. It discussed the interview guide and interviews followed by data collection, data preparation, data content analysis, and thematic analysis. In addition, the chapter gave an overview of Atlas.ti and concluded with a discussion of descriptive statistics and measurement scales, as outlined in Table 4.4.

Chapter 4 continued with a discussion of Phase 2, the quantitative research methodology examining the control variables, the questionnaire and data collection. Chapter 4 concluded with an outline of the validity, reliability, limitations of the study and ethical considerations as applicable to the current study.

Chapters 5 and 6 presented the qualitative and quantitative data analysis and findings. Chapter 5 presented the data analysis and results for Phase 1 (qualitative phase), and analysed the interview guide per section, examining 32 questions across the seven sections of the interview guide. The chapter continued with the qualitative research approach and descriptive analysis outlining word frequency (Annexure E-1), code groups and frequencies (Annexure E-1-2) and memoing in Atlas.ti. The chapter further outlined the word cloud, as illustrated in Figure 5.5 and concluded with data saturation (Figure 5.6).

Chapter 6 presented the data analysis and results for Phase 2 (quantitative phase), beginning with the descriptive statistics of univariate variable frequencies and bivariate cross-functional tabulation (Figure 6.3) and continued with the inferential statistics related to Chi-Sqaure test of independence and Kendal Tau-b value. The quantitative data analysis proceeded to analyse the questionnaire per section, examining 72 questions across the nine sections of the questionnaire.

The data analysis established that participants do not have sufficient safety knowledge (Section 5.2.2) and that safety compliance is not effectively implemented in schools. In addition, the participants regarded the SASA No. 84 of 1996 as 'part and parcel' of safety and security. Furthermore, the participants perceived the OHS Act No. 85 of

1993 as an additional burden, and not as the responsibility of school managers and educators.

Chapter 7 presented the school safety management framework (SSMF) developed by the current study. The chapter began by revisiting the significance of the study and the research objectives set for the study. This was followed by a short summary of the qualitative and quantitative research findings. An SSMF (Figure 7.1) was developed based on the literature review. The SSMF comprises of 12 building blocks that are sub-divided into six primary building blocks and six supporting building blocks. The development of the SSMF will assist the DBE, GDE, SGBs, school principals and educators to manage, minimise and mitigate school hazards, risks and challenges through a continuous process safety improvement approach.

8.3   IMPLICATIONS OF THE RESEARCH

A holistic, systematic, and integrated safety approach should be followed to effectively understand the application of the jurisprudence (legal) theory in the OHS Act No. 85 of 1993, and which provides a framework of moral, social and legal discourse (Wade, 2019). The jurisprudence (legal) and safety theories inherently imply that school management should have appropriate safety knowledge to intrinsically lead, manage and control the school environment to ensure the safety of every person (Smith *et al.,* n.d.:15).

The OHS Act No. 85 of 1993, section 8(2)(g) states that employers should ensure that the requirements of the OHS Act No. 85 of 1993 are complied with by all employees and other persons while on the school premises. The implication of non-compliance to occupational safety and the requirement of the OHS Act No. 85 of 1993 could have a grave jurisprudence (legal) implication, financial (monetary) implication and physical loss in the form of property damage and personal injury. During the data analysis of both phases (qualitative and quantitative), the participants indicated having some knowledge of the OHS Act No. 85 of 1993, and indicated that they had a responsibility to ensure the safety of scholars. The implication of insufficient knowledge and understanding of the jurisprudence (legal) responsibilities pertaining to the OHS Act No. 85 of 1993, such as the behavioural-base stance taken by participants that safety is not their responsibility, will constrain the effective implementation of the SSSMP and

SSMF. If school management and educators do not view OHS as their responsibility, the implementation of a school safety programme or framework will fail.

8.4   SIGNIFICANCE OF THE STUDY

As indicated in Chapter 7 (Section 7.2), the study investigated the legislative link of school safety between the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the school safety implementation gap. As indicated in Chapter 5 (Section 5.2.4), the SASA No. 84 of 1996, section 8A, is related to random searches, seizures and drug testing in schools. Comparably, section 58B(2)(c) is related to the threats to the security safety of learners and staff. It was evident from the literature review and the data analysis that the SASA No. 84 of 1996 regards aspects of school violence, bullying, harassment, vandalism, and security as part of school safety and security.

The OHS Act No. 85 of 1993 is related to occupational (personal) safety for the prevention of occupational injuries and diseases. Where the OHS Act No. 85 of 1993 addresses the responsibility of the employer in section 8, the responsibilities of employees are similarly outlined in section 14. Section 13 outlines the responsibility of the employer and employee's duty to inform regarding hazards and risks in the workplace. Furthermore, sections 17 and 18 of the OHS Act No. 85 of 1993 outlines the appointment of H&S representatives, while sections 19 and 20 outline the duties and responsibilities of H&S committees. Sections 24 and 25 address aspects of occupational injuries and diseases. Section 37 of the OHS Act No. 85 of 1993 outlines acts or omissions by employees and mandatories (contractors), while section 37(2) requires agreement for mandatories (contractors) to comply with the requirements of the OHS Act No. 85 of 1993 when conducting repairs and construction at a school.

As noted from the literature, the OHS Act No. 85 of 1993 outlines occupational (personal) and work-related safety, while the SASA No. 84 of 1996 addresses school-related aspects of violence, bullying, harassment, vandalism and security safety. However, the SASA No. 84 of 1996 makes reference to the OHS Act. No. 85 of 1993 to incorporate occupational and work-related safety.

As noted from the data analysis in Chapters 5 and 6 regarding the implementation of occupational and work-related safety, many aspects are implemented as an inherent part of school safety. However, while school safety may be implemented, it is not

according to the legislative (jurisprudence) requirement as outlined in the OHS Act No. 85 of 1993. In the qualitative data analysis (Chapter 5, Section 5.2.2) school managers indicated having an inherent responsibility for the safety of scholars; however, by omission, participants have insufficient understanding and knowledge pertaining to the OHS Act No. 85 of 1993. In addition, some participants indicated that school safety was not their responsibility and indicated that a competent safety person should be appointed (Annexure F, Section G).

The significance of the study is therefore to assist in creating a safer school environment, and to identify aspects affecting the legislated implementation of occupational safety in schools, and to assist the DBE, GDE, SGBs and school principals to determine their legal compliance with the OHS Act No. 85 of 1993.

8.5   OBJECTIVES AND CONTRIBUTION OF THE STUDY

The objectives of the study are revisited in Table 8.1, and are presented in conjunction with supporting literature and the main findings of the study.

Table 8.1:   Research objectives, hypotheses, supporting literature and main findings

Primary objective	Literature overview	Main findings of the study
To explore the legal imperative of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996 to determine the nature and extent of the implementation of legislated school safety.	The OHS Act No. 85 of 1993 was legislated by the South African government with the intention to protect the health and safety of persons at work (educators), and for the protection of persons other than employees (scholars) against health and safety hazards and risks (RSA, 1993b; Lexis Nexis, 2017:7).	In both Phase 1 (qualitative) and Phase 2 (quantitative) it was clear that occupational health and safety is not implemented to the 'letter of the law' as prescribed by the OHS Act No. 85 of 1993. Similarly, participants regarded school safety as being the responsibility of a dedicated and appointed safety person and not as an educator's responsibility.
	The SASA No. 84 of 1996 relates to school violence, bullying, harassment, and vandalism, searches, seizures, and drug testing in schools as part of safety (RSA, 1996b). No reference is made of occupational safety as legislated by the OHS Act No. 85 of 1993.	The SASA No. 84 of 1996 made no mention of safety (being free of any hazard) as per the definition in the OHS Act No. 85 of 1993. It was further evident from the findings that participants regarded the SASA No. 84 of 1996 inclusive of safety and security. In addition, participants did not regard occupational health and safety as their responsibility (as prescribed in section 14(a)), but rather as that of a dedicated safety person. This viewpoint supports H^1 indicating a relation between knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety.
	It is evident that there is a need to increase awareness related to the prescripts of the OHS Act No. 85 of 1993 in schools (Ferreira, 2015:99). Esterhuyzen (2017:20) highlighted that the need for OHS compliance in South Africa is inadequate; however, the perception related to OHS within management should be broadened to include OHS as a means of addressing	Although participants indicated having knowledge of the OHS Act No. 85 of 1993, this does not imply that they understand their duties and responsibilities pertaining to the OHS Act No. 85 of 1993. Thus H_1 supports a relationship between knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety. The findings of the study indicated that participants had a basic understanding of their legal roles and

Primary objective	Literature overview	Main findings of the study
	employer-employee conflict within the work (school) environment.	responsibility. However, most of the responses were ambiguous and vague and could not be directly construed. As compliance to the OHS Act No. 85 of 1993 is directly linked to the legislative implementation of school safety H^2 is supported.
	Although there is legislation governing school safety, many schools are still unsafe, thus leading to transgressions regarding South African safety legislation (Masitsa, 2011:174.) Sulkowski and Lazarus (2017:7) indicated that school safety has become a significant issue amongst legislators and educational policy-makers and enforcers.	The findings of the study indicated that school safety structures are regulated by the Facilities Regulations (FRs) and the National Building Regulations (NBRs) (SANS 10400), where regulation 2(2)(a) contains the criteria related to the total number of users, as prescribed. The findings of the study noted that schools' experiencing structural problems have reported these to the DBE for assistance. In addition, schools indicated having conducted a structural assessment after the school incident reported in February 2019. Another area of concern was that of asbestos structures (Section 5.2.5), where a 2019 report indicated that 700 schools were reported to the National H&S body regarding asbestos and the DBE failed to manage these asbestos structures safely. In South Africa, asbestos safety is regulated under the Asbestos Regulations (AR) of 2020. A report released by the GDE in 2020 indicated the eradication of 29 entirely asbestos schools by November 2020. However, the report does not mention the 214 partial asbestos-containing schools in the GDE plans to remove the asbestos structures. Due to unsafe school structures, the researcher believes that there is a void (gap) in the literature regarding the legislated safety aspects as required by

Primary objective	Literature overview	Main findings of the study
		the OHS Act No. 85 of 1993 and the legal prescripts of school safety to create a safety school environment. H^3 related to the implementation of legislated school safety to create a safe school environment is supported.
	OHS compliance in South Africa is inadequate and the increased concern is that safety management should be broadened to include health and safety as a means of addressing employer-employee conflict within the work (school) environment (Esterhuyzen, 2017:20). The DBE should make OHS a priority, as safety is a constitutional imperative (Ferreira, 2015:39, 99).	It was clear from the findings that the legal safety imperative of the OHS Act No. 85 of 1993 has not been realised and objectified in the SASA No. 84 of 1996. Similarly, the SASA No. 84 of 1996 made no reference and linkage to the OHS Act No. 85 of 1993. It was further evident from the findings of the study that participants regard the SASA No. 84 of 1996 inclusive of safety and security. In addition, the study found that some participants do not regard occupational safety as their responsibility (as prescribed in section 14(a) but rather as that of a dedicated safety person. The statement made that safety is not an educators responsibility infers there is a relationship between knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety. H_1 is thus supported.
	A study was conducted by Ferreira (2015:iii), investigating the implementation of OHS policies in selected schools in the City of Tshwane. The study concentrated on identifying how school management teams (SMTs) experienced, managed, and implemented OHS within a school. A challenge faced in the Tshwane school environment was the lack of education related to OHS among government officials, SMTs, educators, and scholars. This lack of knowledge	Phase 2 of the findings (Section 6.3.2) showed that 95% of the participants indicated having a safety policy. However, in Phase 1 (Section 5.2.3) as related to the school safety policy, reference was made more to SOPs than to an actual safety policy as prescribed by the OHS Act No. 85 of 1993, section 7 and directed by the Chief Inspector from the DoL.

Primary objective	Literature overview	Main findings of the study
	created a chain reaction, in the sense that it caused schools to be non-compliant regarding the prescripts of the OHS Act No. 85 of 1993.	Compliance to the OHS Act No. 85 of 1993 will lead to the effective implementation of legislated school safety. H_2 is thus supported

Secondary objective	Literature overview	Main finding
To identify safety risks and practices in selected public secondary schools in Gauteng.	Souls (2005:65) claimed that it is the responsibility of the school principal to ensure the effective management and maintenance of school buildings, inclusive of ventilation, lighting in classrooms and other facilities that should be in working order and should be sufficient for the purpose(s) intended.	The findings revealed that educators conduct classroom inspections. Phase 2 (question 18) found that 70% of the participants indicated that school inspections are conducted. However, reviewing the list of what is inspected (Table 6.21) and the mention of limited safety knowledge, roles and responsibilities as found in Phase 1, these inspections may be ineffective to identify potential unsafe safety vulnerabilities to ensure the implementation of legislated school safety to create a safe school environment. H_3 is supported.
	The lack of safety within a school environment could go unnoticed by educators and result in hazards, dangers and risks; thus, resulting in daily unhealthy and unsafe behaviours amongst scholars (Themane & Osher, 2014:3).	The literature review found that the SASA No. 84 of 1996 does not mention safety (being free of any hazard) as per the definition in the OHS Act No. 85 of 1993. It was further evident from the findings that participants regard the SASA No. 84 of 1996 as an integral part of safety and security. In addition, the participants do not regard occupational health and safety as their responsibility (as prescribed in section 14(a)) but rather as that of a dedicated safety person. Furthermore, if adequate and effective safety inspections are not conducted within the prescripts of the OHS Act No. 85 of 1993, safety hazards and risk will remain unnoticed and unidentified, leading to

Secondary objective	Literature overview	Main finding
		potential serious safety risks. Thus indicating a relationship between knowledge of the OHS Act No. 85 of 1993 and the implementation of school safety, supporting H_1.
To identify safety risks and practices in selected public secondary schools in Gauteng.	Employees (educators) should be aware of the employer's (school principal's) responsibility to inform them of any dangers, hazards and/or risk (duty to inform) (Maseko, 2016:31).	Section 13 of the OHS Act No. 85 of 1993 is related to the school principal's (employer's) duty to inform educators (employees), scholars and other role-players regarding hazards in the school environment (workplace), which could have an impact on health and safety. The responses in Phase 1 (question 8) related to communication indicated that systems are in place within the school through digital media such as WhatsApp and the D6 communicator, as well as noticeboards and newsletters. However, it was unclear from the research what safety aspects are communicated to ensure compliance to the OHS Act No. 85 of 1993 and the effective implementation of legislated school safety, supporting H_3 for the creation of a safe school environment.
	The purpose of the Comprehensive School Safety Framework (CSSF) is to reduce hazards and risks in the global education sector through school safety, school disaster management and risk reduction (UNISDR, 2017:2). The DBE has committed itself to preventing and managing school safety incidents through the NSSF, and to create a safe and supportive learning environment (DBE, 1996:13; RSA, 1996).	The NSSF of 2015 developed by the DBE, is a comprehensive document designed to guide schools to achieve a safe and healthy school environment. It is aimed at providing a management tool to school managers and educators to manage aspects of school safety in relation to risks and threats in the school environment. The NSSF focuses on the prevention of school violence and maintaining safety in schools as related to the SASA No. 84 of 1996. As noted in the study the implementation of legislated school safety creates a safety school environment,

Secondary objective	Literature overview	Main finding
		however, in Phase 1 (|Section 5.2.1, question 13) of the data analysis, only one school mentioned utilising the NSSF guidelines, supporting H_3.
	Scholars are increasingly faced with serious physical safety risks due to the rise in incidents of injuries on a daily basis within the classroom and on school premises. Safety includes both the actual and perceived hazards and risks that are experienced differently by individuals (Themane & Osher, 2014:3). Esterhuyzen (2017:20) claimed that the high incidences of occupational-related injuries are due to non-compliance with OHS legislation.	Phase 1 (question 15) was related to the lack of school safety, where an unsafe school environment could go unnoticed by educators resulting in hazards, dangers, and risks. It is disconcerting to note from the data analysis that the participants' responses regarding the types of hazards and risks showed that these are not essentially safety hazards and risks. In Phase 2, participants indicated the reporting of school incidents to the educators (81.3%), and to the school principal (71.4%). However, only 26.6% indicated that school safety incidents were reported to the school district office, with 11.2% being reported to the DoL. Lack of compliance to the OHS Act No. 85 of 1993 leads to the ineffective implementation of legislated school safety, supporting H_2.
To identify safety risks and practices in selected public secondary schools in Gauteng.	Sambasivam *et al.* (2017:580) stated that the lack of safety could result in the potential for various risks and/or hazards in both the physical and social school environment.	As can be noted from the responses provided in Annexure F and Table 6.16, many of the hazards listed are not occupational safety-related hazards, as such. However, there may be some that could have a safety connotation, such as bullying that could result in an injury. Another example is that of corridors that were listed as a hazard, however, the specific hazard/risk that has been identified in the corridor, for example, broken floor tiles, or broken stair railings would be the hazard resulting in the risk of trips and falls. This lack of safety knowledge has an impact on how participants perceive safety, as well as the effective

Secondary objective	Literature overview	Main finding
		implementation of legislated school safety to create a safe school environment, supporting H_1 and H_3.
	Employees (educators) should be aware of the employer's (school principal's) responsibility to inform them of any dangers, hazards and/or risks (duty to inform) (Maseko, 2016:31). Maseko (2016:29) indicated that the duty to inform employees (educators) regarding hazards and risks is a key responsibility of the employer (school principal) as well as how these hazards and risks are managed.	As previously indicated, section 13 of the OHS Act No. 85 of 1993 is related to the school principal's (employer's) duty to inform educators (employees), scholars and other role-players regarding hazards in the school environment (workplace), which could have an impact on health and safety. It is unclear if the information communicated in Annexure F and Table 6.16, is sufficient to ensure compliance to the OHS Act No. 85 of 1993, section 13 regarding the employer's duty to inform to ensure the effective implementation of legislated school safety, supporting H_2.
To identify reasons and/or challenges related to why legislated safety has not been implemented in selected public secondary schools in Gauteng.	The DBE states that schools are directly responsible for providing an environment that promotes quality teaching and learning by promoting the rights and safety of all educators, learners, parents, and other role-players (DBE, 2017a). Schools have become commercial institutions, and as a result, school safety needs to be effectively managed (Sujatha, 2017).	Although safety is an inherent requirement in schools, the results revealed that schools have become complacent regarding school safety. It was indicated that participants regard security safety as prescribed by the SASA No. 84 of 1996 as the definitive legislation. Furthermore, they do not regard occupational safety as their responsibility (as prescribed in section 14(a)), but rather as that of a dedicated safety person. The lack of compliance to the OHS Act No. 85 of 1993 leads to the ineffective implementation of legislated school safety, supporting H_2 and H_3.
To develop a school safety plan (framework) to assist the Gauteng Department of Education (GDE) to achieve	Reviewing the legislative requirements of the OHS Act No. 85 of 1993 and its related safety regulations and the event that occurred in 2019 at the Driehoek High School in Vanderbijlpark	As noted in Section 2.3.1, the SASA No. 84 of 1996 is related to school violence, bullying, harassment, vandalism and security as part of school safety. It

Secondary objective	Literature overview	Main finding
legislated school safety.	have raised concern amongst parents, educators and the South African public (Mooki, 2019).	includes random searches, seizures and drug testing in schools.
		The SASA No. 84 of 1996 addresses the national education policy and requires all school managers and role-players to be accountable for the effective governance and management of schools. It aims to ensure governance and unification in all schools in South Africa.
		It is evident from the literature review and the data analysis that the SASA No. 84 of 1996 presented aspects of security safety and not that of occupational (personal) safety, as outlined in the OHS Act No. 85 of 1993.
		Due to unsafe school structures, the study found that there is a void (gap) in the literature regarding the legislated safety aspects, as required by the OHS Act No. 85 of 1993, and the legal prescripts of school safety, supporting H_3.
	An evaluation area, as identified in a study by Van Der Voort and Wood (2014:3), is safety legislative knowledge pertaining to the OHS Act No. 85 of 1993 and school safety. The current study concluded that appropriate and suitable school improvement plans are required.	In 2006, the HEWS school safety tool kit (Section 3.4) was developed to assist schools and communities in joining together to fight school-based violence and crime (security safety). The primary goals of the HEWS was to develop and maintain a welcoming, safe and violence-free learning environment, and to assist scholars in understanding acceptable behaviour within a school context and in a broader society.
	The importance of safety in schools should go hand-in-hand with the quality of education by implementing it through a holistic and integrated approach to uplift school safety (Mabasa, 2013:2).	In 2015, the DBE developed the NSSF (Section 3.2.2) to create a safe and supportive learning environment for educators, scholars, administrative staff, and the SGB. It addresses bullying, abuse, harassment and vandalism. It focuses on school violence, preventing

Secondary objective	Literature overview	Main finding
		and managing safety incidents, and creating a safe and supportive learning environment in schools (DBE, 2016:2).
		The NSSF is essential to the DBE to empower responsible school officials to understand their responsibilities related to school safety (DBE, 2016:2). The NSSF promotes school safety as part of the school cultural norms and policies (Makota & Leoschut, 2017:19), while the implementation of the NSSF is aimed at assisting schools by assessing the school's safety compliance.
		It appears that schools do not utilise this framework, nor has it been updated to include legislated safety. In Phase 1 (Section 5.2.3, question 13) of the data analysis, only one school mentioned utilising the NSSF guidelines, supporting H_3.

Source: Researcher's own compilation

As noted from the literature review and findings of the study, school safety and security are multi-dimensional and interconnected, requiring unreserved commitment from the DBE, GDE, SGBs, school principals, educators, and the school community in general. The proposed SSMF and school safety file suggest a holistic, integrated approach to legislated school safety. The SSMF requires a committed and integrated approach from all school stakeholders and role-players to develop a supportive, integrated, holistic school safety management system and school safety culture. The fundamental factor of the SSMF is that the school managers (GDE and DBE) together with the school principals hold the key to the development of a safe, supportive school environment and culture. The SSMF was developed for all school stakeholders and role-players to work together in developing a safe school environment. Therefore, the study is of the opinion that it makes a contribution to the school safety body of knowledge, allowing for the expansion of the study through future research. The next section summarises the limitations of the study.

8.6   SUMMARY OF LIMITATIONS OF THE STUDY

Although the study attempted to meet the research criteria of validity and reliability, there were limitations that restricted the application of the research findings. These limitations were outlined in Section 1.10.2, with additional limitations related to the Covid-19 pandemic, listed under the discussion of the research methodology (Section 4.10).

The next section reviews the recommendations made by the study.

8.7   RECOMMENDATIONS

It is evident from the literature review that there is no comparison and relationship between the two pieces of legislation, namely, the OHS Act No. 85 of 1993, and the SASA No. 84 of 1996. In fact, these two fundamental legislative prescripts do not converge as one holistic safety decree.

In addition, the results of the data analysis show (Section 5.2.7) that school managers and educators do not regard legislated safety as their sole responsibility but rather as that of an appointed competent safety person. As noted from the data analysis in Chapter 5 (Section 5.2.2), safety accountability and responsibility undoubtedly originate from the lack of safety knowledge related to the OHS Act No. 85 of 1993 as

a result of this. The study recommends that as the presiding legislature, the DBE incorporates the requirements of the OHS Act No. 85 of 1993 into the SASA No. 84 of 1996, or at least makes reference to the legislative requirements of the OHS Act No. 85 of 1993. In addition, the study recommends that the DBE, GDE and SGBs incorporate the OHS Act No. 85 of 1993 and relevant regulations in its school development plan, DBE strategic management plan, DBE action plan, and legislative and policy mandates.

Safety training is recommended for all school managers, principals, and educators. Furthermore, the DBE and GDE should consider including occupational health and safety training for scholars in the senior educational phase, and specifically, in the Grade 12 year, giving them an advantage when entering the working environment. Trained safety scholars could be utilised in the school as safety representatives, giving the school additional safety human resources, while at the same time, giving scholars practical exposure that can be invaluable in the working environment.

Furthermore, Phase 1, question 14, and Phase 2, questions 18 to 21 of the study were associated with the HIRA as an employer-employee responsibility, as legislated in the OHS Act No. 85 of 1993 section 8(2)(B and d) and 14(a and d). It is recommended that in a situation where no HIRA has been conducted in a school, it is advisable that a HIRA should be conducted as soon as possible to determine a baseline against which hazards and risks could be quantified.

The lack of implementation of legislated school safety is because school managers and educators do not regard legislated safety as their responsibility, but rather see it as the responsibility of an appointed and competent safety person (Section 5.2.7). It is recommended that the DBE and the GDE, as the legislated CEO charged with certain duties in section 16(1) of the OHS Act No. 85 of 1993, should appoint in writing SGB members and school principals as section 16(2) appointees, as prescribed by the OHS Act No. 85 of 1993 to take accountability and responsibility for occupational health and safety in schools. Furthermore, the section 16 delegates should be added to the school development plan, DBE strategic management plan, DBE action plan, legislative and policy mandates.

In addition, a safety delegation of duties for all employees in relation to section 14(a) of the OHS Act No. 85 of 1993 should also be added to these legislative policy mandates. The implementation and signing of the section 16 and section 14 delegation

will ensure that all school members take responsibility for occupational health and safety, as legislated in the OHS Act No. 85 of 1993. Furthermore, it should prevent educators from regarding occupational school safety as the sole responsibility of an appointed and competent safety person. It is further recommended that the DBE and GDE should ensure that these section 16 and section 14 delegations, as prescribed by the OHS Act No. 85 of 1993, are renewed annually.

The SSMF (Figure 7.1) and SSSMP that was set out in Chapter 7 (Section 7.4.1) was developed to assist the DBE, the GDE, SGBs, school principals, educators, and other role-players with the implementation of legislated school safety. It will assist the DBE, GDE, SGBs, and school managers through the mandated framework to comply with sustainable safety improvement practices. The current study developed the SSMF as a flexible and dynamic tool to be utilised in the execution of safe school operations. The SSMF aims to provide a holistic school safety system through the use of essential building blocks, and to develop a holistic school safety culture with improved safety knowledge to ensure legislated safety compliance.

Building block number four of the SSMF is the SSSMP that aims to give school role-players visibility in the promotion of a school safety quality of life and a school safety culture within a safe school environment. In addition, the SSSMP includes the development of a safety file that is essentially a record of information that focuses on the management of health and safety, and contains vital information that proves safety compliance. It is recommended that a standardised safety management system, such as ISO 45001 (2018) be considered as a baseline for safety management in schools together with the implementation of the SMMF, SSSMP and safety file. Furthermore, it is recommended that the SSMF (Section 7.4.1, Figure 7.1) and safety file be tested.

8.8   AREAS FOR FURTHER RESEARCH

As indicated in Section 1.5, there is limited scientific research in South Africa relating to school safety, particularly with the focus on occupational safety in schools, as legislated by the OHS Act No. 85 of 1993 and its supporting regulations. More research related specifically to occupational school safety, as prescribed by the OHS Act No. 85 of 1993 and its supporting regulations is required. In addition, the relationship between the SSMF and its building blocks is needed to validate the practical implications and effectiveness in schools.

Section 1.5.5 presented a review of school safety in developed countries. The review of the HSWA of 1974 noted that there were several legal similarities related to the OHS Act No. 85 of 1993 and the management of safety in the workplace. However, the HSWA of 1974 has an added clause on written H&S policies in schools. It is recommended that the DBE and the GDE consider adding this clause related to written polices into the DBE's strategic management plan, DBE action plan, legislative and policy mandates and the SASA No. 84 of 1996.

The limitations of the study noted that scholars were not included in the study due to the ethical implications. However, it was noted in Section 1.10 that the inclusion of scholars and parents could add invaluable information regarding occupational school safety. It is recommended that scholars and parents be included in future studies related to occupational school safety.

The study enquired from participants how safety information was communicated in schools (Section 5.2.3). The results showed that digital applications, such as WhatsApp and a D6 school Communicator, were used internally and externally. The application and effectiveness of the digital platform as a means of safety communication requires further investigation.

The researcher assumed that participants would link the management of school safety incidents, accidents and injuries to educators. However, the data obtained (Sections 5.2.4 and 6.3.4) related this management to scholars. As such, further research should be undertaken to investigate the process of managing and reporting educator incidents, accidents and injuries.

As indicated in Sections 5.2.5 and 6.3.5, asbestos remains a health risk in schools. Research has estimated that 214 schools in Gauteng contain asbestos structures (NIOH, 2017). As such, asbestos poses a significant health risk to educators, scholars, parents, and the surrounding environment. This is a factor that requires urgent attention by the DBE, and further research regarding asbestos structures in schools is required.

Educators (Section 5.2.7) raised concerns regarding aspects of security such as school access by external parties, the use of public transport by scholars, the safety and security of staff in municipal parking areas. As these aspects are grey areas within safety, a more in-depth investigation is needed. Another concern (Section 5.2.7) was related to the neglect of scholars that are not cared for by parents; a concern that will

require additional investigation within the educational and social/psychological environment.

The responses in Figure 6.7 noted that 63.3% of the participants indicated that they had received health and safety awareness training. The type of training received by participants may require further investigation and research. In addition, Section 6.3.3 discussed H&S inspections and the effectiveness of these inspections and the reasons why inspections are not conducted, which requires more in-depth investigation.

The qualitative data analysis (Section 5.2.2) and the quantitative data analysis (Section 6.3.2) explored the participants' understanding of the OHS Act No. 85 of 1993. From the responses it can be inferred that participants do not have sufficient understanding of the OHS Act No. 85 of 1993. This means that safety understanding amongst participants (school educators) requires further research.

As indicated in Section 6.3.4, an inherent requirement of a school environment would be to report any school incidents, accidents and injuries to the school principal. The reasons for the non-reporting of school incidents, accidents and injuries, as legislated by the OHS Act No. 85 of 1993, require more in-depth investigation.

In addition, schools need to take cognisance of the changes to the first aid legalisation as prescribed in the GSRs, regulation 3 of 2021, with specific reference to the accreditation of first aid training service providers, as well as the inclusion of a spillage kit as a minimum requirement in first aid boxes. Further investigation is needed regarding the new legislative prescripts of first aid.

The South African National Energy Development Institute (SANEDI) (Sections 6.3.8 and 7.3.8) has new regulations banning the use of general lighting sources containing mercury in South Africa. Due to the new legislation, this will require further investigation.

As indicated in Section 8.7, the main reason why occupational school safety is not implemented in schools is because educators do not regard safety as their responsibility, but that of an appointed and competent safety person (Section 5.2.7). This implies a lack of knowledge and understanding regarding their responsibilities, as prescribed by the OHS Act No. 85 of 1993. A recommendation was made to include safety training for all school managers, principals, and educators to improve occupational school safety knowledge and awareness. The implementation of

occupational school safety would require further research to determine the effectiveness in schools.

In addition, Section 8.7 indicated that safety training was important for scholars leaving school (Grade 12) as it would give matriculants an advantage when entering the working environment. The value of adding occupational health and safety training, as prescribed in the OHS Act No. 85 of 1993 to the National Senior Certificate (NSC) education curriculum would require further research.

8.9 CONCLUSION

The South African Constitution No. 26 of 1996 and Bill of Rights is the supreme legislation, where section 24(1) states that everyone has the right to an environment that is safe and not harmful to their health and well-being. In addition, the Occupational Health and Safety (OHS) Act No. 85 of 1993 was developed to provide for the health and safety of a person at work (educators), inclusive of scholars and other persons who may be affected on the school premises. The South Africa Schools Act (SASA) No. 84 of 1996 concentrates on security safety, school violence, bullying, harassment, and abuse, and makes no reference to occupational school safety, as legislated in the OHS Act No. 85 of 1993 and its supporting regulations.

In Chapter 1, the problem statement referred to the lack of the implementation of safety legislation required to create a physically safe school environment. To quantify the problem statement, this study compared school safety in relation to the legislative prescripts of the OHS Act No. 85 of 1993 and the SASA No. 84 of 1996. The primary objective was to investigate the safety characteristics, as legislated by the OHS Act No. 85 of 1993 with the intention of promoting a holistic safe school environment. The study's objectives determined the participant's safety knowledge, attitude, compliance in schools, and challenges related to the implementation of legislated school safety. Supported by the literature review of the OHS Act No. 85 of 1993 (Chapter 2), SASA No. 84 of 1996 (Chapter 3), and the qualitative data analysis of Phase 1 (Chapter 5) and the quantitative data analysis of Phase 2 (Chapter 6), the lack of occupational safety implementation, as prescribed by the OHS Act No. 85 of 1993 was confirmed. Furthermore, the omission related to occupational safety in the SASA No. 84 of 1996 was corroborated.

Every school is unique and requires an individualised school safety management system and School System Safety Management Plan (SSSMP). The School Safety Management Framework (SSMF) (Section 7.4, Figure 7.1) developed by the current study is a generic framework that is proposed to assist the Department of Basic Education (DBE), the Gauteng Department of Education (GDE), school governing bodies (SGBs) and school management to enhance the knowledge of school management, and will allow educators to achieve a holistic legislative safety management system in schools.

The study explored school safety in public secondary schools in the province of Gauteng, and developed an SSMF based on 12 building blocks that aim to assist the DBE, GDE, SGBs and school managers (principals and educators) with the implementation of legislated occupational school safety. Through the implementation of the SSMF, all schools will be legally compliant with the OHS Act No. 85 of 1993 and its supporting regulations.

School safety is not only of legal importance for educators and scholars alike in public secondary schools, but is of critical importance across all schools in South Africa and across the globe.

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ANNEXURE A-1:
INTERVIEW GUIDE

SECTION A: SAMPLING DATA

Please place a circle around your answer

E.g. Is the sky blue?　　　1　　Yes　　　2　　No　　　3　　Unsure

1.　Location of school:

1	Gauteng North District	2	Gauteng South District
3	Gauteng East District	4	Ekurhuleni West District
5	Ekurhuleni North District	6	Johannesburg Central District
7	Johannesburg North District	8	Johannesburg South District
9	Johannesburg East District	10	Johannesburg West District
11	Sedibeng East District	12	Sedibeng West District
13	Tshwane North District	14	Tshwane South District

2.　Number of staff members employed　　1　20-29　　2　30-39

　　　　　　　　　　　　　　　　　　3　40-49　　4　>50

3.　Number of scholars in the school

　　1　0-499　　2　500-999　　3　1 000-1 499　4　>1 500

4.　At which rank/post level are you

1	Principal	2	Deputy Head Principal
3	Head of Department (HOD)	4	Other, please specify:

_____

_____

_____

_____

SECTION B: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: KNOWLEDGE

5. Please explain your understanding and knowledge pertaining to the Occupational Health and Safety (OHS) Act No. 85 of 1993.

    _____

    _____

    _____

    _____

6. As the school principal you are regarded as the employer in terms of the Occupational Health and Safety (OHS) Act No. 85 of 1993. Please explain your understanding of the responsibilities of an employer as prescribed by the Occupational Health and Safety (OHS) Act No. 85 of 1993.

    _____

    _____

    _____

    _____

SECTION C: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: COMPLIANCE

7. Please explain how educators are informed regarding the content of the OHS policy.

    _____

    _____

    _____

    _____

8. Please explain how scholars are informed regarding the content of the OHS policy.

    _____

    _____

    _____

    _____

9. Please explain the process of appointing H&S representatives in the school, who is appointed, and how the actual appointment of H&S representatives is made.

    _____

    _____

    _____

    _____

10. What type of training has the appointed H&S representatives received?

    _____

    _____

    _____

    _____

11. How many H&S representatives have been appointed?

    _____

    _____

    _____

    _____

12. How often do H&S committee meetings take place and what aspects are discussed at these meetings?

    _____

    _____

    _____

    _____

13. How are H&S inspections conducted?

    _____

    _____

    _____

    _____

14. Please explain how hazards and risks are identified on the school premises during the H&S inspections.

———————————————————————————
———————————————————————————
———————————————————————————
———————————————————————————

15. What hazards/risks have been observed/reported during these H&S inspections?

———————————————————————————
———————————————————————————
———————————————————————————
———————————————————————————

16. Please explain how educators, scholars, parents and other persons are informed regarding identified hazards and risks on the school premises.

———————————————————————————
———————————————————————————
———————————————————————————
———————————————————————————

SECTION D: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: INCIDENTS, ACCIDENTS, INJURIES AND FIRST AID

17. Please explain what process is followed when an incident, accident, and injury occur on the school premises.

———————————————————————————
———————————————————————————
———————————————————————————
———————————————————————————

18. To whom are these school incidents, accidents and injuries reported?

———————————————————————————
———————————————————————————
———————————————————————————
———————————————————————————

19.   What process is followed when reporting these school incidents, accidents, and injuries to the school office?

         _____

         _____

         _____

         _____

20.   What process is followed when reporting these school incidents, accidents, and injuries to the school principal?

         _____

         _____

         _____

         _____

21.   What process is followed when reporting these school incidents, accidents, and injuries to the School District/Department of Education?

         _____

         _____

         _____

         _____

22.   What process is followed when reporting these school incidents, accidents and injuries to the Department of Labour (DoL)?

         _____

         _____

         _____

         _____

23.   How many first aiders are appointed within the school, and what is their level of training?

         _____

         _____

         _____

         _____

24. If no first aiders have been appointed, who manages these incidents, accidents, and injuries?

_____
_____
_____
_____

SECTION E: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: FACILITIES

25. Is the school currently experiencing any facility problems, such as structural problems with school buildings? If yes, please explain.

_____
_____
_____
_____

26. Does the school currently make use of any temporary buildings? If yes, please indicate the type of temporary building being used and the purpose of use.

_____
_____
_____
_____

27. Are you aware of any asbestos school structure, building/equipment on the school premises? Please explain where these structures/equipment are used and the condition of the structures/equipment.

_____
_____
_____
_____

SECTION F: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: FIRE SAFETY AND FIRE EQUIPMENT

28.   Does the school have appointed fire representatives on the school premise? If yes, please indicate who these appointed fire representatives are.

_____

_____

_____

_____

29.   How many fire representatives have been appointed?

_____

_____

_____

_____

SECTION G: OCCUPATIONAL HEALTH AND SAFETY (OHS) LEGISLATION: CONCERNS AND COMMENTS

30.   Please state any safety concerns not mentioned in this interview guide/general comments.

_____

_____

_____

_____

31.   Are there aspects related to school safety you would like to bring to the attention of the Gauteng Department of Education (GDE)?

_____

_____

_____

_____

32.   This concludes the interview. Do you have any final remarks or questions for me to consider?

——————————————————————————436——————————————————————————

——

——

——

Thank you for allowing me to conduct the interview. Your input is valuable to the research. Please be assured that the information you provided will remain confidential and your responses will be anonymous.

Cheryl Rielander

ANNEXURE A-2:
INTERVIEW GUIDE AND RESEARCH OBJECTIVES

Objective	Purpose of interview guide per section	Description
	Section A Sample data (section 5.2.1) related to school location, number of staff members employed versus the number of students in the schools and participants' post level in the school.	Question 1 determined the location of the school district. Question 2 determined the number of staff members employed in the school. Question 3 determined the number of scholars in the school. Question 4 determined the rank/post level of the participant.
Primary objective To explore the legal imperative of the OHS Act No. 85 of 1993 to determine the nature and extent of the implementation of legislated school safety.	**Section B** Determine participant's knowledge of occupational health and safety legislation, as related to the OHS Act No. 85 of 1993.	Question 5 determined if the participant had understanding and knowledge of the OHS Act No. 85 of 1993. Question 6 determined the participant's understanding of the employer's responsibilities concerning the OHS Act No. 85 of 1993 and to explain their understanding of the responsibilities of an employer as prescribed by the OHS Act No. 85 of 1993.
Secondary objective To identify safety risks and practices in selected public secondary schools in Gauteng.	**Section C** Determine legal compliance of the OHS Act No. 85 of 1993.	In question 7, the participant explained how educators are informed regarding the content of the OHS policy. In question 8, the participant explained how scholars are informed regarding the content of the OHS policy.

Objective	Purpose of interview guide per section	Description
		In question 9, the participant had to explain the process of appointing H&S representatives in the school and how the actual appointment of H&S representative is made.
		Question 10 enquired about the type of training received by appointed H&S representatives.
		Question 11 enquired about the number of appointed H&S representatives. (This is used to determine legal compliance in relation to the ratio prescribed in the OHS Act No. 85 of 1993).
		Question 12 enquired about the frequency of H&S committee meetings and what aspects were discussed at these meetings.
		Question 13 assessed how H&S inspections were conducted.
		Question 14 enquired how hazards and risks were identified on the school premises during H&S inspections.
		Question 15 enquired about the hazards and risks observed/reported during H&S inspections.
		Question 16 assessed how educators, scholars, parents and other persons were informed regarding identified hazards and risks on the school premises.
	Section D Determined compliance in relation to occupational health and safety legislation, incidents, accidents, injuries, and first aid.	Question 17 required the participant to explain the process followed when an incident, accident, and injury occur on the school premises.
		Question 18 enquired to whom these school incidents, accidents, and injuries are reported.

Objective	Purpose of interview guide per section	Description
		Question 19 enquired about the process followed when reporting school incidents, accidents, and injuries to the school office.
		Question 20 enquired about the process followed when reporting school incidents, accidents, and injuries to the school principal.
		Question 21 enquired about the process followed when reporting school incidents, accidents, and injuries to the School District/Department of Basic Education.
		Question 22 enquired about the process followed when reporting school incidents, accidents, and injuries to the DoL.
		Question 23 determined the number of appointed first aiders within the school and what their level of training is. (This is used to determine legal compliance concerning the ratio prescribed in the OHS Act No. 85 of 1993).
		Question 24 enquired who manages incidents, accidents and injuries if no first aiders have been appointed.
	Section E This section relates to occupational health and safety compliance concerning facilities such as building and structural problems. Use of temporary classrooms that could contain possible asbestos.	Question 25 enquired if any facility problems were experienced by the school, (such as structural problems with school buildings). Participants were asked to explain the problem.
		Question 26 established if the school made use of any temporary buildings and to indicate the type of temporary building being and purpose of use and the purpose of use.
		Question 27 established participants' awareness of any asbestos school structure, building/equipment on the school

Objective	Purpose of interview guide per section	Description
		premises, and to explain where thet structures/equipment are used and the condition of the structures/equipment.
	Section F Established compliance concerning occupational health and safety legislation related to fire safety and fire equipment.	Question 28 enquired whether the school had appointment fire representatives on the school premises and who these appointed fire representatives were. Question 29 determined the number of appointed fire representatives. (This is used to determine legal compliance concerning the ratio prescribed in the OHS Act No. 85 of 1993).
Secondary objective To identify reasons and challenges why legislated safety is not implemented in selected public secondary schools in Gauteng.	**Section G** Occupational health and safety concerns and comments	In question 30, participants had to state any safety concerns not mentioned in the interview guide or general comments. In question 31, participants were asked if there were any aspects related to school safety that they would like to bring to the attention of the Gauteng Department of Education. Question 32 concluded the interview and allowed for any final remarks or questions for the researcher to consider.

ANNEXURE B-1:
RESEARCH QUESTIONNAIRE

SECTION A. SAMPLING DETAIL RESEARCH QUESTIONNAIRE

SECTION A. SAMPLING DATA

Please place a circle around your answer

E.g. Is the sky blue?   *1*   *Yes*   *2*   *No*   *3*   *Unsure*

1. Location of school:

1	Gauteng East District	2	Gauteng North District
3	Gauteng West District	4	Ekurhuleni South District
5	Ekurhuleni North District	6	Johannesburg North District
7	Johannesburg South District	8	Johannesburg West District
9	Johannesburg East District	10	Johannesburg Central District
11	Sedibeng East District	12	Sedibeng West District
13	Tshwane North District	14	Tshwane South District
15	Gauteng South District		

2. Indicate your current rank/post level.

1	Principal /Deputy head principal	2	Head of Department
3	Senior educator	4	Educator
4	Other, please specify:		

   _____

3. How long have you been employed at the school?

1	0-6 months	2	7-12 months	3	1-2 years
4	3-4 years	5	5-6 years	6	7-8 years
7	9-10 years	8	> 10 years		

4. If employed less than six months, did you receive safety awareness training when you began working/teaching at the school?

441

1   Yes   2   No

SECTION B. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: KNOWLEDGE

5.   Have you heard of the Occupational Health and Safety (OHS) Act No. 85 of 1993?

1   Yes   2   No   3   Uncertain

6.   Does the school have a copy of the OHS Act No. 85 of 1993?

1   Yes   2   No   3   Uncertain

7.   What is your understanding of the OHS Act No. 85 of 1993?

1   None   2   Poor   3   Fair

4   Good   5   Excellent

8.   Does your school have a safety policy? 1   Yes   2   No

9.   If yes at Q8, is the safety policy effectively implemented in the school?

1   Strongly disagree   2   Disagree   3   Somewhat disagree

4   Somewhat agree   5   Agree   6   Strongly agree

10.   Do you know what your duties and responsibilities are, as an employee, as prescribed by the OHS Act No. 85 of 1993, section 14?

1   Yes   2   No   3   Uncertain

11.   Are you aware that the OHS Act No. 85 of 1993 requires you as an educator and employee to identify hazards and risks in the school environment (workplace) and to inform scholars, parents, and other persons regarding these risks and hazards?

1   Yes   2   No   3   Uncertain

SECTION C. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: COMPLIANCE

12.   Are there appointed health and safety representatives in your school?

1   Yes   2   No   3   Uncertain

13. If yes at Q 12, how many health and safety representatives have been appointed in the school?

1 None 2 1-2 3 3-4

4 5-6 5 7-9 6 >10

14. Have the appointed health and safety representatives received formal health and safety training?

1 Yes 2 No 3 Uncertain

15. Who are the appointed health and safety representatives?

1 Educators 2 Scholars

3 Support staff 4 Uncertain

5 Other, please specify, _____

_____

16. How often do health and safety meetings take place?

1 Weekly 2 Monthly 3 Bi-monthly

4 Quarterly 5 Six-monthly 6 Annually

17. If no health and safety committee meetings take place, are health and safety aspects discussed at school staff meetings?

1 Yes 2 No 3 Uncertain

18. Are health and safety inspections conducted on the school premises?

1 Yes 2 No 3 Uncertain

19. How often are these health and safety inspections conducted?

1 Weekly 2 Monthly 3 Bi-monthly 4 Quarterly

5 Six monthly 6 Annually 7 Uncertain

20. Who conducts these health and safety inspections? (more than one selection can be made)

1 Educators 2 Administrative staff 3 Support staff

4 Scholars 5 Uncertain

6 Other, please specify _____

21. What hazards/risks have been observed during these health and safety inspections?

Hazard
E.g. Broken windows   Unsafe electrical wires
1
2
3
4
5
6
7
8
9
10

22. How frequently are you informed regarding hazards and risks that could led to exposure (illness/disease) in relation to the OHS Act No. 85 of 1993, Section 13?

1   Never   2   Rarely   3   Occasionally

4   Often   5   Always

23. Are scholars informed regarding hazards and risks they may be exposed to on the school premises as related to the OHS Act No. 85 of 1993, Section 13?

1   Yes   2   No   3   Uncertain

24. How are educators informed regarding these hazards and risks?

    1   Health and safety meeting   2   Staff meeting

    3   Email   4   Other, please specify:

    _____

    _____

    _____

SECTION D. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: INCIDENTS, ACCIDENTS, INJURIES AND FIRST AID

25. Are school incidents, accidents, and injuries reported to the educator?

    1   Yes   2   No   3   Sometimes

    4   Rarely   5   Uncertain

26. Are school incidents, accidents, and injuries reported to the school principal?

    1   Yes   2   No   3   Sometimes

    4   Rarely   5   Uncertain

27. Are school incidents, accidents, and injuries reported to the school district office?

    1   Yes   2   No   3   Sometimes

    4   Rarely   5   Uncertain

28. Are school incidents, accidents, and injuries reported to the Department of Labour (DoL)?

    1   Yes   2   No   3   Sometimes

    4   Rarely   5   Uncertain

29. Does your school have an incident, accident, and injuries policy as required by the OHS Act No. 85 of 1993, section 24 and 25?

    1   Yes   2   No   3   Uncertain

30. Is there an incidents, accidents, and injury register for the recording of school incidents, accidents, and injuries?

    1   Yes   2   No   3   Uncertain

31. If answered yes at Q30, who manages the incidents, accidents and injuries register? (More than one selection can be made)

    1   Principal   2   Deputy head principal

    3   Educator   4   Administrative staff

    5   Support staff   6   Other, please specify:

_____

32. Does the school have appointed first aiders?

    1   Yes   2   No   3   Uncertain

33. How many first aiders have been appointed?

    1   None   2   1-2   3   3-5

    4   6–9   5   >10

34. Who has been appointed as a first aider? (More than one selection can be made)

    1   Educators   2   Support staff   3   Administrative staff

    4   Scholars   5   Uncertain

    6   Other, please specify

_____

35. Has/have the first aider(s) received formal first aid training?

    1   Yes   2   No   3   Uncertain

36. If yes at Q35, indicate the service provider:

_____

_____

37. Does the school have first aid boxes available on the school premises?

    1   Yes   2   No   3   Uncertain

38. How many first aid boxes are there on the school premises?

    1   0   2   1 - 2   3   3 - 4

    4   >5   5   Uncertain

39. Are first aid boxes maintained in relation to the General Safety Regulations (GSRs) as prescribed in the OHS Act No. 85 of 1993?

1 Never   2   Rarely   3   Sometimes 4   Often

5 Always   6   Not applicable

SECTION E. OCCUPATIONAL HEALTH AND SAFETY: FACILITIES

40 Does the school have a maintenance and facility plan?

1   Yes   2   No   3   Uncertain

41 Are there any temporary school structures/buildings being used as classrooms on the school premises?

1   Yes   2   No   3   Uncertain

42 If yes at Q41, what type of temporary school structures/buildings are being used?

1   Pre-fabricated classroom

2   Pre-fabricated classroom (possible asbestos)

3   Zinc/corrugated iron structured classroom

4   Gazebo/marque tent

5   Other, please specify: _____

_____

43 Does the school have a '*facilities and maintenance*' plan for these temporary school structures/buildings?

1   Yes   2   No   3   Uncertain

44 Are you aware of any asbestos structures/buildings on the school premises?

1   Aware   2   Not aware   3   Uncertain

45 If yes at Q44, please specify the reason for using the asbestos structures/buildings.

_____

_____

46   Do you consider these asbestos structures/buildings to be a problem on the school premises?

1   Not applicable   2   Not a problem
3   Minor problem   4   Somewhat of a problem
5   Moderate problem   6   Serious problem

47   What is the condition of the asbestos structure, buildings/equipment?

1   Not applicable   2   Poor   3   Fair
4   Average   5   Good   6   Excellent

48   Are you aware of any construction/maintenance work taking place on the school premises?

1   Yes   2   No   3   Uncertain

49   Has the construction site been closed off to avoid incidents and/or injuries?

1   Yes   2   No   3   Uncertain

SECTION F. OCCUPATIONAL HEALTH AND SAFETY: FIRE SAFETY AND FIRE EQUIPMENT

50   Are there appointed fire representatives on the school premises?

1   Yes   2   No   3   Uncertain

51   How many fire representatives are appointed on the school premise?

1   0   2   1-3   3   4-6
4   7-9   5   >10

52   Who has been appointed as a fire representative (more than one selection can be made).

1   Educators   2   Support staff   3   Administrative staff
6   Scholars   5   Other, please specify _____

53   Is fire equipment readily and easily available?

1   Yes   2   No   3   Uncertain

54   If no at Q53 please state reason.

_____

_____

55   Has fire equipment been maintained and serviced?

      1   Yes   2   No   3   Uncertain

56   If yes at Q 55, what was the last service date of the fire equipment closest to
      your classroom?

_____

_____

57   Have fire drills been conducted on the school premises?

      1   Yes   2   No   3   Uncertain

58   How often are fire drills conducted?

      1   Monthly   2   Bi-monthly 3   Quarterly

      4   Six monthly   5   Annually   6   Uncertain

SECTION G. OCCUPATIONAL HEALTH AND SAFETY: NOISE

59   Have you experienced occasions where there has been excessive noise
      (having to shield your ears from the noise)?

      1   Never   2   Almost never   3   Sometimes

      4   Often   5   Continuously

60   Rank your experience to the noise level in the school hall:

Noise experience	1	2	3	4	5
	No noise	Rarely	Occasional	Often	Excessive
School hall					

61   Rank your experience to the noise level in the school corridors:

Noise experience	1	2	3	4	5
	No noise	Rarely	Occasional	Often	Excessive
Corridors					

62   Rank your experience to the noise level in the school classrooms:

Noise experience	1	2	3	4	5
	No noise	Rarely	Occasional	Often	Excessive
Classroom					

63   Rank your experience to the noise level on the sports field:

Noise experience	1	2	3	4	5
	No noise	Rarely	Occasional	Often	Excessive
Sports fields					

64   Rank your experience to the noise level during break periods on the school grounds:

Noise experience	1	2	3	4	5
	No noise	Rarely	Occasional	Often	Excessive
Break period on the school grounds					

SECTION H. OCCUPATIONAL HEALTH AND SAFETY: THERMAL, VENTILATION AND ILLUMINATION

65   Are air-conditioners available in classrooms?

        1   Yes   2   No

66   Does lighting in the classroom allow for good visibility?

        1 Strongly disagree   2   Undesirable   3   Acceptable

        4   Agree   5   Strongly agree

67   Are fluorescent light tubes used to create artificial light?

        1 Yes   2   No   3   Uncertain

68   Do you know if these fluorescent light tubes contain mercury?

    1   Yes   2   No   3   Uncertain

69   If yes to Q68, how are these mercury fluorescent tubes get disposed of?

    1   Uncertain   2   Municipal refuse   3   External contractor

SECTION I. OCCUPATIONAL HEALTH AND SAFETY: CONCERNS AND COMMENTS

70   Please state any safety concerns/challenges not mentioned in this questionnaire.

    _____

    _____

    _____

    _____

71   Are there aspects related to school safety you would like to bring to the attention of the school district?

    _____

    _____

    _____

    _____

72   This concludes the questionnaire. Do you have any final remarks or questions for me to consider?

    _____

    _____

    _____

    _____

Thank you for completing the questionnaire; your input is valuable to the research. Please be assured that the information you provided will remain confidential and your responses will be anonymous.

Cheryl Rielander

ANNEXURE B-2:
RESPONSE RATING CATEGORIES FOR DIFFERENT TYPES OF QUESTIONS

TYPE OF RATING	CATEGORY	QUESTION NUMBER
SECTION A. QUESTIONNAIRE		
Descriptive	Sampling detail	Question 1, Question 2
Numerical	0-6 months 7-12 months 1-2 years 3-4 years 5-6 years 7-8 years 9-10 years >10 years	Question 3
Agreement	Yes No	Question 4
SECTION B. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: KNOWLEDGE		
Agreement	Yes No Uncertain	Question 5 Question 6, Question 8 Question 10 Question 11
Argumentative	Strongly disagree Disagree Somewhat disagree Somewhat agree Agree Strongly agree	Question 9
Rating	None Poor Fair Good Excellent	Question 7

TYPE OF RATING	CATEGORY	QUESTION NUMBER	
SECTION C. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: COMPLIANCE			
Agreement	Yes No Uncertain	Question 12 Question 17 Question 23	Question 14 Question 18,
Descriptive		Question 15 Question 21	Question 20, Question 24
Frequency	Weekly Monthly Bi-monthly Quarterly Six-monthly Annually Uncertain	Question 16 Question 19	
Frequency	Never Rarely Occasionally Often Always	Question 22	
Numerical	None 1-2 3-4 5-6 7-9 10 >	Question 13	
SECTION D. OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: INCIDENTS, ACCIDENTS, INJURIES, AND FIRST AID			
Agreement	Yes No Uncertain	Question 29 Question 32 Question 37	Question 30, Question 35,
Descriptive		Question 31 Question 34 Question 36	
Frequency	Sometimes Rarely Uncertain	Question 25 Question 27	Question 26 Question 28

TYPE OF RATING	CATEGORY	QUESTION NUMBER
Frequency	Never Rarely Sometimes Often Always	Question 39
Numerical	None 1-2 3-4 5-6 7-9 10 >	Question 33 Question 38
SECTION E. OCCUPATIONAL HEALTH AND SAFETY: FACILITIES		
Argumentative	Yes No Uncertain	Question 40 Question 41, Question 43 Question 48, Question 49
Awareness	Aware Not aware Uncertain | Don't know	Question 44
Descriptive		Question 42 Question 45
Problematic	Not a problem Minor problem Somewhat of a problem Moderate problem Serious problem	Question 46
Rating	Not applicable Poor Fair Average Good Excellent	Question 47
SECTION F. OCCUPATIONAL HEALTH AND SAFETY: FIRE SAFETY AND FIRE EQUIPMENT		
Agreement	Yes No Uncertain	Question 50 Question 53, Question 55 Question 57

TYPE OF RATING	CATEGORY	QUESTION NUMBER
Descriptive		Question 52 Question 54 Question 56
Frequency	Monthly Bi-monthly Quarterly Six monthly Annually	Question 58
Numerical	None 1-3 4-6 7-9 10>	Question 51
SECTION G: OCCUPATIONAL HEALTH AND SAFETY: NOISE		
Frequency	Never Almost never Sometimes Often Continuously	Question 59
Numerical	1 No noise 2 Rarely 3 Occasionally 4 Often 5 Excessive	Question 60 Question 61 Question 62 Question 63 Question 64
SECTION H: OCCUPATIONAL HEALTH AND SAFETY: THERMAL, VENTILATION AND ILLUMINATION		
Agreement	Yes No	Question 65
Agreement	Yes No Uncertain	Question 67 Question 68
Argumentative	Strongly disagree Undesirable Acceptable Agree Strongly agree	Question 66

TYPE OF RATING	CATEGORY	QUESTION NUMBER
Descriptive		Question 69
SECTION I	456	
Descriptive	Open-ended questions	Question 70 Question 71 Question 72

Source: Adapted from Saunders *et al.* (2016:459; 2019:527)

ANNEXURE C-1:
GDE RESEARCH APPROVAL LETTER (2019)

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

	8/4/4/1/2

GDE AMENDED RESEARCH APPROVAL LETTER

Date:	17 September 2019
Validity of Research Approval:	04 February 2019 – 30 September 2019
	2018/123AA
Name of Researcher:	Rielander C.L
Address of Researcher:	5 Byvander Road
	Rooihuiskraal
	Centurion, 0157
Telephone Number:	012 429 2497/ 082 551 7189
Email address:	rielacl@unisa.ac.za/ rielandercl@gmail.com
Research Topic:	Exploring School Safety in Public Secondary Schools in the Gauteng Province.
Type of qualification	PhD
Number and type of schools:	Thirty Secondary Schools
District/s/HO	All Districts

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

17/09/2019

1

Making education a societal priority

Office of the Director: Education Research and Knowledge Management
7th Floor, 17 Simmonds Street Johannesburg, 2001
Tel: (011) 355 0488
Email: Faith.Tshabalala@gauteng.gov.za
Website: www.education.gpg.gov.za

1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
4. A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
5. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
6. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
7. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
8. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
9. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

Mr Gumani Mukatuni
Acting CES: Education Research and Knowledge Management

DATE: 17/09/2019

2

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Office of the Director: Education Research and Knowledge Management
7th Floor, 17 Simmonds Street, Johannesburg, 2001
Tel: (011) 355 0488
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Website: www.education.gpg.gov.za

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ANNEXURE C-2:
GDE RESEARCH APPROVAL LETTER (2020)

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

	8/4/4/1/2

GDE AMENDMENT RESEARCH APPROVAL LETTER

Date:	10 February 2020
Validity of Research Approval:	04 February 2020 – 30 September 2020 2018/123AAA
Name of Researcher:	Rielander C.L
Address of Researcher:	5 Byvander Road
	Rooihuiskraal
	Centurion, 0157
Telephone Number:	012 492 2497/082 551 7189
Email address:	rielacl@unisa.ac.za/rielandercl@gmail.com
Research Topic:	Exploring School Safety in Public Secondary Schools in the Gauteng Province
Type of qualification	PhD
Number and type of schools:	Thirty Secondary School
District/s/HO	All Districts

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

10|02|2020

1

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1. Letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
4. A letter / document that outline the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
5. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
6. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
7. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
8. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
9. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

Mr Gumani Mukatuni
Acting CES: Education Research and Knowledge Management

DATE: 10|02|2020

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ANNEXURE D-1:
ETHICAL CLEARANCE 2019

UNISA | university of south africa

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCE RESEARCH ETHICS REVIEW COMMITTEE

Date: 04 September 2019

Dear Mrs Cheryl Lin Rielander

Decision: Ethics Approval from 2019 to 2021

NHREC Registration # : (if applicable)
ERC Reference # : 2019_CRERC_031(FA)
Name : Mrs Cheryl Lin Rielander
Student/Staff No#: 6887848

Researcher(s): Mrs Cheryl Lin Rielander, rielacl@unisa.ac.za, 0825517189 or 012429 2497
Department of Operations Management
College of Economic and management Sciences
University of South Africa

"Exploring School Safety in Public Secondary Schools in the Gauteng Province"

Qualification: PhD

Thank you for the application for research ethics clearance by the Unisa College of Economic and management Sciences Research Ethics Review Committee for the above-mentioned research. Ethics approval is granted for 5 years **04 September 2019 until 03 September 2025**).

The **low risk application** was **reviewed** by the College of Economic and management Sciences Research Ethics Review Committee on **31 July 2019** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:
1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Economic and management Sciences Research Ethics Review Committee.

3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

7. No field work activities may continue after the expiry date (**03 September 2025**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

8. Permission is to be obtained from the university from which the participants are to be drawn (the Unisa Senate Research, Innovation and Higher Degrees Committee) to ensure that the relevant authorities are aware of the scope of the research, and all conditions and procedures regarding access to staff/students for research purposes that may be required by the institution must be met.

9. If further counselling is required in some cases, the participants will be referred to appropriate support services.

Note:

*The reference number **2019_CRERC_031 (FA)** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Prof AT Mutezo
Chairperson, CRERC
E-mail: muteza@unisa.ac.za
Tel: 012 429 4595

Prof MT Mogaie
Executive Dean: CEMS
E-mail: mogaimt@unisa.ac.za
Tel: 012 429 4805

URERC 25.04.17 - Decision template (V2) - Approve

ANNEXURE D-2:
ETHICAL CLEARANCE 2021

UNISA | university of south africa

UNISA COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

08 August 2019 (Date of issue)
01 July 2021 (Date of amendment)

Ref #: 2019_CERC_031 (FA)
Student#: 90207556

Dear Ms Cheryl Lin Rielander

Decision: Ethics Approval Extended to 31 December 2024

Working title of research:

Exploring School Safety in Public Secondary Schools in the Gauteng Province

Qualification: Ph.D.

Thank you for the application requesting amendments to the original research ethics certificate issued by the Department of Business Management for the above mentioned research in 08 August 2019. The approval of the requested amendment is granted/extended for the study for the period 1 July 2021 – 31 December 2024.

The low risk application was reviewed by the departmental CRERC in compliance with the Unisa Policy on Research Ethics by the University of South Africa using the expedited method.

The proposed research may now continue with the proviso that:

1. The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the UNISA Research Ethics Review Committee. An amended application could be requested if there are substantial
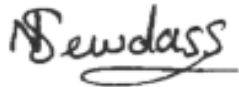
changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

3. *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

Kind regards,

Sewdass
_____

Prof Nisha Sewdass
CRERC Chair
012 429-2795
sewdan@unisa.ac.za

Approval template 2014

ANNEXURE E-1:
WORD FREQUENCIES

Word	Total number of times quoted
School/schools	1 995
Educator/educators/staff/teacher/teachers	1 553
Safe/safety	1 431
Learners/scholars/student/children	1 167
Appointment/appointments	693
Report/reporting/reported	667
Person/persons	620
Act/Acts	547
Principal/principals	435
Environment	397
Secure/security/securities	394
Inform/informed	372
Incident/incidents	354
OHS	343
Aid/aider/aiders	342
Health	329
Parent/parents	308
Representative/representatives	303
Risk	284
Law/legal/legislation	281
Responsible/responsibility/responsibilities	269
Train/training/trained	262
Communicator/D6 Communicator	242
Inspect/inspection/inspections	233
Ratio	231
School injury/injuries	210
Meeting/meetings	205

Word	Total number of times quoted
Committee	200
Manager/management	180
Member/members	178
Classroom	177
Department	175
Identity/identified	146
Education	143
Maintenance	129
Knowledge	116
School hall	105
Serious/seriousness (injury)	104
School premise/premises	98
Policy/policies	97
Windows	92
Register/registers	81
Accidents	76
Buildings	61
Bullying	61
Emergencies	61
Asbestos	57
Regulation	31
Safety investigate/investigation	24
Accountability	20

Source: Researcher's own compilation

Code group	Code (codes <20 not listed)	Frequency
Lacking areas related to school safety (21 codes)	View not holistic	91
	OHS awareness	61
	Lack of accountability and responsibility	58
	Lack of leadership	50
	Resource constraints	32
	Accountability and responsibility	31
	Non--effective communication	28
	Opportunities for improvement	26
	Lack of health and safety training	22
	Psychosocial elements	21
	Silo approach	18
	Vandalism versus school safety	17
	School violence, bullying and harassment	15
	Strategies for follow-up action	12
	Lack of health and safety knowledge	12
	Lack of or unknown fire training	12
	Who is the health and safety committee	4
	Potential or actual substance abuse	3
	NSSF (National School Safety Framework)	3
	Questionable incorrect procedures	2
	Uneven training	1
Management safety knowledge and expertise (22 Codes)	Section 8 - Employer duties responsibilities	125
	Section 24 - Reporting incidents injuries	91
	Importance of oversight role	71
	Area requiring specialised skill	69
	Section 13 - Duty to inform	64
	OHS Policy	59

Code group	Code (codes <20 not listed)	Frequency
	Section 17 - Health and safety representatives	57
	OHS knowledge	49
	Safety and security	41
	General Safety Regulations (GSR) - first aid	38
	Section 18 - Health and safety representative functions	36
	Resource constraints	32
	OHS inspections	31
	Accountability and responsibility	31
	Use of technology	29
	View more holistic	27
	Strategic and in-depth view of OHS	24
	Section 19 - Health and safety committee skills-based	20
	OHS training	16
	Who is the health and safety committee	4
	Section 24 - General duties of the employer	3
	Uneven training	1
Safety hazards and dangers (21 Codes)	View not holistic or proactive	91
	Lack of accountability and responsibility	58
	Lack of leadership	50
	Facilities' Regulations	40
	Environmental Regulations - fire safety	34
	Resource constraints	32
	Crises-driven health and safety	25
	OHS hazards and risks	25
	Resource constraints	22
	Lack of health and safety training	22
	Fire drills	20
	Silo approach	18
	Asbestos Regulation (AR)	17
	Vandalism versus school safety	17

Code group	Code (codes <20 not listed)	Frequency
	School violence and bullying	15
	Lack of OHS knowledge	12
	Lack of or unknown fire training	12
	Health	6
	Discipline	5
	Covid-19	5
	Uneven training	1
SASA No. 84 of 1996 (16 codes)	View not holistic or proactive	91
	Lack of leadership	50
	SASA No. 84 of 1996	42
	Accountability and responsibility	30
	View more holistic	27
	Involvement of parents	26
	Resource constraints	22
	Silo approach	18
	Vandalism versus school safety	17
	Strategies for follow-up action	15
	Membership of professional body	14
	Formal follow up	13
	NSSF (National School Safety Framework)	3
	Volunteerism – level of commitment	2
	Link to constitutional rights	1
	Uneven training	1
OHS specific codes (17 Codes)	OHS incidents/injuries	84
	OHS awareness	61
	OHS policy	59
	OHS knowledge	49
	Involvement of parents	39
	Accountability and responsibility	30
	OHS hazards and risks	25

Code group	Code (codes <20 not listed)	Frequency
	Crises-driven health and safety	25
	Strategic and deepened view of OHS	24
	Lack of health and safety training	22
	Asbestos Regulation (AR)	17
	Delegation of responsibility	16
	OHS training	16
	OHS non-hazards and risks	13
	Lack of safety knowledge	12
	Lack of uneven fire training	12
	Housekeeping	10
OHS Act No. 85 of 1996 (16 Codes)	Section 8 - Employer duties and responsibilities	125
	Section 24 - Reporting incidents injuries	91
	Section 13 - duty to inform	64
	Section 17 - Health and safety representatives	57
	Facilities' regulations	40
	General Safety Regulations (GSRs) - first aid	38
	Section 18 - Health and safety representative functions	36
	Environmental regulations fire safety	34
	Accountability and responsibility	30
	Section 19 - Health and safety committee skills-based	20
	Fire drills	20
	Asbestos Regulation (AR)	17
	Delegation of responsibility	16
	Section 8 - Non-compliance	7
	Section 17 - Partial compliance	5
	Section 24 - General duties of the employer	3
Strategic areas (15 codes)	Importance of oversight role	71
	Area requiring specialised expertise	69
	OHS policy	59

Code group	Code (codes <20 not listed)	Frequency
	Importance of communication	54
	Accountability and responsibility	30
	Proactive strategies	32
	Use of technologies	29
	Outcomes driven	27
	View more holistic in terms of skills	27
	Strategic and deepened view of OHS	24
	OHS training	16
	Membership of professional body	14
	Link to vision and mission	13
	Holistic system approach	10
	Link to constitutional rights	1
Psychosocial areas (6 codes)	Safety and security	41
	Vandalism versus school safety	24
	Strategic and deepened view of OHS	24
	Psychosocial safety elements	21
	Vandalism versus school safety	17
	Covid-19	5

Source: Researcher's own compilation

SECTION A: SAMPLING DETAIL

Questions one to four address aspects of sampling data, such as school location, number of staff members employed, number of scholars, and rank/post level of the participant, to gain background on the school.

SECTION B: OCCUPATIONAL HEALTH AND SAFETY LEGISLATION. KNOWLEDGE

5.   Please explain your understanding and knowledge pertaining to the Occupational Health and Safety (OHS) Act No. 85 of 1993

"It is my understanding that it addresses the protection of personnel and children and ensures that the relevant safety measures in terms of accidents are in place." (Interview 1).

"I'm not very clued up related to this Act. However, if I understand, it is the protection of staff and learners while at school. The Act was developed to ensure that safety is implemented in all facets of a school." (Interview 2).

"Not aware of the Act nor do I have much knowledge pertaining to the Act. I would think that it should address aspects of the safety of learners and teachers and their rights. I think it also looks at the dangers in the school and provides educational law where safety compliance is not meet." (Interview 3).

"To maintain safety within the schools through effective education and good discipline, this also protects the rights of learners and educators through a safe school environment." (Interview 4).

"To be committed to promote and maintain a safe working and teaching environment to ensure the safety and health of our employees, pupils, parents and visitors via continual improvement of our OHS programme." (Interview 5).

"The Act provides for the health and safety of all persons at the school. The Acts regulate and govern the minimum specific requirements which need to be in place at a school and place of work. It also speaks to legislation in this regard and responsibilities of employers." (Interview 6).

"Not aware of the OHS Act nor any knowledge pertaining to the Act. I think it has something to do with the safety in schools. I think it has to do with creating a safe learning environment in combination with the schools Act." (Interview 7).

"Basic knowledge. To provide for health and safety of learners and teachers at an institution and their rights. It establishes procedures for dealing with workplace hazards and provides enforcement of the educational law where compliance is not met safety wise." (Interview 8).

"To provide general safety regulations to ensure the safety of all persons in a working environment in SA. To be adhered to by all staff and affected parties on the premises to support a safe environment. Schools need to be aware of the health and safety aspects of a school, as every school has low and high risks, to develop preventative measures." (Interview 9).

"The Department of Education conducted a health and safety inspection at the schools in 2019. It was then that I realised what health and safety was about. It was about the people (personnel) and the building. It's about ensuring the safety of everyone who works in the school, the learners who come to school and persons who visit the school. As the school principal, I have appointed (in writing) persons to manage health and safety in the school, as well as fire safety. The school has contracted with Omega for the annual servicing of the fire equipment. They have also conducted a formal health and safety inspection of the school." (Interview 10).

"At XYZ High School we believe in the commitment to an ethos of excellence and quality, honesty, integrity and gentlemanly conduct, tolerance and empathy, trust and respect, self-discipline, initiative and enterprise, leadership and team spirit, full participation, free communication, personal and social achievement. The motto of XYZ High School, "Arise", inspires the tradition, values and spirit of the learners, parents and staff of the XYZ family. This Act regulates the health and safety of educators and learners' safety in the workplace." (Interview 11).

"To provide for health and safety of learners and teachers at an institution and their rights. It establishes procedures for dealing with workplace hazards and provides enforcement of the educational law where compliance is not met safety wise." (Interview 12).

"My knowledge via my husband who deals with health and safety legislative matter on construction sites. Safety of learners is paramount responsible person. Teachers need to be on duty before school, break and after school." (Interview 13).

"I have a basic knowledge of safety petaining to the Health and Safety Act." (Interview 14).

6.   As the school principal you are regarded as the employer in terms of the Occupational Health and Safety (OHS) Act No. 85 of 1993. Please explain your understanding of the responsibilities of an employer as prescribed by the Occupational Health and Safety (OHS) Act No. 85 of 1993.

"As the health and safety represetative I believe the responsibility of the employer would be to ensure the safety of teachers, children and all people entering the school." (Interview 1).

"As indicated 'Im not that clued up regarding this Act, however I think it is to ensure the safety of staff and learners while on the school premises." (interview 2).

"The safety of learners in my classroom and on the school's premises is my responsibility. The principal is also responsible for the safety and security of staff members. Related to the OHS Act I'm not sure." (Interview 3).

"I have heard of the Occupational Health and a Safety Act but I have poor and hardly any knowledge of the Act." (Interview 4).

"To ensure that the duties and responsibilities as contemplated in section 16(1) and 16(2) of the OHS Act are correctly discharged." (Interview 5).

"To provide for the health and safety of all persons at the school. This includes taking all reasonable measures and supervision of all aspects related to the safety at the school. All safety regulations are being followed at the school. We strive to keep all our students safe during school times. All students and faculty are required to wear masks at all times, and sanitise their hands regularly." (Interview 6).

"I'm responsibile for the safety of learners as a whole on the school's premises as well as the safety and security of staff members. I think this would link to the previous questions related to the OHS Act, I'm not sure." (interview 7).

"As the Safety Coordinator I'm responsible to guard against (educators and learners) hazards and risks around the school. To make sure that our working environment becomes hazard free and no risks for the safety of all people." (Interview 8).

"At the school learners are our priority and we view the educational task of the school's unique and talented human potential as a privilege and responsibility. Here we teach and educate, and we are inspired daily with the practice of values such as excellence, compassion, positive thoughts, integrity and respect. Health and safety in the school should form a part of the school's continuous planned process and an integral part of the management accountability. It's my responsibility as the school principal to ensure the safety aspects and to keep everyone informed (responsible parties) and to implement all safety measures pertaining to the Safety Act." (Interview 9).

"The OHS Act ensures the safety of workers in South Africa and although the Act does not specifically include schools in the description, we are accountable and responsible in terms of the Act and regulations in the essence of an employer/employee. Training in relation to understanding the OHS Act is a problem." (Interview 10).

"The principal by virtue of being the employer is mandated to ensure the implementation of this Act and to ensure that all employees are exposed to a safe working environment." (Interview 11).

"I have a basic knowledge of safety petaining to the Health and Safety Act." (Interview 12).

"Employer is the Gauteng Department of Education. The principal is their representative and acts on their behalf. Basically, the principal is responsible for everything that causes a problem on with the school grounds." (Interview 13).

"I have a basic knowledge of safety pertaining to the Health and Safety Act." (Interview 14).

SECTION C: OCCUPATIONAL HEALTH AND SAFETY LEGISLATION. COMPLIANCE

7.   Please explain how educators are informed regarding the content of the OHS policy.

"At the beginning of every new year the school has a meeting where the school policies, including the safety policy is reviewed and discussed. If any problems are

identified, then educators are appointed to investigate these unsafe aspects and feedback is given to the principal. This feedback is discussed by the principal and facility manager." (Interview 1).

"The school has weekly hall periods on Mondays where staff and learners can be informed of safety aspects. There are also staff meetings where teachers are informed of safety aspects in the school. Learners and parents are informed through the online D6 Communicator." (Interview 2).

"The school has a safety meeting that is coordinated by a health and safety committee. Safety workshops are held by the Department of Education and teachers are required to attend." (Interview 3*)*.

"The school has assembly and staff meetings as required where educators and scholars are informed of any poliy changes. We also make use of the D6 Communuicator and a school WhatsApp group." (Interview 4).

"All educators are informed through staff meetings and are made aware of the hazard associated with their work. Each educator receives a copy of the OHS policy for reference." (Interview 5).

"2020 Posters placed in a strategic position. Report back sessions by educators who attended training courses. Scholars are informed during information sharing sessions during general assemblies." (Interview 6).

"Staff meetings which take place weekly with informal daily communication during break periods if needed. We also make use of the notice board, school news letter and the online D6 Communicator used by most schools." (Interview 7).

"The coordinator in the school manages and holds health and safety committee. The Department of Education organises workshops that educators need to attended." (Interview 8).

"The school has an OHS policy which is reflected in the school code of conduct for educators and scholars. Educators are informed regarding the OHS policy and school code of conduct when they begin working at the school. The school keeps a diary (written format) in terms of safety and general administration. Feedback and suggestions in terms of issues/problems linked to school safety committee." (Interview 9).

"Educators are informed twice per week at staff meetings on relevant aspects pertaining to the school and any safety concerns. We conduct emergency drills twice per quarter. We have yearly discussions with workers related to safety and equipment, chemicals, grounds, ladders and other safety related aspects which may be identified." (Interview 10).

"At the start of each academic year all employees are informed that they are to familiarise themselves with the content of this Act which forms part of the school's health and safety policy. The estate manager is furthermore tasked to ensure that all support staff is guided to the contents of and the importance of compliance to the OHS Act to ensure is maintained at all times in the school." (Interview 11).

"There is a Health and Safety committee at school and in that committee, there is a coordinator who holds meetings. There are also workshops that need to be attended by educators, organised by the Department of Education for guidance and information purpose." (Interview 12).

"The school has staff meetings and makes use of school circulars to inform educators regarding the content of the schools policies." (Interview 13).

"The policy is displayed on the notice boards and safety aspects are discussed in staff meetings." (Interview 14).

8. Please explain how scholars are informed regarding the content of the OHS policy.

"If there is a situation scholars are informed during weekly assembly meeting. If there is any immediate concern for safety students as well as parents are informed via the school Communicator (D6) which is updated daily by the admin office." (Interview 1).

"During assembly/hall period learners and teachers are informed with regard to new developments and safety aspects." (Interview 2).

"During hall assembly and through teachers in the classroom. The school also uses the D6 communication tool as well as a news-letter." (Interview 3).

"During hall and assembly as required. Teachers may also inform learners during register period. The school makes use of the D6 Communicator to infom educators, scholars and parents." (Interview 4).

"All policies applicable to the learner are available to them and explained on a regular basis in the classroom, extra curricular activities and school hall." (Interview 5).

"Scholars are informed during information sharing sessions during general assemblies." (Interview 6).

"During weekly hall assembly and through register teachers during registration period. We also make use of the notice board, school news letter and the online D6 Communicator used by most schools which learners and parents need to register on." (Interview 7).

"Circulars, notices and newsletters are an important means of communication between the school and parent. Once issued to pupils, circulars sent home will be regarded as having been read by parents. The effectiveness of the communication system is reliant on the correctness of detail contained on the school's database. Please ensure that changes are reported to the admin office timeously. Information and special circulars – these circulars contain information of a permanent nature. Short message service (SMS) and D6 Communicator for short reminders on important events." (Interview 8).

"There are weekly assembly meetings (hall/school ground) where we communciate aspects of importance to learners. There are also grade meetings where edcators are given information. In some cases grade heads and educators will relay important infomation to learners." (Interview 9).

"Educators are informed at staff meetings and learners at assembly/hall. With the current Covid-19 looming we have begun educating both educators and learners regarding the Corona virus and how a spray bottle is used and demonstrated in class. Learner safety is important and we conduct vehicle (bus) checks as well as food hygiene checks by vendors' tuck shops." (Interview 10).

"This is currently done informally through communication periods and obviously does not adequately address the need for them to be fully informed. Greater attention has to be given to a more formalised sharing of such information." (Interview 11).

"Through presentation at school assembly, during Life-skills and Life-Orientation perfects (lessons) and through code of conduct for learners." (Interview 12).

"At school assembly, during parent/learner meetings and the D6 Communicator." (Interview 13).

"During assembly and hall, via the D6 Communicator." (Interview 14).

9.   Please explain the process of appointing H&S representatives in the school, who is appointed, and how the actual appointment of H&S representative is made?

"The health and safety chairperson and members are appointed at the begining of each new year as identified by the Principal and senior management. The health and safety course is renewed every 3 years." (Interview 1).

"Teachers are appointed through the principal's office based on their knowledge pertaining to safety and security. There are about 5-7 appointed representatives." (Interview 2).

"There are appointed safety representatives both learners and teachers. Teachers identified by peers. Learners identified by teachers." (Interview 3).

"Teachers are requested (volunteer) to assist with safety. Each teacher is responsible for ensuring the safety in their classroom and on the school grounds." (Interview 4).

"The principal (CEO) who is the appointed section 16.1 and the assistant CEO who is the appointed section 16.2 in terms of the OHS Act No. 85 of 1993 is responsible for appointing a supervisor. Together with the health and safety representatives, they form the OHS committee." (Interview 5).

"The position is advertised internally. If more than one applicant the school management team (SMT), and SGB will make recommendations." (Interview 6).

"Normally done through a selection process where teachers will be selected by staff and students. Teachers identified by peers. Learners identified by teachers. There are appointed safety representatives both learners and teachers." (Interview 7).

"The teacher must be Life Orientation or Life Skills educator, a representative from maintenance committee, our school management team, SGB representatives are involved in the committee." (Interview 8).

"There is a specific person (educator) in charge (appointed) with health and safety. The appointed person (marketing/branding managers) will relay information to the principal and deputy head principal as required. The school has qualified first aiders who are supported by other educators and sometimes, even learners. Educators and learners nominate candidates, and they vote annually in terms of the proposal. Grade

heads are also responsible for looking at safety within their area of responsibility. The head of discipline is responsible for school safety and security." (Interview 9).

"At the annual school safety meeting, educators are asked to volunteer to serve on the health and safety (health and safety) committee. The chair of the health and safety committee is the school principal. There is a total of seven health and safety representatives as well as 12 management and eight Grade Heads on the committee. There is also a fire safety member and the terrain manager." (Interview 10).

"The composition of this structure is made up of individuals chosen by the SGB and the Principal as a result of or by virtue of their positions that they hold in the school that are directly linked to health and safety aspects, such as the estate manager." (Interview 11).

"The teacher that is appointed must be Life Orientation or Life Skills educators, there is a representative from the maintenance committee, the school management team member, and an SGB representatives involved in the health and safety committee." (Interview 12).

"The safety person must be elected by the staff at an election." (Interview 13).

"No formal process of selection only avolunteer process." (Interview 14).

10.   What type of training has the appointed H&S representatives received?

"As indicated the H&S representative training is renewed every 3 years. Im not sure who is appointed to give the training." (Interview 1).

"No formal training has been given to the appointed safety representatives except that which they learned during their formal teacher's training." (Interview 2).

"I'm unsure. However, there are safety workshops held by the Department of Education that teachers are required to attend." (Interview 3).

"None that I'm aware of." (Interview 4*).*

"OHS Risk assessment course (x6), OHS health and safety representatives (x3) and OHS first aider level 2 (x1)." (Interview 5).

"The school is a member of Confederation of Employees in South Africa (COFESA) and sends reps to training courses when available." (Interview 6).

**"Trained by a service provider (not sure who)."* (Interview 7).

"Workshops organised by the Department of Education. Internal workshop organised by the health and safety committee." (Interview 8).

"There has been no formal safety training given. Grade heads have not received any safety training. The Discipline head is repsonsible for safety and security in the school. I'm unsure of the training received." (Interview 9).

"Department training. No formal safety training has been conducted." (Interview 10).

"At present no physical training sessions but rather a distribution of information for self-education or training." (Interview 11).

"Workshops organised by the Department of Education and internal workshop organised by the school Health and Safety committee." (Interview 12).

"Very little." (Interview 13).

"There has been no formal safety training given. Grade heads have not received any safety training." (Interview 14).

11.   How many H&S representatives have been appointed?

Interviewee response	Legal calculation	Compliance
	The legislative prescript ratio of one health and safety representative to 100 employees (1:100) is used for this section and is calculated as follows:	**Partial compliance** **Non-compliance**
Interview 1		
"Less than 10."	1 700 learners + 125 educators = 1 825 persons. 1 825 / 100 = 18.25 This equates to the appointment of 18 H&S representatives.	Partial compliance
Interview 2		
"This is about five to seven appointed representatives."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six H&S representatives.	Compliance
Interview 3		
"Not sure maybe 10."	>500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 The legal appointment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of at least five H&S representatives.	Compliance

Interview 4		
"None that I'm aware of."	>500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of at least five to six H&S representatives.	No compliance
Interview 5		
"Six."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 The legal appointment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of five to six H&S representatives.	Partial compliance
Interview 6		
"Three."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six H&S representatives.	Partial compliance

Interview 7		
"Three."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 The legal appointment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of five to six H&S representatives.	No compliance
Interview 8		
"Ten - coordinator, all members of the SMT, SGB member, educators."	500 learners + 30 educators = 530 persons. 530 / 100 = 5.5 " This equates to the appointment of four to five H&S representatives.	Compliance
Interview 9		
"Ten members are: Coordinator, all members of the SMT, SGB members, Educators."	500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 The legal appointment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of five to six H&S representatives.	Compliance

Interview 10		
"There is a specific person (educator) in charge (appointed) with health and safety. *The Discipline head is responsible for safety and security.* *Grade heads (x5) are also responsible to look at safety within their area of responsibility – total of seven health and safety representatives."*	1 142 learners + 88 educators = 1 230 persons. 1 230 / 100 = 12.3 The legal appointment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of 13 H&S representatives.	Partial compliance
Interview 11		
"Seven plus 12 plus eight, totaling 27 appointed health and safety representatives."	1 950 learners + 140 educators + 19 workers = 2 109 persons. 2 109 / 100 = 21.09 This equates to the appointment of 21 H&S representatives.	Compliance
Interview 12		
"Nine appointed health and safety representatives."	500 learners + >50 educators = >550 persons. 550 / 100 = 5.5 The legal appoinment ratio ito OHS Act is 1 H&S rep per 100 persons in a low-risk environment. This equates to the appointment of five to six H&S representatives.	Compliance

Interview 13		
"One."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six H&S representatives.	Partial compliance
Interview 14		
"Unsure."	500 learners + 30 educators = 530 persons. 530 / 100 = 3.5 This equates to the appointment of three to four H&S representatives.	Non-compliance

12.   How often do H&S committee meetings take place and what aspects are discussed at these meetings?

"At the beginning of every new year the school has a meeting where safety policy is reviewed and discussed. The previous year's aspects and what/how have they been addressed is revised to determine if further intervention is needed and any current safety aspects/concerns are discussed." (Interview 1).

"The school tries to have bi-monthly safety meetings. Important safety aspects can be addressed at weekly staff meetings." (Interview 2).

"No formal schedule is followed, as indicated previously safety is discussed at staff meetings and assembly/hall period." (Interview 3).

"Mostly quarterly when the school has its discussions at the beginning of the term we wiill discuss the replacement of broken windows and doors, and problems in bathrooms." (Interview 4).

"Monthly where we discuss recordable incidents and preventative measurements put in place. Also we discuss inspection reports discussed and set the date/time of next meeting." (Interview 5).

"A minimum of once a term. The topics for discussion usually involve safety and security issues which include buildings and maintenance." (Interview 6).

"No formal schedule as far as Im aware. There are discussions at staff meetings and assembly when safety aspects have been identified." (Interview 7).

"Twice per term and they address the following aspects: maintenance issues, cleanliness of the environment, security, discipline and health issues." (Interview 8).

"There is no formal schedule and the school safety committee will meet on demand. Monthly inspections on safety is conducted by the school community. During morning assembly for staff safety aspects are discussed if relevant. Safety minutes at meetings are taken and the information is sent to affected parties and the school governing body." (Interview 9).

"Meetings are conducted twice per quarter, with ad hoc informal discussions. Minutes are kept for formal meetings. A parent meeting is held at the beginning of the year where aspects are discussesd, including safety and security of learners." (Interview 10).

"The health and safety committee is chaired by the estate manager covering aspects with regard to compliance to health and safety aspects, an inspection of the infrastructure, accident prevention, maintenance of firefighting equipment and accidental injury prevention protocols." (Interview 11).

"Meetings are conducted twice per term, and discusses aspects of maintenance, cleanliness andhygiene, health issues security, and discipline." (Interview 12).

"Once per term." (Interview 13).

"Safety is discussed at staff meetings and assembly/hall." (Interview 14).

13.   How are health and safety inspections conducted?

"Ad hoc basis. Educators conduct inspections within their classrooms continuously as well as within the school facility. Should any safety concerns be identified, it is reported by the educator to the school office. There is no formal checklist that we use." (Interview 1).

"Inspections are conducted monthly by teachers in their classrooms, and administration support staff conduct inspections in their area of responsibility. The groundsmen will report any safety aspect to the school office." (Interview 2).

"These are conducted by teachers, administration and support staff, usually twice per term. The school makes use of the National School Safety Framework (NSSF) document of the Department of Education as a guideline. Also have fire department that inspects the fire extinguishers." (Interview 3).

"Each educator is responsible for safety in their classrooms and on the school grounds. Educator reports what is noted to the school office, who will report to the facilities person and school principal." (Interview 4).

"We use a checklist (on a regular basis) to check compliance of safety regulations." (Interview 5).

"The appointed H&S representatives conduct a 'walk-about' on the school property and inspection of facilities." (Interview 6).

"By way of an inspection register. These are conducted by teachers, admin and support staff. Also have fire department for fire extinguishers." (Interview 7).

"The school uses the National School Safety Framework (NSSF) which guides us during the meeting." (Interview 8).

"There is no formalised health and safety inspection schedule, although we try to conduct monthly inspections where informal safety issues are reported. As previously indicated, we utilise the school holidays to do school maintenance and report on safety. The report is filed, and the terrain committee is informed." (Interview 9).

"The school has a contract with Copwatch whereby one of the members (Bertus) conducts ad hoc inspections related to safety and security." (Interview 10).

"A subgroup of the H&S committee regularly does inspection by a walkabout. Educators are required to inspect their classrooms and report any unsafe conditions. Everyone in the school has a responsibility to report any unsafe aspects identified." (Interview 11).

"They use the National School Safety Framework (NSSF) document which guides them during the meeting." (Interview 12).

"Health inspections occur every six months from the Department of Health." (Interview 13).

"Unsure, teachers conduct inspections in their classrooms." (Interview 14).

14.   Please explain how hazards and risks are identified on the school premises during the H&S inspections.

"As indicated, educators conduct inspections within their classroom continuously as well as within the school facility. Any identified safety concerns, hazards and risks are reported to the principal/adjunct principal who in turn will give these health and safety matters through to the terrain (estate) manager to manage further." (Interview 1).

"These are identitfed by teachers during monthly inspections and the groundsmen report any safety aspect to the school office." (Interview 2).

"These are conducted by teachers, admin and support staff, usually twice per term. The school makes use of the National School Safety Framework (NSSF) document of the Department of Education as a guideline. Also have fire department that inspects the fire extinguishers." (Interview 3).

"Each educator is responsible for safety in their classrooms and on the school grounds. Identified by learners and teachers and reported when noted." (Interview 4).

"Line managers and supervisors will do a risk assessment by using a risk assessment form. Employees report a hazard that may pose a risk. Regular inspections of premises by managers and supervisors." (Interview 5).

"Potential hazards are identified through the walk-about conducted by the appointed health and safety representative. This includes structural, electrical, access and other threats to the safety of learners and staff." (Interview 6).

"These are identified by the teachers in their classrooms, admin staff and support staff in the school, It is recorded in an inspection register. During inspection hazards are reported by teachers. During school holiday the school conducts maintenance while there are no classes and the environment is quite and safe for learners and staff." (Interview 7).

"Reported by the teacher to the coordinator (H&S) and the reports are written in the incident book. The maintenance committee also checks the broken windows, desks and the environment as well. They also used the red-tape to identify the hazards and risks." (Interview 8).

"There is a system in place to follow up on school incidents and to determine what happened. A quality assessment is done on all risk related to the infra-structure. After Driehoek school incident an inspection was conducted by an appointed engineer to determine any structural and civil safety aspects. Any risks idietiifed are reported to the SGB and school regional committee." (Interview 9).

"The school has a check list that is issued to teachers to conduct inspections within their classrooms. The checklist is handed in at the office placed on file for review by the Copwatch member. Should an injury occur an immediate inspection is conducted by a teacher and the injury register completed." (Interview 10).

"A subgroup of the health and safety committee regularly does inspection by a walkabout. Educators are required to inspect their classrooms and report any unsafe conditions. Everyone in the school has a responsibility to report any unsafe aspects identified." (Interview 11).

"As indicated above a subgroup of the H&S committee regularly does inspection by a walkabout. Educators are required to inspect their classrooms and report any unsafe conditions. Everyone in the school has a repsonsibility to report any unsafe aspects identified. Should any of the infrastructure and/or equipment pose a risk to they are identified to be hazardous and investigated." (Interview 12).

"Hazards and risk are noted by all educators who report the matter to either the principal or myself who in turn note and inform the grounds manager – he attends to the matter and keeps us informed." (Interview 13).

"Reported by the teacher to the school office." (Interview 14).

15.   What hazards/risks have been observed/reported during these health and safety inspections?

"Stair railings and stair that do not have non-slip strips." (Interview 1).

"Nothing that I can recall at the moment. Except perhaps access of persons to the school during school time. These persons are scanned at the main gate. However, one is not always sure if they report to the school office." (Interview 2).

"Liquid spillages, broken doors and windows. Dirty bathrooms and leaking tapes. Old building, and garbage." (Interview 3).

"Loose stair railings, broken windows, cracks in the walls, broken taps, no fire extinguishers, low tree branches, and uneven paving." (Interview 4).

"Open doors at unauthorised entry points. Liquid petroleum gas (LPG) cylinders are removed from the storage container. Electrical distribution boards that have no cover plates and are unlocked. Structural damage - has been assessed by an engineer and declared safe. Infested staff quarters requires pest control. Emergency exit signage in the school hall is obstructed by a banner." (Interview 5).

"Broken windows. Open manhole covers. Structural failure of roof trusses. There are broken roof trusses which could cause a collapse of roof tiles. Unsafe electrical wiring in the sound room. Unauthorised access to the swimming pool. Broken floor tiles. Need for additional hand railings on the stairs. Broken mirrors with sharp edges in toilets. Perimeter walls are busy falling over. Graffiti." (Interview 6).

"Broken doors. Liquid spillages. Garbage." (Interview 7).

"Broken windows. Broken desks. Broken unsafe electrical wires. Cleanliness of toilets, classes and other rooms. Environment. Storage room (for food). School grounds. Old buildings. Water taps. Securities. Danger zone first aid kit. Kitchen. Sickbay (room for sick learners). Storage room (books)." (Interview 8).

"Electrical cables. Security and security aspects during school events. We employ roaming guards to assist with security aspects. There is gate security for safety and security of educators and learners." (Interview 9).

"Stairs and staircases. Running of scholars playing on school grounds. Throwing of water bottles (anything to throw). Dangerous equipment such as diving equipment, grass cutting and electrical cables. Beestings. Dangerous and sharp objects. Camp safety." (Interview 10).

"Broken seating on permanent pavilion stands. Unsecured fire equipment. Cracked tiles in the walkthrough. Cracked basins in the bathrooms. Flushing mechanisms of toilet not working. Unsecured railing on outside walkways. Exposed electrical wires in public space, broken windows. Blocked drains." (Interview 11).

"Broken windows, door and desks. Unsafe and broken ethical wires. Cleanliness of toilets and classes. Leaking and broken water taps on the school grounds. Food and book storage rooms. Old buildings. Accessiblity to First Aid kit." (Interview 12).

"Broken floor tiles on steps in corridors. Cover plates missing of electrical points and switches. Poor lighting when entering the hall from the foyer. Creeping damp in many classrooms. Damaged roof trusses. Ceiling leaks. Windows that do not close due to fittings being stolen. Handrails missing from stairs." (Interview 13).

"Slippery tiles. Damaged lights. Electrical wires. Broken doors and windows." (Interview 14).

16. Please explain how educators, scholars, parents and other persons are informed regarding identified hazards and risks on the school premises.

"The school makes use of an online Communicator (D6) that is updated daily by the admin office. Any concerns are given through to the admin office who will then post an immediate/urgent communique on the D6 Communicator." (Interview 1).

"Staff and learners are informed through hall periods, staff meetings, health and safety meetings. The school aso makes use of an online communication tool - the D6 Comunicator." (Interview 2).

"We make use of a school and class WhatsApp group as well as a bulk SMS function. Teachers are informed during staff meetings, and learners are informed during assembly and register period." (Interview 3).

"The school makes use of a school newsletter, school website and a school Communicator (D6)." (Interview 4).

"Scholars are informed during school hall assembly periods where discussion of risk areas takes place. Parents are informed through a newsletter, cell phone SMS, WhatsApp, and the D6 Communicator." (Interview 5).

"Scholars are informed during information sharing sessions and during general assemblies. Parents are informed using cell phone SMS and e-newsletter." (Interview 6).

"During staff meetings, assembly, register period. We also make use of a school and class WhatsApp group, as well as a bulk SMS function." (Interview 7).

"*They are informed through parent meetings, staff meetings, different committee meetings such as safety, school based suppport teams (SBST) and SGB meetings."* (Interview 8).

"Educators are informed during staff meetings and learners during the assembly period. Serious aspects will be communicated with the grade-heads, who in turn will inform the grade-educators. The school uses an online electronic program, D6 Communicator where

specific safety concerns/incidents will be posted. The school also uses a long-term newsletter (Chillie Chat) that is emailed to all educators, parents, and learners. It is also available in a hardcopy format from the front desk." (Interview 9).

"Educators receive information at staff meetings. Learners are informed during hall and assembly. Parents are informed using a school e-newsletter and SMS." (Interview 10).

"Learners are informed during school assembly. Educators are informed via email and during school assembly. Parents and others are informed of obvious risks are highlighted by informing the public of it via posters and notices posted in a visible manner." (Interview 11).

"They are informed through parent's meetings, staff meetings, different committee meetings, school governing body (SGB) meetings." (Interview 12).

"Educators and scholars are notified in school meetings." (Interview 13).

"Through staff meetings, assmebly/hall sessions, D6 Communicator and the school newsletter." (Interview 14).

SECTION D: OCCUPATIONAL HEALTH AND SAFETY LEGISLATION. INCIDENT'S, ACCIDENTS, INJURIES AND FIRST AID

17. Please explain what process is followed when an incident, accident and injury occur on the school premises.

"The scholar will report to either the teacher or directly to the office who will inform a first aider who will conduct an assessment to determine the nature of the injuries. If these injuries are of an urgent nature, the admin office will be requested to contact EmergMed for immediate emergency assistance and an ambulance. Once the student has been assessed and/or stabilised, the admin office will be requested to contact the parents to fetch the scholar." (Interview 1).

"Don't know if there is an incident/injury register. Teacher/learner reports to the school office. Maybe they keep the register." (Interview 2).

"There is an incident policy that is followed and would depend on the seriousness of the incident. Incidents/injuries are managed by teachers, administration, and support staff

and report to the principal/deputy head principal. A report must be written in the incident book and submitted to the safety person. First-aid is applied for minor incidents, and an ambulance will be called for more serious incidents." (Interview 3).

"Reported to the office. The teacher will assist the learner and then call the first aider or take the child to the sickroom for further assistance. The parent is called to fetch the child and take to the doctor." (Interview 4).

"All accidents are reported to the head of first aid at the school. The form for the recording of incident must be completed and the parent must be contacted." (Interview 5)

"The health and safety officer is informed and response is coordinated from admin office. All details of the incident are recorded, and an investigation report is opened. The school has a well-trained first-aid team that responds to emergencies. The teacher in charge will advise on calling an ambulance. The school has insurance cover for each learner which guarantees admission to closest private hospital." (Interview 6).

"There is an incident policy that is followed and an incident register that is completed. The learner reports to the teacher and is taken to the office and sick room for assessment by the teacher Incidents/injuries are managed by teachers, admin and support staff and report to the principal/deputy head principal and registered in the incident register." (Interview 7).

"Depends on how serious the incident or accident or injury is, we follow the protocol. The teacher writes a report and submits it to the safety coordinator. If the injury is minor, he/she apply the first aid to the learner, and if the incident is an emergency, we call the ambulance and the parents." (Interview 8).

"One of the appointed first aiders on the contact list (three educators are appointed with level 3 training) at reception is called immediately. The first aider will then conduct an informed assessment of the learner who has been injured. An assessment may be conducted in the sickroom by a first aider when a learner reports to the office. The school is linked to a response unit (Monitor Net) who will be contacted (if required) and a medical support vehicle linked to Med clinic and well-equipped will be dispatched to the school. The first aider will stabilise the leaner while awaiting medical assistance. If needed, an ambulance will be called for severe injuries and the parents informed." (Interview 9).

"There is an appointed teacher on terrain duty. The injured learner/another learner will report to the office or directly to the teacher on duty (if known). The teacher on terrain duty will report to the first aid station for first aid assistance. The learner is assessed by a first aider in the sick room or on the premises depending on the type of injury. If a learner is suspected of having a head injury, the parents are contacted to fetch the learner and take them for medical assistance. The injury forms are to be completed by the Education Department. The school has contracted with a medical service supplier for the refilling of first aid kits." (Interview 10).

"The chairman of the H&S committee is informed. He then informs the headmaster and SMT. The first aider will do initial assessment. If beyond the school's ability to deal with, referral will happen. Serious cases/incidents will be reported to the GDE." (Interview 10).

"It depends on how serious the incident or accident or injury is. At the school we follow the protocol/policy. The teacher writes a report and submits it to the safety coordinator. If the injury is minor he/she applies the first-aid to the learner and if the incident needs emergency we call the ambulance and the parents." (Interview 12).

"The teacher in charge of first aid who is a level 3 first aider is called as well as either the boy or girl first aider who is also qualified." (Interview 13).

"It is reported to the teacher. The learner is taken to the office. Incidents/injuries are managed by teachers, administration and support staff and report to the principal/deputy head principal." (Interview 14).

18.   To whom are these school accidents, incidents and injuries reported?

"As indicated, I'm not the principal and as the safety representative, I'm unsure. The scholar will report to either the teacher or directly to the office who will inform a first aider who will conduct an assessment to determine the nature of the injuries." (Interview 1).

"Teacher/learner reports to the school office." (Interview 2).

"Learners report to their teachers or at the office. Teachers report to the principal office. Parents are informed after the learner has been assessed and stablised." (Interview 3).

"School office, first aider, and school principal/deputy head principal." (Interview 4).

"Head of first aid. More serious accidents: principal and GDE additional and parents." (Interview 5).

"District office, parents if learner involved, head office and spokesperson for a member of the executive council (MEC) when necessary. DOL where applicable." (Interview 6).

"As indicated in the previous question the learners report to their teacher or at the office." (Interview 7).

"Teachers report the injury to the admin office who reports it to the principal's office. Depend on how serious the incident or accident or injury is. At the school we follow the protocol. The teacher writes a report and submits it to the safety coordinator. If the injury is minor, he/she applies the first aid to the learner, and if the incident is an emergency we call the ambulance and the parents." (Interview 8).

"As indicated, the Med clinic/ambulance may be contacted depending on the severity of the incident. Once the learner has been assessed or transported for medical assistance. The parent(s) will be contacted. As educators we may not give medication, however, it can be given in an emergency with parental consent. If the leaner is too serious he/she is monitored in the sick room by the grade-head until the parent arrives." (Interview 9).

"Firstly, the teacher on duty is called and will inform the first aider on duty. Once the learner has been assessed and stabilised, the school principal's office is informed, who in turn will inform the parents. The Department of Education is informed of incidents as prescribed by the School Act." (Interview 10).

"It is reported to the educator. After evaluation and stabilisation of the learner by the first aider the school office will contact the parents. The SGB will later inform the GDE and DoH." (Interview 11).

"It is reported to the safety co-ordinator, school principal, parents and later to the district office." (Interview 12).

"To the principal who completes an accident report. A parent report is also attached. Parents are phoned and advised of the matter." (Interview 13).

"Learner reports to teachers, admin or support staff who report the incident to the principal/deputy head principal." (Interview 14).

19.   What process is followed when reporting these school accidents, incidents and injuries to the school office?

"The first aider reports to the office. The scholar will report to either the teacher or directly to the office who will inform a first aider who will conduct an assessment to determine the nature of the injuries." (Interview 1).

"Teacher/learner reports to the school office." (Interview 2).

"Learners report either to their teachers or directly to the office." (Interview 3).

"Teacher informs school office. Teacher/school office will inform principal." (Interview 4).

"Head of first aid and the school incident recording form is complete. The safety co-ordinator investigates the incident." (Interview 5).

"Office will inform the deputy head principle and responsible officials, e.g. safety and security officer, the teacher in charge of first aid." (Interview 6).

"Learners report either to their teachers or directly to the office and will be assessed by the teacher. If urgent medical attention is needed the office will call for an ambulance and inform the parents. The school district office will be informed when there are serious incidents." (Interview 7).

"The teacher writes a report and submits it to the safety coordinator. Then the safety coordinator submits the report to the principal." (Interview 8).

"The learner will firstly report the illness/incident to the educator who will assess and call the first aider. The incident is then reported to the office of the school principal and the parent is called. Once the incident has been confirmed and the learner is stablised the school office headed by the principal will inform the chair of SGB who in turn will draft a report and distributes to SGB members. If the incident is of a serious nature the school district will be informed." (Interview 9).

"Directly after the assessment of the learner, the first aider will forward a WhatsApp on the selected school group. The school district office and the Department of Education is informed of the incident as prescribed by the School Act." (Interview 10).

"The learner will first report to the educator or school office who in turn will contact the first aider. Detailed information concerning the identity of and injury to the person involved as well as the circumstances that lead to the injury will be communicated to the relevant persons and authorities." (Interview 11).

"The teacher writes a report and submit it to the Safety Coordinator. Then the Safety Coordinator submits the report to the principle." (Interview 12).

"There is a different procedure for learners and staff. Staff needs to complete forms to be given workman's compensation. The SOP by the Department is followed." (Interview 13).

"No formal process. Teachers, administrastive or support staff report the incident to the principal/deputy head principal." (Interview 14).

20.   What process is followed when reporting these school incidents, accidents, and injuries to the school principal?

"Once the scholar is stabilised, the first aider will report to the school office, who in turn reports to principal." (Interview 1).

"The learner will report to the teacher or directly to the school office. If the learner cannot report themself a friend will alert the teacher or office. The school office will inform the parents. Either the teacher or school office will report to the school principal if needed." (Interview 2).

"Teachers report injuries to the school administration office who reports to the principal. After the incident the teacher writes a report on the incident and submits it to the safety person." (Interview 3).

"Teacher and/or school office informs principal. The principal will note the incident in the school register. May inform SGB if needed." (Interview 4).

"Safety co-ordinator reports to school principal." (Interview 5).

"School principal will inform and direct response to appropriate staff members. Will initiate incident report." (Interview 6).

"Teachers will report the injuries to the school administration office who reports to the principal. The school district office will be informed when there are serious incidents." (Interview 7).

"After receiving the reports from the safety coordinator, he/she reports to the parents through (letter/phone) and send to the districts." (Interview 8).

"Once the educator and/or first aider has assessed and stabilised the learner the incident is then reported to the office of the school principal and the parent is called." (Interview 9).

"Directly after the assessment of the learner the first aider will forward a WhatsApp on the selected school group." (Interview 10).

"Once the learner has been assessed and stabilised the school office or chairman of the health and safety will inform the headmaster and follow it up with a written report of the incident/accident. Such incidents/accidents will be recorded in the school's incident-accident register." (Interview 11).

"After receiving the reports from the safety co-ordinator he/she reports to the parents through (letter/phone) and sends to the districts." (Interview 12).

"I refer to the first aider in charge (usually a trained educator) and will then follow SOP for learner, educator/staff." (Interview 13).

"Teachers report injuries to school administration office who will report to the principal." (Interview 14).

21.   What process is followed when reporting these school incidents, accidents, and injuries to the school district/Department of Education?

"As indicated, I'm not the principal. As the safety representative, I do not work with that, so I'm unsure." (Interview 1).

"These are rarely reported, so I'm not sure." (Interview 2).

"Reported through the administration office where relevant/required." (Interview 3).

"Don't know, don't think any have been reported." (Interview 4).

"If applicable, the principal reports." (Interview 5).

"Report to the Institutional Development and Support Official (IDSO) and relevant officials. Send preliminary report and final report to relevant officials." (Interview 6).

"Reported through the administration office. The school district office will be informed when there are serious incidents." (Interview 7).

"Principal reports the incident to the district office when the case is serious, for example sexual abuse, drug abuse, or serious injuries." (Interview 8).

"Only serious incidents are reported to the school district manager or the district manager may be copied in for advice. They are reported as needed to the Department of Education by the chairperson/district manager." (Interview 9).

"The school district office and the Department of Education are informed of major incidents only." (Interview 10).

"The headmaster will telephonically inform the school district office and this will be followed up through a written report on the school district of the incident/accident." (Interview 11).

"The school principal reports the incident to the district office when the case is serious such as sexual abuse, serious injuries, and drug abuse." (Interview 12).

"Principal informs the Designated School Official (DSO) and the head of the district and takes future direction from them if required." (Interview 13).

"Not sure if they are reported." (Interview 14).

22. What process is followed when reporting these school accidents, incidents and injuries to the Department of Labour (DoL)?

"Unsure, don't think anything is reported." (Interview 1).

"These are rarely reported, so I'm not sure." (Interview 2).

"Not applicable." (Interview 3).

"Don't know, don't think any have been reported." (Interview 4).

*"Unknown." (*Interview 5).

"Injuries on duty (IOD) and other documentation controlled and sent by the principal's secretary." (Interview 6).

"Not sure if any have been reported." (Interview 7).

"Not sure about the process to the Department of Labour." (Interview 8).

"Not reported." (Interview 9).

"None have been reported." (Interview 10).

"The headmaster will telephonically inform the DoL office and this will be followed up by means of a written report to the school district of the incident/accident if it is pertaining to an employee." (Interview 11).

"Not sure about this process." (Interview 12).

"Workman's compensation is handled by education in consolidation with the emergency room at the hospital." (Interview 13).

"Not sure it is reported." (Interview 14).

23.   How many first aiders are appointed within the school, and what is their level of training?

Interviewee response	Legal calculation	Compliance
	The legislative prescript ratio of one health and safety representative to 100 employees (1:100) will be used in this section and is calculated as follows:	Partial compliance Non-compliance
Interview 1		
"Approximately 15 appointed first aiders."	1 700 learners + 125 educators = 1 825 persons. 1 825 / 100 = 18.25 This equates to the appointment of 18 first aiders.	Partial compliance
Interview 2		
"Two to four first aiders (learners appointed). They have received training however I'm unsure of who gave training or the level of training."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six first aiders.	Partial compliance
Interview 3		
"None."	>500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of at least five first aiders.	Non-compliance

Interview 4		
"Five to seven appointed first aiders."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six first aiders.	Compliance
Interview 5		
"One level 2 first aider as the Head with 10 different teachers appointed annually. They receive basic first aid."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six first aiders.	Compliance
Interview 6		
"Fifteen with at at least 10 are level 3."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to appointment of 5-6 first aiders.	Compliance
Interview 7		
"More than 10 appointed first aiders."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to appointment of 5-6 first aiders.	Compliance

Interview 8		
"None."	500 learners + 30 educators = 530 persons. 530 / 100 = 3.5 This equates to appointment of three to four first aiders.	Non-compliance
Interview 9		
"One first aider on level 3. Two other members also on level 3 as stand-in. 55 staff members trained (level 1) first aid. Annual reskilling in terms of first aid."	1 142 learners + 88 educators = 1 230 persons. 1 230 / 100 = 12.3 This equates to the appointment of twelve to thirteen first aiders.	Compliance
Interview 10		
"About 23 appointed first aiders on level 1-3."	1 950 learners + 140 educators + 19 workers = 2 109 persons. 2 109 / 100 = 21.09 This equates to the appointment of 21 first aiders.	Compliance
Interview 11		
"Thirty first aiders with training on level 1 to 3."	500 learners + >50 educators = >550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six first aiders with full legal compliance.	Compliance

Interview 12		
"One appointed."	500 learners + 30 educators = 530 persons. 530 / 100 = 3.5 This equates to the appointment of threee to four first aiders with non-compliance to legislation.	Non-compliance
Interview 13		
"Two appointed first aiders on level 3. Four to six learners with level 3. There is a team of learners who are in training."	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six first aiders with partial compliance to legislation.	Compliance
Interview 14		
"Unsure if any have been appointed."	500 learners + 30 educators = 530 persons. 550 / 100 = 3.5 This equates to the appointment of three to four first aiders with non-compliance to legislation.	Non-compliance

24. If no first aiders have been appointed, who manages these incidents, accidents, and injuries?

"Not applicable." (Interview 1).

"Not applicable." (Interview 2).

Health and safety person, teachers, and support staff." (Interview 3).

"Not applicable." (Interview 4).

"Not applicable." (Interview 5).

"Not applicable." (Interview 6).

"Not applicable. As previously indicated, these are managed by teachers, admin and support staff." (Interview 7).

"Health and safety coordinator with the help of the committee members." (Interview 8).

"Not applicable." (Interview 9).

"Not applicable." (Interview 10).

"Not applicable. As indicated, 30 appointed first aiders at the school with training at level 1 to 3." (Interview 11).

"The health and safety co-ordinator with the help of the committee members." (Interview 12).

"If no one is available a senior educator or the principal is called back to school." (Interview 13).

"Unsure if any have been appointed." (Interview 14).

SECTION E: OCCUPATIONAL HEALTH AND SAFETY LEGISLATION: FACILITIES

25. Is the school currently experiencing any facility problems, such as structural problems with school buildings? If yes, please explain.

"An engineering assessment has been contacted as there were some wall cracks in the school buildings. The report indicated that these were no areas of concern." (Interview 1).

"Yes, there is some construction and maintenance taking place currently." (Interview 2).

"No, not enough classrooms for the number of learners." (Interview 3).

"As mentioned, cracks in the walls, broken tapes and loose stair railings." (Interview 4*).*

"No, not at this time." (Interview 5).

"We have roof trusses that have collapsed, and this was reported at the start of the year (2020). Still waiting for it to be repaired. The affected classes cannot be used." (Interview 6).

"No, not that I'm aware of." (Interview 7).

"Yes, classrooms are not enough, we have overcrowded classes. As a school we are still waiting for the mobile classrooms that we applied for." (Interview 8).

"No serious structural problems besides minor maintenance in terms of windows. As indicated after the Driehoek school incident, an appointed engineer conducted an inspection to determine any structural and civil safety aspects. Any risks identified are reported to the SGB and school regional committee." (Interview 9).

"Structural engineer assessment was conducted in 2019 after the Driehoek school incident. The structural aspects identified were repaired at the cost of R20 000.00. A maintenance checklist is used during inspections and any maintenance required conducted. Require a new Certificate of Completions (competence) and maintenance certificate. A copy of the engineer report was given to the researcher." (Interview 10).

"None, at this time." (Interview 11).

"Yes, classrooms are not enough." (Interview 12).

"Yes. The roof of the cross-walk students cross has collapsed. The roof trusses have broken due to water damage. A matter that was brought to the attention of the Department of Works in 2018. The collapsed roof was inspected in February 2020, and to date, nothing has been done except vacating the room till repaired. The building belongs to the government, so they are responsible for the logistics." (Interview 13).

"No, the school is still new." (Interview 14).

26.   Does the school currently make use of any temporary buildings? If yes, please indicate the type of temporary buildings being used and the purpose of use?

"Yes, there are plus-minus 16 temporary classrooms. Some of these classrooms have old asbestos panels that are of a poor to average state. The newer classrooms are comprised of chromo-deck with double layer insulation." (Interview 1).

"No, brick and stone buildings only." (Interview 2).

"No." (Interview 2).

*"Yes, prefab classrooms." (*Interview 4).

"No." (Interview 5).

"No." (Interview 6).

"No." (Interview 7).

"No." (Interview 8).

"No." (Interview 9).

"Yes, we use some prefab buildings as classrooms. According to my knowledge, these are not asbestos structures." (Interview 10).

"None." (Interview 11).

"No." (Interview 12).

"No." (Interview 13).

"No." (Interview 14).

27.   Are you aware of any asbestos school structure, building/equipment on the school premises? Please explain where these structures/equipment are used and the condition of the structures/equipment?

"Yes, temporary classrooms with the old asbestos panels (± 1-2 panels per classroom) have been reported as damaged and the school is awaiting feedback from the school district and GDE." (Interview 1).

"Not aware of any." (Interview 2).

"Not aware of any, wendy house (old) is used to store old furniture." (Interview 3).

"Yes, prefab classrooms (asbestos unknown)." (Interview 4).

"No asbestos school structures." (Interview 5).

"*No.*" (Interview 6).

"*No.*" (Interview 7).

"Wooden building (wendy house). Structure is very old and we use it to keep old broken furniture and is not safe." (Interview 8).

"*No.*" (Interview 9).

"We use prefab building for classrooms and according to my knowledge these are not asbestos. This has been confirmed by the Department of Education." (Interview 10).

"*None.*" (Interview 11).

"Wooden building we use it to keep our old broken furniture." (Interview 12).

"*None.*" (Interview 13).

"Not that I'm aware of. The school is new, so don't think there is asbestos." (Interview 14).

SECTION F: OCCUPATIONAL HEALTH AND SAFETY (H&S) LEGISLATION. FIRE SAFETY AND FIRE EQUIPMENT

28.   Does the school have appointed fire representatives on the school premise? If yes, please indicate who these appointed fire representatives are.

"Yes, 12 educators are appointed and also manages the fire equipment in terms of annual servicing." (Interview 1).

"Yes, about four to six teachers have been appointed. Fire drills are conducted bi-monthly. On the date of the Interview fire equipment was last serviced on 7/2/2019." (Interview 2).

"Yes, teachers and support staff are appointed." (Interview 3).

"None appointed." (Interview 4).

"Not at this stage. We are in process of training 10 fire representatives. We service fire extinguishers annually and use Mercfire to do this." (Interview 5).

"Yes, three appointed." (Interview 6).

"*Yes, four to five teachers and support staff are appointed to manage this function together with support staff and groundsmen."* (Interview 7).

"None." (Interview 8).

"Yes, teachers and support staff are appointed to manage this function together with support staff and groundsmen. The discipline head is responsible for the safety and security in the school as well as manages the fire representative, fire plan and equipment. Fire equipment is inspected annually, which was last done in July 2019 by a qualified body in the firefighting industry. They also sign off fire equipment." (Interview 9).

"The school makes use of Academy fire systems related to its fire maintenance. On the date of the interview fire equipment was last serviced in April 2019. Additional fire equipment was procured on the recommendations of Academy fire systems. Fire inspections are conducted three times a year." (Interview 10).

"The fire representative is the estate manager – level of training is unknown (and he has unfortunately passed away recently). So naturally, it would be the estate manager and while awaiting the appointment of a new estate manager the principal fulfils this role." (Interview 11).

"None." (Interview 12).

"Yes, one educator and 10 learners. Have been unable to source reasonable priced service providers for correct training. Local fire department unable to assist." (Interview 13).

"None that I'm aware of." (Interview 14).

29.   How many fire representatives have been appointed?

Interviewee response	Legal calculation	Compliance
	The legislative prescript ratio of one health and safety representative to 100 employees (1:100) will be used in this section and is calculated as follows:	**Partial compliance** **Non-compliance**
Interview 1		
"Yes, 12 educators are appointed and also manage the fire equipment in terms of annual servicing."	1 700 learners + 125 educators = 1 825 persons. 1 825 / 100 = 18.25 This equates to the appointment of 18 fire representatives.	Partial compliance
Interview 2		
"*Yes, about four to six teachers have been appointed. Fire drills are conducted bi-monthly. On the date of the Interview fire equipment was last service on 7/2/2019."*	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives.	Compliance
Interview 3		
"*Yes, teachers and support staff are appointed."*	>500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of at least five fire representatives.	Non-compliance

Interview 4		
"*None appointed.*"	>500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of five to six fire representatives.	Non-compliance
Interview 5		
"*Not at this stage. We are in process of training 10 fire representatives. We service fire extinguishers annually and use Mercfire to do this.*"	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives. As indicated, the school is in the process of appointing 10 fire representatives. Once appointed the school will have achieved legal compliance.	Complaint when all fire representatives have been appointed
Interview 6		
"*Yes, three appointed.*"	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives.	Compliance
Interview 7		
"*Yes, four to five teachers and support staff are appointed to manage this function togther with support staff and grounds men.*"	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives.	Compliance

Interview 8		
"*None.*"	500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of five to six fire representatives.	Non-compliance
Interview 9		
"*Yes, teachers and support staff are appointed to manage this function together with support staff and groundsmen. The discipline head is responsible for the safety and security in the school as well as manages the fire representative, fire plan and equipment. Fire equipment is inspected annually, which was last done in July 2019 by a qualified body in the firefighting industry. They also sign off fire equipment.*"	1 142 learners + 88 educators = 1 230 persons. 1 230 / 100 = 12.3 This equates to the appointment of twelve to thirteen fire representatives.	Partial compliance
Interview 10		
"*The school makes use of Academy fire systems related to its fire maintenance. On the date of the Interview, fire equipment was last servicein April 2019. Additional fire equipment was procured on the recommendations of Academy fire systems. Fire inspections are conducted three times a year.*"	1 950 learners + 140 educators + 19 workers = 2 109 persons. 2 109 / 100 = 21.09 This equates to the appointment of twenty to twenty-one fire representatives.	Non-compliance, as an external fire company is used with no appointed fire representatives on the school premises.

Interview 11		
"*As indicated in the previous question the fire representative is the estate manager, who has recently passed away. While awaiting the appointment of a new estate manager, the principal fulfils this role.*"	500 learners + >50 educators = >550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives.	Partial compliance
Interview 12		
"*None.*"	500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of five to six fire represetatives.	Non-compliance
Interview 13		
"*Yes, one educator and 10 learners. Have been unable to source reasonable priced service providers for correct training. Local fire department unable to assist.*"	500 learners + 50 educators = 550 persons. 550 / 100 = 5.5 This equates to the appointment of five to six fire representatives.	Compliance
Interview 14		
"*None that I'm aware of.*"	500 learners + 30 educators = 530 persons. 530 / 100 = 5.3 This equates to the appointment of five to six fire representatives.	Non-compliance

SECTION G: OCCUPATIONAL HEALTH AND SAFETY: CONCERNS AND COMMENTS

30.   Please state any safety concerns not mentioned in this interview guide/general comments

"Feels not educators' duties to manage school safety. Someone must be appointed who is qualified to manage school safety. Feels responsibility is too much for educators – need a qualified and competent safety advisor." (Interview 1)*.*

"School noise level is somewhat noisy during school hall and break periods." (Interview 2)*.*

"As we are experiencing this pandemic Covid-19 for the safety of learners and staff, the school needs more people for screening and sanitising. Safety of learners using public transport is a problem during this pandemic." (Interview 3)*.*

"Equipment is often left unattended such as garden cutting equipment and chainsaws and scholar will be scholars. Lack of maintenance related to low tree branches, uneven paving and stairs." (Interview 4)*.*

"None." (Interview 5)*.*

"As a school we have met with our security providers to determine specific responses to very specific situations. In case of armed intruders' response is planned to avoid a shoot-out on the school premises during contact time with learners. A different response after hours. We have also planned very specific evacuation details for different scenarios." (Interview 6)*.*

"Safety of learners using public transport." (Interview 7)*.*

"As we are experiencing this pandemic Covid-19 for the safety of learners and staff, the school needs more people for screening and sanitising. The health inspectors should always visit the school regularly." (Interview 8)*.*

"Community impact on general safety at school in terms of break ins and theft. Many learners that are not cared for at home in terms of poverty and may have concentration problems as we are not aware of what safety is." (Interview 9)*.*

"Even though we have gate security school access regarding any person entering school premises is a concern as anyone could gain access (legal/otherwise). Sport event is a concern as the school premises is open to everyone, meaning anyone can enter the school premises regardless as to if they are part of the school cluster/group." (Interview 10).

"None." (Interview 11).

"For the safety of learners and staff, the school needs more people for the screening and sanitising during Covid 19." (Interview 12).

"There is not enough understanding of OHS in the school – we have been led to believe that SASA safety in school is the overriding authority." (Interview 13).

"No." (Interview 14).

31.   Are there aspects related to school safety you would like to bring to the attention of the Gauteng Department of Education (GDE)?

"As already indicated, safety is not the duty of the educator and a qualified person should be appointed to manage school safety, as this is too much for us to manage." (Interview 1).

"None." (Interview 2).

"The school needs more security to help with screening during Coivd-19." (Interview 3).

"School access by service providers, learners and parents are risky and unsafe. Safety in municipal parking area for users and learners who is responsible and who reports these incidents." "Staff on duty outside of school parameters who are held liable for injury on duty." (Interview 4).

"No." (Interview 5).

"None." (Interview 6).

"None that I'm aware of." (Interview 7).

"They should provide the school with more securities." (Interview 8).

"Schools need to become more vigilant in terms of safety and health. Many schools don't have systems in place in support of health and safety – ultimately learners are put at risk. School needs to act preventatively (collectively). Perhaps a consideration would be to include safety training for learners in their final phase of school." (Interview 9).

"I think formal health and safety training by an accredited contractor with certificatation for all teachers and managers is important. This training is just as important for learners prior to leaving school. If it forms part of the curriculum for senior learners that will give them an advantage when entering the working arena." (Interview 10)*.*

"Greater guidance and training should be offered to schools with regard to the training of H&S representatives. Consideration should be given to include safety training for learners in the final phase of school. With the increase in violence and protesting in the school communities, the GDE should assist with financial resources that will allow schools to adequately secure school infrastructure and as well as staff and learners if affected by such incidents." (Interview 11)*.*

"We need more school security." (Interview 12)*.*

"Lack of training and formal definition of OHS and SASA." (Interview 13)*.*

"No." (Interview 14)*.*

32. This concludes the interview. Do you have any final remarks or questions for me to consider?

"Need a qualified and competent safety advisor." (Interview 1)*.*

"None." (Interview 2)*.*

"This research can help the health and safety of the Department of Eduction. I'm happy to be part of the interview, thank you." (Interview 3)*.*

"None." (Interview 4)*.*

"No." (Interview 5)*.*

"None." (Interview 6)*.*

*"None." (*Interview 7).

"I think this research will help the Department of basic Education. I'm also happy to be part of the interview. Thanks." (Interview 8).

*"None." (*Interview 9)*.*

*"None." (*Interview 10)*.*

"The GDE should play a greater oversight role in ensuring that schools comply with all acts pertaining to health and safety protocols." (Interview 11)*.*

"I think this research can help the Department of Education regarding H&S. I'm happy to be part of the study. Thanks." (Interview 12)*.*

"A lot of emphasis is placed 'reasonable man test', however, very little is known about it." (Interview 13)*.*

"No." (Interview 14)*.*

ANNEXURE G:
LANGUAGE EDITING CERTIFICATE

Retha Burger   tel: 012 807 3864   fax: 012 807 3864
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Independent Skills Development Facilitator

Dear Ms Rielander

This letter is to record that I have completed a language edit of your thesis entitled, "EXPLORING SCHOOL SAFETY IN PUBLIC SECONDARY SCHOOLS IN THE GAUTENG PROVINCE".

The edit that I carried out included the following:

-Spelling   -Grammar
-Vocabulary   -Punctuation
-Pronoun matches   -Word usage
-Sentence structure   -Correct acronyms (matching your supplied list)
-Captions and labels for figures and tables
-Spot checking of 10 references

The edit that I carried out excluded the following:

-Content
-Correctness or truth of information (unless obvious)
-Correctness/spelling of specific technical terms and words (unless obvious)
-Correctness/spelling of unfamiliar names and proper nouns (unless obvious)
-Correctness of specific formulae or symbols, or illustrations

Yours sincerely

Retha Burger

29 August 2022