THE INSTRUCTIONAL LEADERSHIP ROLE OF THE PRINCIPAL IN INDEPENDENT SCHOOLS: TOWARDS 21ST CENTURY CLASSROOMS

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I dedicate this study to my children Jenna and David Pyle

DECLARATION

DECLARATION:

I the undersigned hereby declare that:

THE INSTRUCTIONAL LEADERSHIP ROLE OF THE PRINCIPAL IN INDEPENDENT SCHOOLS: TOWARDS 21ST CENTURY CLASSROOMS IN GAUTENG NAMELY, JOHANNESBURG EAST

is my own original work and that I have all the sources that I have used or quoted have been indicated and acknowledged by means of complete references. I have not previously in its entirety or in part submitted it as any university for a degree.

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ABSTRACT

Students no longer respond to content-driven, teacher-centred learning. Literature reveals that changes in methodology and pedagogy of teachers needs to take place in order to keep education relevant and engaging. Classrooms where critical thinking, communication, creativity and collaboration are embraced are required in schools. The environment where these components are present can be referred to as 21st century classrooms. Establishing these locales require a leader who is able to create the vision for the changes that need to take place. One who will fashion a learning environment where teachers feel secure and have the confidence through teacher development to embark on and embrace a new arrangement in their classroom. The principal needs to embrace his/her instructional role in establishing these 21st century classrooms. This research project investigated precisely what the instructional role of the principal necessitates in aiding teachers to establish 21st century classrooms.

A qualitative research design, embedded in the constructivist paradigm in the form of a hermeneutic study was chosen as research method. Using semi-structured interviews, the researcher attempted to find out how the principal of each school visited, viewed 21st century classrooms, as well as what skills and knowledge he/she required as the instructional leader in leading teachers to establish 21st century classrooms. The researcher used purposeful sampling to select the participants who would have the greatest insight into establishing 21st century classrooms at their school. Trustworthiness was ensured in the collection and interpretation of data. The researcher transcribed the collected data and it was later analysed. Once analysed, the data was interpreted and arranged under the research sub-questions.

The findings established that each participant is quite knowledgeable concerning the attributes and characteristics of a 21st century classroom. Many of the principals played a strong instructional role in their school and displayed many of the characteristics and skills necessary to create an environment where teachers could competently bring 21st century skills and knowledge into their classrooms. In most of the schools visited, 21st century classrooms are well on their way to being

established. It is evident that the theory of 21st century classrooms is far more prevalent in some of the schools visited than the practical application thereof. In some of the schools visited a whole philosophy of learning, which encases all the 21st century attributes has been implemented. Each school could be placed on a continuum, with no one school being at the same space in their journey to implement 21st century skills and knowledge into their teachers' pedagogy.

Key terms: 21st century classrooms; Instructional leadership; Independent schools; Student-centred learning; Individualised instruction; Collaborative learning; Change leadership; Technology as a learning tool; Critical thinking environments; Project based curriculum; Role of the teacher

ABSTRAK

Leerders reageer nie meer op inhoudgedrewe en/of onderwysgesentreerde onderrig nie. Literatuur toon dat veranderinge in onderwysmetodiek en pedagogie moet plaasvind ten einde onderwys relevant en interessant te hou. Klaskamers waarin kritiese denke, kommunikasie, kreatiwiteit en samewerking omhels word, is die nuwe maatstaf. Die omgewing waarin hierdie komponente teenwoordig is, word na verwys as die 21ste eeu klaskamers. Die stigting van 21ste eeu klaskamers vereis 'n leier wat in staat is om 'n visie te skep en dit na te volg. Een wat 'n leeromgewing verseker waarin onderwysers veilig voel en selfvertroue opbou deur personeelontwikkeling. Sodoende word onderwysers bemagtig om die nuwe veranderinge in die klaskamer te omhels. Die skoolhoof speel 'n sterk rol in die vestiging van hierdie 21ste eeu klaskamers en moet dus 'n instruktiewe rol aanneem. Hierdie navorsingsprojek ondersoek wat presies hierdie instruktiewe rol van die skoolhoof behels in die ondersteuning van onderwysers om hul toe te rus vir 21ste eeu klaskamers.

Hierdie navorsingsprojek is gebaseer op 'n kwalitatiewe navorsingsontwerp, gegrond op die konstruktivistiese paradigma in die vorm van 'n fenomenologiese studie. Deur gebruik te maak van semi-gestruktureerde onderhoude, het die navorser gepoog om uit te vind hoe die skoolhoof van elke skool wat besoek is, 21ste eeu klaskamers beskou en oor watter vaardighede en kennis 'n skoolhoof as onderrigleier moet beskik om onderwysers in 21ste eeu klaskamers te vestig. Die navorser het van 'n doelbewuste steekproef gebruik gemaak om geskikte kandidate te identifiseer wat kennis dra oor die vestiging van 21ste eeu klaskamers by hul eie skole. Betroubaarheid van die data is verseker deur die versameling en interpretasie daarvan. Die data is deur die navorser getranskribeer en later ontleed. Na analise is die data geïnterpreteer en dan in geskikte navorsings sub-vrae ingedeel.

Die bevinding was dat elke kandidaat grondige kennis aangaande die eienskappe en kenmerke van 21ste eeu klaskamers het. Baie van die hoofde vervul 'n sterk instruktiewe rol in hul skool en beskik oor die nodige eienskappe en vaardighede om 'n omgewing te skep waarin onderwysers met bevoegdheid 21ste eeu vaardighede en kennis in hul klaskamers kan toepas. In meeste van die skole wat besoek is, is

21ste eeu klaskamers besig om pos te vat. Dit is ook duidelik dat die teorie van 21ste eeu klaskamers baie meer op die voorgrond is by sommige van die skole wat besoek is, as wat die praktiese toepassing daarvan is. In sommige van die skole wat besoek is, is 'n leerfilosofie wat alle 21ste eeu kenmerke omvat geïmplementeer. Daar is 'n kontinuum waarop elke skool geplaas kan word wat aandui dat nie een skool op dieselfde vlak in hul implementering van 21ste eeu vaardighede en kennis in hul onderwyspedagogie is nie.

Sleutelterme: 21ste eeu klaskamers; Instruktiewe rol; Studentgesentreerde leer; Individuele opdrag; Samewerkende leer; Verandering leierskap; Tegnologie as 'n hulpmiddel; Kritiese denke omgewings; Projek kurrikulum; Die rol van die onderwyser

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LIST OF ABBREVIATIONS

CAQDAS: Computer-aided qualitative data analysis software

IBL: Inquiry Based Learning

ICT: Information and Communication Technology

IDH: In-Depth-Interviews

ISASA: Independent schools Association of South Africa

ISTE: The International Society for Technology in Education

NETS: International Society for Technology Standards for Administrators

NCREL: North Central Regional Education Laboratory

NCS: The National Curriculum Statement

P21: The Partnerships for 21st century skills

PBL: Project based learning

REC: Unisa Ethics Committee

SASA: South African Schools Act

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CHAPTER 1

ORIENTATION TO THE STUDY

We have a powerful potential in our youth, and we must have the courage to change old ideas and practices so that we may direct their power towards good ends (Dr Mary McLeod Bethune).

1.1   INTRODUCTION AND BACKGROUND TO THE STUDY

In these uncertain economic times, there should be a concern in South Africa as to whether we are establishing schools that will provide the foundation needed for students to achieve success at university, other tertiary institutions and as part of the work force. *"The reality is that students must develop a complex skill set that prepares them for both the rigor of college and the demands of the workplace"* (Greenstein, 2012: 37). As the economy changes, requiring new skills and abilities, our education systems need to adjust in order to prepare our young citizens to meet these new challenges (Light, Manso & Noguera, 2009). The students we produce are not prepared for the future that awaits them. Currently, we are still trapped in an age where rote and teacher-centred learning is taking place. The change that we seek in our classrooms must begin with the principal, through his role as the instructional leader; change will start with him and filter down to the classroom.

Education institutions face challenges that indicate an immediate need for change to take place to adapt to the society South Africans live in, both for economic and social reasons (Bezzina, 2000; Christen, 2009; Degenhardt, 2008). As the growing need for school-improvement takes place, so the preoccupation with educational reform increases. Aligning the internal structures with goals is vital in making the required changes. Strengthening the management and leadership skills and capacities will empower and enable teachers to provide students with an improved and higher quality learning environment, where the opportunity to achieve an advanced understanding of the curriculum occurs (Marishane & Botha, 2011).

The practices and principals currently being used in South African schools do not align with the existing 21st century time-period. For the sake of the students, schools need to be reconstructed into places that reflect the growing needs of the society in which they find themselves in (Shaw, 2008). Schools, like any other organisations, face the challenge of being relevant to the people they are meant to serve.

The new millennium was accompanied by a histrionic technological revolution. According to Shaw (2008: 2), *"we now live in an increasingly diverse, globalised and complex, media-saturated society"*. This technological revolution will have a great impact on society; today's preschool students will enter a very different world to the one we presently live in. We need to be preparing all students for this very different world, a world where they will face emerging problems such as global warming, famine, poverty and health concerns (Shaw, 2008). Partnership for 21st century skills (2008: 1) explains:

> *Our ability to compete as a nation – and for states, regions and communities to attract growth industries and create jobs – demands a fresh approach to public education. We need to recognise that a 21st century education is the bedrock of competitiveness – the engine, not simply an input, of the economy.*

Globalisation offers the chance of an increase in economic growth, as market-openness to outside trade becomes more apparent. Therefore, to meet the increasing economic and social demands of globalisation, educational institutions need to change what they are doing (Light et al., 2009). In order to take advantage of the opportunities that globalisation presents, competiveness needs to be increased by preparing the future generations for the new skills and abilities that will be required of them (Stiglitz, 2002). Greater effort needs to be made by educational institutions in these beginning years of the 21st century, to achieve superior levels of competitiveness (Kozma, 2005; Little, 2013). "*Life in the 21st century provides unique challenges to educators as we seek to prepare our students to compete in an ever-expanding global marketplace*" (Gasser, 2011: 108).

The 21st century has introduced challenges not present in the 20th century. The need for collaboration has reached new levels of intensity. Collaboration now needs to take place with peers halfway across the world. The ability to filter large amounts of information, taking out what is needed, has become paramount. The nature and approach to problem solving has changed dramatically. Problems are no longer abstract, removed from their application to knowledge. There is a need to develop proficient decision-making and metacognitive strategies when no standard approach can be found. Making room in an already crowded curriculum for students to master core 21st century is of paramount importance (Dede, 2009). Meeting the challenges of the 21st century and being prepared for the opportunities presented, is dependent on the how well equipped the younger members of society are. Being equipped is largely dependent on the education and instruction the younger people in society receive (Larson & Miller, 2011; Miller, 2009).

In schools, the principal is the main change facilitator. He or she is responsible for the school climate and needs to encourage the teachers and other stakeholders to take responsibility for their success in the school environment (Jazzar & Algozzine, 2007). The extent of the success of the changes made to improve the learning experiences of students is highly dependent on the nature of the leadership practices (Marishane & Botha, 2011).

According to the research literature on what the principal should know about leading schools in the 21st century, as leader of the school he/she must have knowledge of the required 21st century skills, competencies and practices. They need these skills, competencies and practices to lead teachers in creating 21st century classrooms of instruction and learning (cf. Maurer & Davidson, 1998; Hughes & McLeod, 2005; McLeod & Lehmann, 2012). Twenty-first century classrooms have a particular arrangement where certain pedagogical practices are present. These practices include, but are not restricted to, allowing co-operative learning, the use of Information and Communication Technology, and letting the students share in the decision-making process, as equal rights for all stakeholders in the learning environment takes place.

Making the changes towards 21st century instruction means moving towards the core standards identified by `Partnerships for 21st Century Skills', and in the South African context, The National Curriculum Statement (NCS): Grades R-12, which are at the vanguard of educational literature (Wilson, 2006; Greenstein, 2012; Long, 2012; Sheninger & Larkin, 2012). The NCS aims to produce students that use critical thinking in order to solve problems and make decisions. These students take responsibility for their learning and are able to work as members of a team. The ability to use science and technology effectively and critically, showing responsibility towards the environment and the health of others, is identified in the NCS (du Plessis, 2013).

Teachers today need to be equipped with 21st century skills and knowledge and learn how to integrate them into their classroom practice. This is not a matter of teaching either academic or 21st century knowledge and skills but rather integrating the two so that our students meet the demands of a global economy (Robinson, 2010). In order to provide learners with the skills and knowledge they need to take their place in the globalised economy, teachers in 21st century schools need to be informed as to what a 21st century classroom entails and what changes in instruction need to take place.

One crucial component of the 21st century classroom is the introduction and use of Information and Communication Technology (ICT). Principals need to make this imperative facet of 21st century teaching an important part of what he/she highlights as instrumental, as they get involved in the curriculum and teaching pedagogy in their role as instructional leader. The degree to which the principal is able to understand ICT and to lead teachers in implementing this vital component is an important part of this study. Light et al. (2009: 89) emphasise the importance of ICT in 21st century classrooms as follows:

> *Around the globe, ministries of education are using Information and Communication Technology (ICT) to strengthen the foundations of the 21-century education systems they are building. The education policies in countries such as Australia, China, Finland, Ireland, Singapore, South Korea*

and the United Kingdom are based on strong relationships between the use of new forms of ICT and the development of capacities such as reasoning, knowledge creation, problem-solving , and creativity.

The serious nature of the need for change provides us with the incentive to find out what principals know about 21st century skills and what they need to do in order to lead teachers in such a critical period of change (Arrington, 2014). Pedagogy used in educational institutions needs to be based on the latest research findings, which will help to make the necessary crucial changes. Combining 21st century skills together with the use of technology in the classroom is the way forward. These 21st century skills have been pinpointed as the way in which educational institutions can prepare students for the future, at university and society in general. In order to advance in following these skills, a study such as this is vital; we need to be informed of what we need to do in order to implement the changes required.

1.2   RATIONALE FOR THE STUDY

A large amount of information is available to students, which changes the way in which they learn and interact in a social setting (Arrington, 2015). The manner in which students learn in this technological era is very different to the way in which learning took place in the Industrial Age, before technology introduced us to a new period of rapid access to knowledge. Learning is no longer the formal activity it once was, but continues throughout the school day across the formal divide into the social interactions in which students are involved (McLeod & Lehmann, 2012). Dowell (2004) explains how schools have not made the transition needed to keep up with the dynamic movements of 21st century instruction. As referred to in the following quote, schools as institutions of learning must move from delivering static learning experiences to places where dynamic and responsive teaching and learning takes place.

With a few wonderful exceptions, schooling has not responded to the changes from the Industrial Age to the Information Age. In fact, there are still remnants of the Agrarian Age apparent in the system. The context of the new

century demands radical changes in the deep structure of what schooling is and should be. It will not be productive, however, to replace a static system, with a static new system (Dowell, 2004: 97).

The principal needs to create an environment where there is a common vision of purpose. The principal as leader needs to create an organisation where all stakeholders, especially teachers, share his/her vision. Helping teachers to understand how the students of today learn, how each individual has a learning style that needs to be considered and catered for, is part of that vision. As his role as instructional leader the principal needs to prioritise and model the skills that he would like his/her teachers to acquire; the skills and understanding necessary in order to lead their students in student-led and teacher-facilitated learning (Christen, 2009; Maurer & Davidson, 1998; Shear et al., 2011).

If teachers repetitively use the same outdated methods with the same unsatisfactory outcome, ineffective teaching will take place. Being informed of the current practices in the sphere of educational pedagogy is of paramount importance. As the students' needs and style of learning changes, so the way in which things are done needs to change. It is the principal's job to bring in the new and replace the outdated and unsuccessful practices. The principal is the prime change facilitator who needs to implement replacement methods for the archaic and unacceptable practices that continue to be present in our places of learning (Jazzar & Algozzine, 2007). Forging new methods can be exciting. Using problem-based learning as well as computer-based instruction is at the forefront of 21st century instruction and pedagogy. According to Savery (2006: 12), *"Problem-based learning is an instructional (and curricular) learner-centred approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem".* This problem-based learning is just one example of the change that needs to take place in order to place our educational institutions at the centre of what is taking place in 21st century education.

One component of ensuring classrooms move in the direction of 21st century education is to establish democratic classrooms. Democracy in the context of the classroom means that each student present has an equal right to make decisions related to their learning experiences. This democracy will allow the students to construct their own knowledge, by building on their previous knowledge, by slowly adding to what they know, until they have a full understanding of what they are learning. Classrooms where teachers give their students freedom by allowing more self-directed and independent learning to take place are known as democratic classrooms. Student-based outcomes need to become the goal, with the focus on what the student's goals are and not on what the teacher's outcome is (Maurer & Davidson, 1998; Skurat Harris, 2009).

Teacher training up to this time has not included the skills and knowledge necessary for teachers to include 21st century skills in their daily teaching practices. Today's teachers do not have the experience or knowledge to focus on 21st century skills, which include assimilating the culture of learning or socialising and technology (Arrington, 2014). There has not previously been student-based learning, as well as the focus on learner participation as seen in the democratic classroom (Capuano & Knoderer, 2006). Technology is the medium in which most students access information at an alarming rate, yet research has shown that this technology is not available in the classroom (Beglau et al., 2011). Christin (2009: 29) explains the need to understand how our students have changed as such:

> *Sitting quietly and taking lecture notes does not come naturally to a student population accustomed to a virtual world of instant messaging, pervasive Internet access and online social networking. If these connected students are to excel in education, their learning environment should mirror the ways in which they engage the world.*

The group of students that are present in classrooms have become accustomed to a very different world than the one most teachers grew up in. One in which connecting with their classmates and other individuals is done in a completely different manner altogether. Keeping up with the new ways of communicating and relating to students

requires a new way of conducting teaching and learning. Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments (ISTE Standards for teachers). These new practices are not always understood by the teachers that are currently in the classrooms of schools around South Africa.

There seems to be a discrepancy at present between what we know 21st century instruction and classroom structures to be and what is taking place in the classroom. This is known as the so- called 'Knowing-Doing gap'. This discrepancy occurs when important aspects for the success of an organisation are identified but is not implemented (Huang, 2000; Pfeffer & Sutton, 2000; Barsi, 2001; Dumas, 2010). Teachers need a change agent to lead them in the direction of 21st century skills; they require a leader who will provide the knowledge, training and direction in order to narrow this discrepancy. Research indicated that the principal has the most influence over change and the direction that change will take. According to Fullan (2010), *"The key to the speed of quality change is embedded in the power of the principal helping to lead organisations and systems transformation".* Fullan is not alone in his deduction that the principal as change agent is instrumental. Studies in Ontario Canada (2008/2009) show the degree to which the principal takes part as a learner, helping teachers learn how to make changes, directly impacts on the success of that change.

The dramatic change in how and where people are accessing information signalled a rapid change in the pace of technological change. These changes have changed peoples work and social lives, which have held significant consequences for today's young people. These trends impelled some educators to realise that the traditional curriculum and teaching practices are no longer meeting the needs of the students in schools (Jerald, 2009). Twenty-first century skills came about due to the realisation of some educators that there is a need to change the emphasis of learning. The introduction of 21st century skills could only be identified during the onset of the 21st century. Many principals were not practitioners when 21st century skills were introduced. According to Flanagan and Jacobsen (2003: 124), *"school administrators*

are required to assume responsibility in areas with which they are unfamiliar, and for which they have received little training. Integration of technologies for teaching and learning has affected the traditional roles and responsibilities of the school principal.

What if principals have not learned the skills and knowledge involved in bringing 21st century skills into the classroom? This, according to Arrington (2014: 18), creates a gap between what principals need to know and what they do know, in order to lead their teachers into creating 21st century classrooms when stating:

> *If there is truly a knowing-doing gap for principals then training and accountability measures should be employed to reduce or eliminate the gap. If a knowing gap exists in the part of the principal and this is causing a bottle neck in providing the schools and teachers needed resources and the learners the most effective learning experiences, then those skills need to be identified and the deficiency addressed with all haste.*

Conducting a study such as this is imperative if change is to take place, not just change for change sake, but change based on empirical evidence, such as this study. At the forefront of the change will be the principal. Finding out what the principal knows regarding the 21st century skills is necessary as he/she will facilitate and lead the change that takes place. Establishing new classroom practices involving technology, student-centred learning as seen in democratic classrooms, and addressing the 'Knowing-Doing' gap are all vital in the move towards creating 21st century classrooms. The principal's role is pivotal in providing the vision and scaffolding needed for his or her teachers to embrace the change that need to take place with enthusiasm.

1.3   THE RESEARCH PROBLEM

The sections above now lead to the main problem statement of this study, which can be phrased as a research question: **What should the instructional leadership role of the principal be in independent schools in order to create 21st century classrooms?**

This main research question can now be divided into the following sub-questions:

- What is the concept of 21st century classrooms?
- Which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader need in order to lead teachers effectively?
- How can current classroom practices in independent schools be improved upon in order to be an effective 21st century classroom?
- What is the instructional leadership role of the principal in this process?

1.4   AIMS AND OBJECTIVES

The main objective of this study is to establish what the instructional leadership role of the principal should be in independent schools to create 21st century classrooms. The sub-aims of the study are:

- to describe and define the concept of 21st century classrooms (to be addressed in Chapter 2 as part of the literature study);
- to explain which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader need in order to lead teachers effectively (to be addressed in Chapter 2 as part of the literature study);
- to determine how the current classroom structure in independent schools can be improved upon in order to be an effective 21st century classroom (to be established by the empirical part of the study); and
- to discuss the instructional leadership role of the principal in this process (to be discussed as main outcome of this study).

1.5   PRELIMINARY LITERATURE REVIEW

The concept of so-called 21st century schools is inter alia, based on a project-based curriculum with one of its aims being to allow students to grapple with and address real world problems (Gasser, 2011). The opposite of this project-based curriculum is

the currently textbook-driven, teacher-centred model that exists in some South African schools. The NCS encourages an active and critical approach to learning, rather than rote and uncritical learning of given truths. The promotion of this principle is directly in support of the 21st century classroom that this study promotes. Twenty-first century learning encourages a new way of knowing and an innovative idea of what it means to be educated (Love, 2011; The National Curriculum Statement (NCS), 2011; Partnership for 21st Century Skills, 2008; Savery, 2006; Shaw, 2008).

In the 21st century classroom, students will be given the opportunity to demonstrate creative thinking and construct knowledge as they use digital media to communicate and collaborate, including at a distance, with others in problem-centred tasks. Students will work cooperatively with others on assignments designed around interdisciplinary themes. These students will gather, evaluate and use information as they plan and conduct research, manage projects, solve problems and make decisions using appropriate tools and resources. These students of the 21st century classroom will have a comprehensive understanding of technology concepts and operations. The effective and critical use of science and technology is one of the aims of the NCS. This aim is directly in line with the aim of this study in establishing 21st century classrooms (International Society for Technology Standards for Administrators (NETS), 2011; National Curriculum Statement, 2011).

In order to create the 21st century classroom envisaged by this study, the role of the teacher will need to undergo a vast transformation. From their primary role as "*dispenser of information*" (Shaw, 2008: 5) to "*orchestrator of learning*", the teacher will assist students in finding their own meaning in information, as he/she supports and guides them in their pursuit of wisdom. The 21st century will require teachers to help students generate their own knowledge and not only deliver the information to students. One of the main challenges will be to create a culture of IBL in the classroom. According to Behrenbruch (2012: xiv), *"UNESCO's 1996 report argued for changes to schooling that included holistic curriculum, problem-solving, using the potential of information technology, an emphasis on formative assessment and engaging students in constructing their own learning, all of which are supported through inquiry".*

This can only be done by a teacher who knows and understands that students need to be in control, and take ownership of their learning (Behrenbruch, 2012; Shaw, 2008). A resolute emphasis has to be placed on student engagement in genuine learning experiences supported by the use of technology (Schleicher, 2012). There is a shift from whole class teaching to small group instruction where co-operation and not competition is highlighted. The change in context is one from a didactic to a constructivist view of teaching. Learning is a more natural process and interactions between student and teacher seem to be more fluid. Gifted students are able to make deeper connections with the topic covered (Ertmer & Ottenbreit-Leftwich, 2010; Flanagan & Jacobsen, 2003).

The traditional role of schooling is to focus on subject matter and the passing on of knowledge to young students. Drill, memorisation of facts and the power of the teacher with formal instructional methods was part of this traditional role (Owens & Valesky, 2011). The 21st century school aims to help students see how their learning is relevant to the real world and how they will be better prepared for real life once they have completed their schooling. One of the core values of the 21st century school is instilling curiosity to propagate a desire for lifelong learning, meaning learners who are excited by learning, and will continue to do so long after the school day has finished (Schleicher, 2012; Shaw, 2008).

As instructional leader, the principal's primary focus will be on curriculum and instructional development. He/she needs to control, coordinate and supervise teaching, learning and qualitative assessment tasks. The principal, who allows his attention to be drawn to the control, coordination and supervision of all teaching and learning activities, inspires his or her teachers and learners to pursue high levels of achievement (Marishane & Botha, 2011). Marishane (2011: 29) explains, *"This should constitute the core of school leadership and give it a sense of purpose. It is what educational leadership is all about."*

As instructional leader, the principal will need a vision for the school that reflects the changing environment, a vision that is context-specific and is linked to what students learn, how they are taught and what they are expected to accomplish. This vision should then be communicated to the teachers who will then want to be part of the new learning necessary to facilitate the 21st century classroom.

The level to which the principal participates as a learner, in helping teachers figure out how to make progress, is one of the most powerful factors involved in being the instructional leader. According to Fullan (2010, 14), "*Powerful principals are obsessed with the instructional core of personalizing learning and getting results for each and every student. They make instruction a priority".* The quality of what learners achieve in a school is influenced by the quality of learning experiences, which in turn is influenced by the quality of the teacher's work, which is in turn influenced by the quality of instructional school leadership. Principals are first, and foremost, teachers who share in the goal of educating students to the utmost academic standard possible (Marishane & Botha, 2011). As the instructional role of the principal is of paramount importance, so is learning what the principal knows about 21st century learning and how to support his/her teachers in creating 21st century classrooms.

Principals who take pride in being administrators become too preoccupied in dealing with management tasks, while principals who are instructional leaders become involved in setting goals, managing the curriculum and monitoring lesson plans. The instructional leader makes quality instruction their top priority and endeavours to bring the vision of having a school that supports the changes that 21st century learning promotes, to the forefront (Jenkins, 2009).

With the arrival of 21st century teaching and learning ideals, as well as digital technology in schools, the role and responsibility of the principal has been affected quite significantly. Information and Communication Technologies have resulted in a demand for changes to take place in schools. There has been a shift from the industrial age to the knowledge economy and with this shift, we have seen the introduction of 21st century learning being drawn in (Hancock & Fulwiler, 2007).

Teachers' successful implementation of 21st century ideals and technology depends on their views, knowledge, skills and commitment to change. Teachers' impact on students occurs through what they learn, how they are taught, how they are assessed, as well as what they want students to achieve (Marishane & Botha, 2011). Teachers' influence on learners depends on their performance. They will need to be supported as they wrestle with and explore different ways in which to use technology in order to create authentic learning opportunities for their learners. This need creates a need for the principal as instructional leader to find ways of implementing and sustaining technological innovations in the classroom (Flanagan & Jacobsen, 2003; Fuller, 2010).

As the instructional leader, the principal should be at the helm of the changes that need to take place in instruction and learning in the 21st century classroom. As acknowledgement of the changes that the technological revolution brings, teachers need to rethink their basic tenets and the restructuring of schooling needs to take place. The principal will need to, amidst the uncertainty, lead the way into an evolution of teaching and learning. It is reasonable that principals may feel overwhelmed by the expectations that are present in this role (Hinrichs, 2015).

1.6 RESEARCH METHODOLOGY

1.6.1 Research paradigm, approach and design to be followed

The researcher conducted this study in the constructivist paradigm. Constructivism is a philosophy on how we come to understand or know. Reality and knowledge are built through communication and interaction. Constructivist view of learning is that each person forms their own representation of knowledge from their individual experiences. According to constructivists, people learn through active exploration that uncovers a discrepancy between what they know, as well as their new experience. Learning occurs within a social context and the interaction between students and their classmates is a necessary part of the learning process (Dalgarno, 2001).

In this paradigm, we come to know, understand and describe human nature through our interaction with the participants in their natural environment. Knowledge is constructed through the subjective experiences of the participants. By interacting with the participants, the researcher constructed new knowledge and using their experience came to understand the phenomenon studied (Williamson, 2006).

Constructionism draws from hermeneutics, which aims at a holistic understanding (Tracy, 2013). Hermeneutics is a philosophy that views life as a process of interpretation and dialogue. Hermeneutics means to make something clear or to explain something. Hermeneutics is the science of understanding through communication. This understanding takes place by transferring meaning from one person to another. When we connect and communicate with people or things created by people, we are involved in hermeneutics. Although hermeneutics allows for subjectivity, it does not mean we give up the pursuit of truth. Quite to the contrary, hermeneutics believe that the whole reason we communicate and attempt to understand is in search of truth (Higgs & Smith, 2006). This study intends to uncover the truth concerning the connection between the instructional role of the principal and creating 21st century classrooms.

The researcher used a qualitative approach. Qualitative researchers attempt to describe organisational phenomena. Good qualitative research helps people understand the world, their society, and institutions (Tracy, 2013). They apply their own subjective interpretation to understanding organisational occurrences. In qualitative research, the researcher's attention is drawn to understanding the process and he/she does not attempt to predict the outcome. Most qualitative research takes place within the local context in which the phenomena occur (Lee, 1999).

The researcher collected data from face-to-face situations by interacting with selected persons in their environments. "*Qualitative research describes and analyses people's individual and collective social actions, beliefs, thoughts and perceptions*" (McMillan & Schumacher, 2006: 315). This approach allows the individuals' unique experiences to be explained by using words gained from interacting with them. The collection of data takes place by actually talking directly to the participant in their

context (Creswell, 2009). This approach allows the researcher to be in the school environment, where the researcher can share and come to understand the experiences of the school principal through interacting with him/her. This approach is used to collect information, understand policy and practices involved in understanding the role of the principal as instructional leader in these particular schools.

The researcher used a case study as the research design for this study. The case studies can refer to a process, activity, event, programme or individual or multiple individuals (Fouche, 2002). The individual that this study focuses on is the school principal. The data analysis focuses on one phenomenon, which the researcher chose to understand in depth regardless of the number of sites or participants for this study (McMillan & Schumacher, 2006). The one phenomenon the researcher focused on is the instructional role of the principal in assisting teachers in creating 21st century skills in their classrooms. The case study design allowed the researcher to use multiple sources to collect data. "*The exploration and description of the case take place through detailed, in-depth data collection methods, involving multiple sources of information that are rich in context"* (Fouche, 2002: 275).

1.6.2 Population and sampling

According to Strydom and Delport (2002), non-probability sampling methods are the primary method utilised in qualitative research studies. In particular, theoretical or purposeful sampling techniques, rather than random sampling are used. Good qualitative researchers engage in purposeful sampling as they are purposefully choosing data that fits the parameters of the research questions, goals and purposes (Tracy, 2013). They look specifically for individuals, groups, and settings where the specific process being studied is most likely to occur.

The researcher has selected Independent Schools in the Gauteng area, as geographically, these schools will be relatively easy to access. These particular schools have sufficient financial backing, so they are able to prioritise 21st century technology based learning. Not having finance to support 21st century skills and technology means the principal cannot make the establishment of 21st century

classrooms part of his instructional role, a priority. Eight school principals will be interviewed, selected using purposeful sampling, in order to obtain data. These school principals were selected as they come from information-rich schools. These schools are likely to be knowledgeable about the phenomenon being investigated (Macmillan & Schumacher, 2006). These eight schools are a sample from a population of 160 independent schools in Gauteng. This study will be bounded by eight independent primary schools in the Edenvale/Bedfordview area of Gauteng.

1.6.3 Data collection instruments

To collect data on the instructional role of the principal in establishing 21st century classrooms, the researcher used semi-structured interviews and document (policy) retrieval as instruments. These interviews intend to elicit views and opinions from the participants. These instruments allowed the researcher to set open-ended questions and change the direction of the questions to gain more and varied information from the participants. The semi-structured interview maintained a balance between free flowing and a directed conversation (Lee, 1999).

The researcher asked for the policies involved in the principal's instructional role in bringing 21st century skills into the classroom. Documents collected were documents available to the teachers, policies that have been drawn up or minutes of meetings where discussions concerning the implementation of 21st century skills or technology into the classroom have been conducted. The researcher used more than one source of data to collect information, which are answers to the interview questions and examining available documentation. *"In the entire qualitative process, the researcher keeps a focus on learning the meaning that the participants hold about the problem or issue, not the meaning that the researcher brings to the research or writers express in the literature"* (Creswell, 2009: 175).

The researcher recorded the interviews on a tape recording device. The date, place, interviewer and interviewee were recorded. This became the heading once the interviews were typed up. The researcher transcribed the data. By listening repeatedly to participants' voices, preliminary coding can take place. Transcribing can be time-consuming but this is not time wasting; by listening closely, the

researcher was able to identify ways to improve the wording of questions, as the researcher's interviewing skills (Tracy, 2013). The credibility of the research can be increased if the interviews are transcribed and analysed while they are still fresh. An attempt is made to capture the richness of themes emerging rather than reducing the responses to qualitative categories (de Vos, 2003).

The researcher read out the instructions that she intended to follow in order to record the instructions, setting a standard procedure that was followed with each interview. The researcher explained that the interview questions will be given to the participant and that they may be answered in any order depending on the way in which the participant would like to steer the interview. Despite the fact that the interviews will be recorded, the researcher also took written notes in the event that the recording equipment fails.

1.6.4 Data analysis and presentation

Iterative theory was be used for analysing the qualitative data. An iterative analysis alternates between emergent, reading of the data, and the use of existing models, explanations and theories (Tracy, 2013). Rather than using grounded theory, which only uses inductive approaches to data analysis, an iterative approach encourages reflection upon the interests, current literature and various theories the researcher brings to the data. Iteration is a reflexive process where the researcher visits and revisits the data connecting it to emerging insights and refines his/her focus and understanding (Tracy, 2013).

The data was organised and prepared for data analysis. Interviews were transcribed, field notes were typed, and the documents were arranged into different types, depending on the source of the information. Reading through the data to get a general sense of the information and to reflect on its overall meaning then took place (Creswell, 2009). The organisational process is also an interpretive activity. While organising the data, the researcher noticed some comparisons and overlook others. The organisation of data will influence the issues interpreted as prominent (Tracy, 2013).

Coding refers to the labelling and systemising of the data. The data were analysed with a coding process. By coding the material, the researcher organised it into pieces or parts before giving it meaning. The researcher 'broke off' segments into categories and labelled them with a term, which might have been obtained from the actual language of the participant. This is called a vivo term. Coding the data is an in-depth and time-consuming process whereby the researcher divided each interview into topics, clustered together similar topics, and placed the topics into columns. Colour as well as different fonts can be used to isolate different themes. In a separate document, bolded headings for each theme can then be made (Tracy, 2013). The researcher copy and pasted each theme under the correct heading in the relevant colour. The headings of these columns might be major topics, unique topics and leftover topics. Codes can also be used to separate the data into topics that the readers would expect to find, codes that are surprising and that were not anticipated, as well as codes that are unusual; a combination of predetermined and emerging codes were used (Creswell, 2009).

Computer-aided qualitative data analysis software (CAQDAS) has been specifically designed for the qualitative analysis of data. These programmes provide options for organising, managing, coding, sorting and reconfiguring data. The researcher is inclined to use what she is familiar with, that is coding through using different colours and fonts using a copy and paste method as outlined above.

A narrative passage was used to convey the findings of the analysis. The final step in the data analysis procedure is to extract the meaning of the data. The researcher derived meaning from the study by comparing the findings with the information found in literature and theories.

1.7   VALIDITY AND RELIABILITY OF THE STUDY

Validity and reliability are key aspects of all research. Meticulous attention to these two aspects can make the difference between good research and poor research and can help to assure that fellow scientists accept findings as credible and trustworthy. This is particularly vital in qualitative work, where the researcher's subjectivity can so

readily cloud the interpretation of the data, and where research findings are often questioned or viewed with scepticism by the scientific community. Therefore, researchers doing qualitative studies need to be especially sensitive to the issues of validity and reliability in their projects. Researchers need to be attuned to the multiple factors that pose risks to the validity of findings, and plan and implement various tactics or strategies into each stage of the research project to avoid or weaken these threatening factors. Researchers need to be aware that the tactics or strategies used to address validity and reliability in qualitative research are not the same as quantitative research. The very nature of qualitative research methods does not lead to statistical or empirical calculations of validity. The qualitative researcher seeks the same ends through different methods that are better suited to a human subject matter. Many authors focusing on qualitative research methods have suggested tactics or strategies the researcher can employ to enhance the truthfulness or validity of qualitative findings (Chenitz & Swanson, 1986; Crabtree & Miller, 1992; Field & Morse, 1985; Le Comple & Goetz, 1982; Morse, 1991; Sandelowski 1986; Corbin & Strauss, 1990).

The purpose of this study is to address the instructional role of the principal in bringing 21st century skills into the classroom, using a qualitative approach. Validity is one of the strengths of qualitative research; it is based on determining whether the findings of the research are exact in terms of the researcher, the participants and the readers of the account (Creswell, 2009). Many terms are used in qualitative literacy to communicate this idea. These are trustworthiness, authenticity and credibility. Eight validity strategies have been identified. Creswell (2009) recommends that the researcher use multiple strategies to check the accuracy of their findings. Validity refers to the degree of similarity between the explanations of the phenomena and the realities of the world. It refers to the degree to which a study accurately reflects or assesses the specific concept that the research is attempting to measure.

In this study, the researcher ensured credibility by using multi-methods strategies, participant language, verbatim accounts and member checking (McMillan & Schumacher, 2006). The researcher allowed for triangulation in data collection and data analysis. The central method was semi-structured interviews with document

analysis. Multiple theories or perspectives were used to interpret data. Interviews were phrased in the participant's language with literal statements from participants and quotations from documents. A summary of the research findings were given to the participants for approval. This is part of the multi-method strategy for ensuring credibility. Information was informally checked with participants for accuracy during data collection. As per Unisa policy, the ethics committee reviewed the entire project, which added to the credibility of the research project, as it constitutes external auditing.

Tracy (2013) offers the qualitative researcher another set of criteria for excellent quality quantitative research. She lists eight 'big tent' criteria for gaining quality research. "*This eight-point conceptualization for obtaining quality in qualitative research serves as a pedagogical tool, promotes dialogue among researchers from various paradigms, and encourages the viability and credibility of qualitative research with a variety of audiences*" (Tracy, 2013: 231). Although the researcher has chosen the strategies outlined by Creswell (2009), to give validity to the research, the researcher would like to outline the eight points listed by Tracy (2013) to completely cover the topic of credible qualitative research. The eight points are as follows:

- Worthy topic: A research topic must reveal an aspect of life that has not yet been explored or that has been misunderstood.
- Rich rigor: This refers to the caution, care and effort taken to make sure than the research is carried out in a fitting manner.
- Sincerity: This asks the question, is this research genuine and vulnerable. Has the researcher shared their goals, hopes and mistakes?
- Credibility: This refers to dependability or trustworthiness and expressing a reality that is believable or true.
- Resonance: This is considered the feature of the text that meaningfully reverberates and affects an audience.
- Significance: This asks the question, do the findings extend, change or complicate a body of knowledge or theory in new and significant ways.

- Ethical research practice: Multiple factors need to be taken into account when seeking to conform to ethical research practices. These include self-reflexivity, access, participation, interviewing, fieldwork, transcription and writing.
- Meaningful coherence: Qualitative studies should achieve their stated purpose and accomplish about what they propose to be.

1.8   RESEARCH ETHICS/ETHICAL CONSIDERATIONS

Qualitative research is more likely to be personally intrusive than quantitative research. Therefore, ethical guidelines include policies regarding informed consent, deception, confidentiality; anonymity and thoughtfulness need to be adhered to.

In order to collect data for this study, the researcher used semi-structured interviews. These interviews required the participants to talk about the internal circumstances of their school. The instructional role of the participant in the school, which may include the shortcomings of the principal as instructional leader, were explored. This implies that trust between the researcher and the participant is of paramount importance.

The following are the ethical considerations that McMillan and Schumacher (2006) suggest should be followed when conducting qualitative research. Informed consent as a dialogue, confidentiality and anonymity, privacy and empowerment, and caring and fairness.

A letter explaining the intentions and purpose of the study were sent to the participating schools. A letter, seeking permission for the study, were also sent to the Independent Schools Board. This letter outlined the intentions of the study and highlighted that this study would be conducted in Independent schools in Gauteng (Appendix F).

Before data collection takes place, clearance needs to be applied for with the Unisa Ethics Committee (REC). All research must have ethical clearance before it may commence. This process is to ensure that sound methodology and scientific validity are taking place. Conducting research that contains flaws is a waste of time and money, as well as other resources.

It is suggested that students apply for ethical clearance after the literature review has been completed and the research design is being finalised. At this stage, the student will consider the procedure to be followed in order to negotiate consent to conduct the research and will be designing the instrument to be used in the research. These documents must be reviewed and cleared by the REC.

1.9   LIMITATIONS AND DELIMITATIONS OF THE STUDY

This study might be limited by the lack of documentation outlining the role of the principal as instructional leader in bringing 21st century classrooms into the school. The school may be in the early stages of implementing change, there may be uncertainty about the direction and clarity of the change. The 21st century skills and implementation of these skills may be in the beginning stages.

In order to narrow the scope of this study, delimitations were used (Creswell, 2009). This study was narrowed to eight Independent Schools in the Edenvale, Bedfordview and Linksfield North area. This study is also limited to Independent Schools.

1.10   DEFINITION OF KEY CONCEPTS

1.10.1 Twenty-first Century classrooms

Critical thinking, problem solving, communication, collaboration, creativity and innovation are some of the 21st century skills that will bring our teaching in line with the demands of the global economy. Included in these skills is the application of technology to support more, vigorous instructional methods where students are encouraged to take control of their own learning. Collaboration and cooperative learning is encouraged and technology is used as a tool to connect with worldwide students who share a similar interest in the topic being covered (Robinson, 2010).

Learning and innovation skills are increasingly recognised as those that distinguish students who are prepared for more complex life and work environments in the 21st century, from those who are not (The Partnership for 21st century Learning, 2011). These skills as outlined in the P21 documentation focus on the 4C's of creativity,

critical thinking, communication and collaboration as being essential to prepare students for the future. Twenty-first century classrooms are places where students have a measure of power and freedom. They are encouraged to work cooperatively with others and be mindful of their own and others' goals. Technology plays a significant part both as a learning tool and as an avenue to access content. The teacher in this classroom supports and encourages their students to take control of their learning while guiding them in achieving their aims.

1.10.2 Instructional leadership

The instructional leadership role of the school principal presents the principal who is deeply involved in curricular and instructional matters. He controls, coordinates and supervises all teaching and learning activities. Much of his focus is on teacher behaviour in carrying out activities that affect the learner's progress (Marishane & Botha, 2011).

Instructional leadership involves the principal freeing himself from bureaucratic responsibilities and directing his efforts on improving teaching and learning within the school. The principal, as instructional leader, would involve himself in managing the curriculum, paying attention to the teacher's lesson plans and making teacher evaluation a priority. Providing teachers with opportunities for professional development, giving feedback and praise for effective teaching, and setting high expectations for performance are all subcomponents of the principal's instructional role. Within his role of instructional leader, the principal would promote student learning. He would attempt to make instructional quality of the school his main concern (Jenkins, 2009).

Whitaker (1997) identified four basic skills essential for instructional leadership. Instructional leaders need to be resource providers, provide information on current trends, good communicators and be a visible presence within the school. Whitaker's description of the essential skills of the instructional leadership role of the principal, aids the researcher in identifying what skills and knowledge are essential for the principal to possess in order to lead teachers.

Hoerr (2008, 84) explains how the title principal comes from the term principal teacher. The assumption could then be made that the principal had more knowledge concerning teaching and learning than anyone else present in the school. The role of the principal has undergone vast transformation but one thing remains constant, the principal needs to be the *"educational visionary, offering direction and expertise to ensure that students learn".* While instructional leaders have other responsibilities and need to allocate time to other issues, teaching and learning should be the area where most of the leaders' time is allocated. In doing this the principal will ensure that he is making the instructional segment of his/her leadership role a priority.

1.10.3 Independent schools

The South African Schools Act (SASA) of 1996 established a national schooling system, which recognised two categories of schools, these being public and independent schools. Public schools are state controlled and independent schools are not state controlled but rather privately governed schools. According to Section 29 of the Constitution of South Africa, everyone has the right to establish, at his or her own expense, an independent educational institution. These educational institutions may not discriminate against admission of any child based on race and must be registered with the state (ISASA website, 2016).

An independent school is a school that is self-governing in its finance and governance. It is not dependent upon national or local government for financing its operations, nor is it reliant on taxpayer contributions. It is funded by a combination of tuition charges, donations, and in some cases, the investment yield of an endowment.

According to the South African Schools Act of 1996, all independent schools need to be registered by the Head of Department in order for it to be recognised. The standards of these independent schools may not be inferior to the standards of a public school. The minister may determine the norms and standards involved in granting subsidies to independent schools. These subsidies may be withdrawn or reduced after sufficient notice has been given.

1.11 PLANNING OF THE STUDY: CHAPTER OUTLINE

Chapter one will outline the background and rationale of the study. It will contain the problem statement and outline both the methodology and limitations of the study.

Chapter two will focus on describing and defining the instructional role of the principal in establishing 21st century classrooms. It will then go into detail as to what instructional knowledge and skills the principal, as instructional leader, needs in order to lead teachers in establishing 21st century classrooms. The democratic classroom, as well as the knowing/doing gap, will be explored. The use of technology-based teaching, as well as the change in the role of the teacher, will be explored. This will give us a clearer picture of what the components involved in creating a 21st century classroom are.

Chapter three will focus on the research methodology, research questions and research design used in the study. It will contain and explain the population sampling, data collection methods and data analysis procedures. Validity strategies as found in Creswell (2009) pertaining to the research method, questions and design will be explained.

Chapter four will include the presentation of data collected from the participants, together with the results of the data analysis.

The summary of the findings of the data will be presented and discussed in the last chapter. Recommendations will be made as to the contribution this study can make to the possible change that needs to take place in education.

1.12 CONCLUSION

This chapter has served to introduce the topic under study and to give the details as to how this study will be conducted. The research methodology and validity measures were documented, as well as the ethical considerations and limitations discussed. The necessity of this study, as well as how the research problem will be broken down has been highlighted.

Change urgently needs to take place in education in South Africa. Twenty first century skills, instruction and learning are the direction that this change should take. The school principal, as the primary change agent, is at the forefront of the change. His/her vision for change will lead the school and its teachers toward twenty 21st century classrooms.

The following chapter studies the literature relating to the instructional leadership role of the principal in bringing 21st century learning into the classroom.

CHAPTER 2

LITERATURE REVIEW ANDTHEORETICAL FRAMEWORK

2.1   INTRODUCTION

The review of the research literature included books, journal articles and professional documents to address the topic of the knowledge and skills needed by the principal in order to lead teachers in bringing 21st century skills and learning into their classrooms. There are two main sections to be discussed in this chapter, namely the concept of the 21st century education and the principal as instructional leader within such a system. The first section of this chapter describes and defines the concept of 21st century education by dividing the broad topic into 21st century learning, the 21st century teacher, the 21st century student, the 21st century classroom and 21st century instruction. The second section of the chapter is divided into two subtopics namely the definition and description of the instructional role of the principal in establishing 21st century classrooms and the instructional knowledge and skills required by the principal in order to lead teachers in establishing 21st century classrooms.

2.2   THE CONCEPT OF 21st CENTURY EDUCATION

2.2.1 Introduction

The instructional design of 21st century education must meet the needs of and focus on developing skills for the 21st century student. The way in which instruction is designed must include the development of classrooms that promote self-directed, self-motivated learning, collaboration, creativity, innovation, and a global understanding of society with respect and consideration for the ideas of the larger community. The promoters of this type of education have been described in the progressive education movement as well as the democratic classroom, which is addressed later in this chapter (Little, 2013; Read, 2013).

2.2.2 The concept of 21st century learning

The concept of 21st century learning is student-centred, performance-focused learning. There is a flexible progression of ideas with a multistep path leading to open-ended solutions. Students construct their own knowledge using multiple sources and experiences. Collaborative work on authentic, real world projects takes place. Students play a role in the design and management of projects, as these students take responsibility for their own learning. Creative and innovative thinking takes place as the student searches for original solutions. Global experience and information seeking is encouraged and students use converging information and communication systems. These students are encouraged to explore the four C's, which are communication, collaboration, critical thinking and creativity (Ready Schools, 2012).

Mishra and Kereluik (2011) reviewed ten of the most significant frameworks of 21st century learning. Not all the knowledge and skills identified in this review are unique to this century. There are two key skills however, that distinctively apply to the 21st century. These two skills are related to information literacy and cultural competence and awareness. While there have been numerous forms of media before the beginning of the 21st century, the social, economic and informational influence of the Internet and digital media is unparalleled. The skills and knowledge necessary for success in the digital domain are different to those needed in the written media. New skills and knowledge are necessary in order to interact with digital media. Deciding which information is relevant and credible requires a new set of skills. Reading and comprehending the information on a screen requires a different set of skills to that of reading printed material. The Internet and digital media represent a new way of interacting, being able to navigate these pathways to information and use new skills is essential in the 21st century. Being culturally aware has become essential, as collaboration with individuals different form oneself due to globalisation and communication with people from diverse cultures, becomes the norm.

Fahnoe, Kereluik, Mishra and Terry (2013) conducted a study of fifteen reports, books and articles that describe the kinds of knowledge that researchers claim are instrumental in order for 21st century learning to take place. They set out to understand and define what 21st century learning is, which will then determine what, and more importantly, how we teach the students of the 21st century. In this study, two main reasons for the need to reconsider the kinds of knowledge being taught at present were identified, these being technological modernisation and globalisation. Technological modernisation means that there has been a change in developing countries from physical and routine jobs to an intellectual and knowledge economy, with the movement of technology from the being used solely in the workplace to being used in all aspects of people's personal and professional life. Due to the breakdown of national, economic and social boundaries a diverse global society has been created, this has been facilitated by the technological modernisation of our world.

From the studies studied, Fahnoe et al. (2013) identified three broad categories of knowledge with three subcategories within them, as common to all literature. The three broad categories are Foundational Knowledge, Meta Knowledge and Humanistic Knowledge. Foundational Knowledge is the answer to the 'what' question and contains three key subcategories: Core Content Knowledge, Digital Literacy and Cross-Disciplinary Knowledge. Meta Knowledge is about the knowledge of the process of working with foundational knowledge. The subcategories are Problem Solving and Critical Thinking, Communication and Collaboration, and Creativity and Innovation. Humanistic Knowledge is about the student's self and how he/she relates to the broader social and global context. These subcategories are Life/Job Skills/Leadership, Cultural Competence, and Ethical/Emotional awareness. The study of the fifteen most significant 21st century knowledge frameworks has led to new information and the identification of three overarching categories with three corresponding subcategories. Many of the subcategories overlap and are intended to complement and inform one another. These categories were not made up but emerged from the analysis of the fifteen documents used in this study.

From the above information, it can be concluded that 21st century learning is not a completely new or unique concept. Although core ideas and goals of education have not changed, the essentials of how these goals are used in this instance have changed. The impact of technology and globalisation on learning is strongly felt and explains the main difference between what has been previously explained as learning, as well as the topic of this section of the theoretical framework, namely 21st century learning.

The impact of technology has been felt in such a dramatic way, because the Internet and digital media has changed the foundational knowledge that existed prior to the 21st century. It is essential for a student to be able to navigate both the Internet and digital media in order to be successful in the 21st century. New skills are necessary for 21st century learning to take place, which allows students to contribute to the collective knowledge base. The introduction of digital technology has altered the approaches of obtaining, representing and manipulating information and knowledge. The future depends on students who are able to have deep knowledge of more than one discipline and are able to link between these disciplines. This new ability to connect disciplines is unique to the 21st century and we need to adjust to our 21st century learning.

Technology is no longer used in a basic way. It is rather used to repurpose technology to meet educational and learning needs. Problem solving and critical thinking is not new to learning but these skills are transformed in the 21st century by the unprecedented access to a large volume of information available on the Internet, which places a greater demand on the student to discern between high-quality and low-quality information. Technology also alters the way in which students communicate and collaborate with one another. Vast distances can be transcended through using the Internet. This increase in globalisation means new exposure to diverse cultures, heralding a need to be far more culturally competent. Self-regulation is becoming a vital skill for the student in the 21st century to learn. Twenty-first century learning means showing students how to regulate one's efforts. This awareness is included in the changes to humanistic knowledge, the third category.

Ethical and moral questions concerning issues such as intellectual property and stem-cell research need to be addressed in 21st century learning. Humanistic knowledge has become vital due to globalisation and our interconnected world. Developing a sound value system that respects differences while showing empathy is critically important as we investigate what is needed and what creates the difference between learning and the concept of what characterises 21st century learning.

Berry (2010) explains that 21st century leaning means that student's master content while evaluating and synthesizing this information found through a variety of sources while being aware of cultural diversities. Students demonstrate the three R's, reading, writing and arithmetic's but remains astutely aware of the three C's, creativity, communication and collaboration. Digital literacy is of paramount importance as we teach our students civic responsibility.

Wessling (2010) describes 21st century learning to be learning that marries content to skill. Without skill, students memorise and regurgitate facts while retaining a passive role in the classroom. Without content, problem solving or collaboration experiences become unimportant, almost irrelevant. The 21st century learning paradigm gives teachers and learners an opportunity to resolve the content versus skills debate by bringing a framework into existence that dispels these contradictions. According to Wessling, 21st century learning allows us to use the cornerstones of the past to help us find our way to the future. Students involved in 21st century learning will take risks and learn to nurture learning communities where all stakeholders are students.

The use of digital apparatus and the Internet is a clear distinction between our past educational path and the 21st century learning environment. Combining the foundational skills of reading, writing and arithmetic with higher order skills such as critical thinking, creativity, communication and collaboration, help us to navigate the 21st century learning philosophy. Content is not obsolete but is used as a springboard to navigate problem solving and group constructed projects. New skills are necessary in the attempt to create 21st century learning, where students traverse

new learning opportunities by collaborating with students who are different from themselves.

The impact of globalisation and technology can be felt in the way in which we deal with information and knowledge. Application of high order thinking skills such as problem solving and critical thinking take on a different slant as the abundant access to information makes the students' application of these skills far more complex. There is an increased need for cultural awareness, as students are able to communicate with each other across great distances. Being in control and responsible for one's own learning, together with a growth in moral and ethical understanding, is required as we charter 21st century learning. Developing empathy and a sound value system is included in Humanistic knowledge, which is a unique to 21st century learning.

2.2.3 The 21st century teacher

Teachers of today use technology to add excitement and interest to their lessons. The teacher is the pivotal point of the lesson, as he/she uses multimedia presentations to attract the attention of the 21st century students. A new way of teaching with technology needs to take place, where there is a shift in teacher/student roles. In this arrangement, the teacher acts as a facilitator, coordinating activities that have meaning and ignite defining moments for students (Blair, 2012; Busthami, Byabazaire & Garba, 2015).

Teachers need to acquire a variety of different skills to teach the 21st century student effectively. Teaching a static syllabus of content is at the heart of education in most countries today, where students can access vast amounts of content through the Internet; teaching has to take on a different standpoint. Teachers need to encourage students to become lifelong learners to manage complex ways of thinking, and compound ways of working that are unique to the human being. Teachers today are expected to diversify their teaching practices in order to personalise educational experience for the students that they teach. Educational practices need to move away from curriculum-centred learning and embrace student-centred methodologies, which allow the individual student to learn in ways that are conducive to their

progress. Teachers need to be innovative in their curricula and methodology in order to prepare students for the rapidly changing labour market (Schleicher, 2012).

Discovery and creative activities are amongst the most effective activities involved in promoting the skills outlined in the 21st Century Skills document, drawn up by Partnership for 21st Century Skills (P21); these often work together. The student becomes the important feature of the classroom, acting as explorer and designer. This is an emancipating transferral as the teacher now spends valuable time creating powerful learning activities instead of using valuable time viewing presentations, using technology. The material covered will be more in depth and will be remembered, as the experience will be far more meaningful. By guiding their students to be designers and discoverers, teachers show their belief in each child's ability and acknowledge that they add value to the learning experience (Blair, 2012; Palmer, 2015).

At present, teacher directed, memory focused instruction is at the centre of most current classroom practices. It is essential that this alter into student-centred, performance-focused learning (Ready, 2012). Research has shown that teachers need to allow students to be more actively involved in their learning. This practice will lead to more, effective engagement in learning (Quinn, 2002).

The Partnership for 21st Century Skills (P21) (Fabel, 2008) is a partnership of American business leaders, policy creators and educational leaders. Their work has been used in work related to 21st century skills. The Partnerships for 21st century skills 2010 (Dede, 2009) drew up a paper, which recognises the following abilities as being essential for teachers to effectively teach the 21st century student:

- Using technology together with content and teaching methodology; creatively using this technology to meet learning needs.
- Lining up instruction with 21st century knowledge and skills.
- Giving a balance of direct instruction with project-based collaborative teaching methods.
- Using the knowledge of adolescent and child development in preparation of lessons and education policy.

- Using a wide range of assessment strategies in order to evaluate student performance, which includes formative, portfolio-based and summative assessment.

- Actively participating in the learning community by using the expertise contained within the school area by coaching, knowledge sharing and mentoring. Team teaching is also a good way to make use of the knowledge and expertise contained in one's own community.

- Acting as mentors and peer coaches with other educators.

- Making use of a wide range of strategies to reach and teach students with a wide variety of learning styles by creating an environment that supports different ways of teaching and learning.

- Looking for a variety of learning opportunities to embrace lifelong professional learning.

The International Society for Technology in Education (ISTE) is another leading organisation in the field of 21st century skills required for today's students. It has over 100 000 educational leaders and is vigilant in keeping education experts informed of global education issues. The standards that are essential for students to perfect in the 21st century classroom are also needed for the teachers to model as they draw up lesson activities and plan teaching pedagogy (Pacific Policy Research Centre, 2010). The following additional skills have been highlighted by ISTE for teachers to consider:

- **Facilitate and inspire student learning and creativity:** This is where teachers apply their knowledge of subject matter, teaching methods and technology to help students to have experiences that promote learning, creativity and originality in face-to face and virtual environments.

- **Design and develop digital age learning experiences and assessments:** Teachers need to compile authentic learning experiences and assessments that include the latest tools and resources in order to maximise content learning in context and to develop the knowledge, skills and attitudes identified in the 21st century skills listed in the standards below.

- **Model digital age work and learning:** Teachers display the knowledge, skills and work progressions of an innovative professional in a global and digital society.
- **Promote and model digital citizenship and responsibility:** Teachers are informed about local and global issues in a fast moving digital culture and show ethical behaviour in their professional behaviour and practices.
- **Engage in professional growth and leadership:** Teachers show their students their commitment to growth by modelling lifelong learning. Teachers improve their classroom practices and display their willingness to learn and improve professional practices. They demonstrate the use of digital tools and use technology in the classroom as standard practice.

The way in which instruction is presented must meet the requirements and pay attention to developing the 21st century skills of the learner. Classrooms that promote creativity and self-directed learning are based on 21st century skills and instruction. Collaboration and a universal understanding, with respect for others' ideas, need to be the basis of the 21st century instruction. Learning based on the above can be described as democratic classrooms (Eikenberry 2009; Kesici, 2008). The democratic classroom aims to develop students who are able to think independently, and take responsibility for their learning; this too is the aim of the teacher in establishing a 21st century learning environment. Students in both the democratic classroom and the 21st century classroom are encouraged to take risks; express their own views while being respectful of the views of others (Arrington, 2014).

Kesici (2008) identifies seven categories of teacher duties in growing an independent and democratic classroom. Teachers in democratic classrooms aim to support individuals while fostering collaboration and cooperation. The seven duties include:

- shared decision-making,
- provide equality,
- effective communication,
- student-centred education,

- give importance to students,

- be fair, and

- express ideas freely.

The teacher who aims to develop 21st century skills and learning in his/her classroom may use the proponents of the democratic classroom. The origin and components of a democratic classroom are explained further under the section on instruction.

2.2.4 The 21st century student

According to Blair (2012), 21st century students need to do more than just master the core curriculum in order to be successful in their tertiary studies, as well as in the workplace. Partnerships for 21st Century skills (Fabel, 2008), as mentioned above, explains that what we are in essence doing when we advocate 21st century learning, is to fuse the traditional three R's with the vital fours C's which are critical thinking, creativity, communication and collaboration. Effective application of these skills in a technology filled life and place of work requires students to be exposed to and mastering the four C's in a technological rich learning environment. To create such an environment, educators need to put technology into the hands of their students and trust these students with more liberal technology use. For students' performance to line up with their potential they need access to a continually developing range of technological tools and activities that require them to problem-solve, make decisions, work in teams and be innovative in their ideas. The four C's are at the centre of the International Society for Technology Standards (NETS) for students, providing a framework for pinpointing the focus of technology for students from Grade one to Grade 12.

In Henderson and Hawthorne (2000), for core level changes in educational beliefs and structure, students need to play a bigger role in their learning. These students make decisions about what they feel is important, based on their personal knowledge, and what they feel is needed in their learning process. In democratic societies, learners need to be at the centre of their learning, to play a larger more self-directing role.

In America, a study of the 20 top achieving universities was done in order to identify the skills needed by the 21st century student. These skills were necessary to not only gain acceptance into universities but also needed in order to be successful once admitted into the university. These skills include leadership, teamwork, problem solving and communication. In addition, skills such as time management, self-management, adaptability, analytical thinking, and global consciousness were additional skills and attributes identified (Bassett, 2005).

Research by the North Central Regional Education Laboratory (NCREL) and the Metiri Group (Capuano & Knoderer, 2006: 114-115) identified the following 21st century skills needed by today's students:

- **Basic literacy**: language and numeracy proficiency using conventional or technology-based media;
- **Technology literacy**: competence in the use of computers, networks, applications, and other technological devices;
- **Visual literacy**: the ability to decipher, interpret, and express ideas using images, graphics, icons, charts, graphs, and videos;
- **Information literacy**: the competence to find, evaluate, and make use of information appropriately;
- **Global awareness or cultural competence**: the ability and willingness to form authentic relationships across differences;
- **Self-direction**: the ability to set goals, plan for achievement, independent management of time and effort, and independent assessment of the quality of one's learning and any resulting products; and
- **Higher-order thinking or sound reasoning**: process of analysis, comparison, inference and interpretation, synthesis, and evaluation.

The Partnership for 21st Century Skills (P21) identified that the focus must be placed on the 21st Century Skills outcome (Partnership for 21st Century Skills, 2009b). The partnership agreed that schools must insist that students master core academic subjects in order to lay the groundwork on which other skills and knowledge can be built. The Partnership for 21st Century Skills also highlights that states, schools and

regions must make sure that they are addressing the following 21st century skills by asking if they are helping students to become (Partnership for 21st Century Skills, 2009b):

- critical thinkers,
- problem solvers,
- good communicators,
- good collaborators,
- information and technology literate,
- flexible and adaptable,
- innovative and creative,
- globally competent, and
- financially literate.

The International Society for Technology in Education (ISTE.NETS.S: 1-2) has acknowledged a set of standards that students are assessed on in order to be in line with the needs of the world today. Classrooms where the following standards are apparent can be said to display 21st century learning.

- **Creativity and innovation**: students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- **Communication and collaboration**: students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and to contribute to the learning of others.
- **Research and information fluency**: students apply digital tools to gather, evaluate, and use information.
- **Critical thinking, problem solving, and decision-making**: students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
- **Digital citizenship**: students understand human, cultural, and societal issues related to technology and practice legal and ethical behaviour.
- **Technology operations and concepts**: students demonstrate a sound understanding of technology concepts, systems, and operations.

Throughout the standards and skills listed above, there seems to be a common thread evident. Students are required to be fluent in the use of technology while displaying high order skills such as critical thinking and problem solving. Being able to collaborate with one's classroom peers, as well as people from different cultures, is necessary. Students who think independently and take responsibility for their learning are vital characteristics of the 21st century student.

2.2.5 The 21st century classroom

Making the tools available to collect data and assess progress is vital for the way the 21st century student thinks and learns. Technology needs to be available in the 21st century classroom. The factors that affect the classroom structure needs to be considered (Karanian & Chidid, 2004; Donovan, Green & Mason, 2014).

Governor Pat Quinn (2012:1) of Illinois stated in a newspaper article, "*The most valuable investment we can make is in the education of our children. Preparing our students for a 21st century economy starts with making sure their classrooms use the technology that will be vital to their success in high school, higher education and their careers".* The design of the classroom should allow for movement and access to the necessary technology.

A study was conducted in Iceland to find what effect designs that are more modern would have on 21st century teaching practices (Siguroardottir & Hjartarson, 2011). Individualised learning and collaborative learning were identified as the emphasis for 21st century instruction; this should then be the foundation of the design of the learning environment. The designs of the classrooms in the school should be open and flexible to allow for changing needs of the students and their activities. Cooperation amongst teachers was more common and the students had more scope to choose assignments. This was the extent of the differences in the instructional practices.

Angiello (2001) discussed the similarity between work and school as the removal of walls in relation to the workplace is moving towards removing the walls between school and home in the context of education. Work no longer means where you are

but rather what you do. Learning and the classroom must take into account the social connections that occur inside the classroom and carry over to the student's life outside the walls of the classroom and vice versa (Sheninger & Larkin, 2012).

Dewey (1918) defined democratic classrooms as places where student and teacher work on a topic, where each one needs to refer to the actions of the other in order to give direction to their action. Pryor (2004) noted that as early as 1933, American educational literature was commenting on the value and need for democratic classrooms. These are classrooms where teachers give their students freedom by allowing more self-directed and independent learning to take place. Within this freedom, students consider the good of the class, as well as themselves when making decisions. Democratic classrooms attempt to grow independent thinkers who consider the needs and goals of others while attempting to reach their own objectives (Arrington, 2014).

A democratic classroom gives students the freedom to express their creativity while maintaining responsibility to submit work of a high quality. This classroom allows students to grapple with and provide reason for views while being careful to allow others to express their views. Risk taking and making mistakes is part of the learning process and in the democratic classroom, the student has the safety and security to do both (Kesici, 2008; Waskow, 1998).

Democratic classrooms are not just about teaching strategies, the question of power is also called to the forefront. In the democratic classroom, the power is shared with the students allowing them to be involved in the decision-making that takes place on a daily basis. In many classrooms, the sharing of power has become an obstacle. The teacher needs to be as transparent as possible allowing the students to see the slight difference in the decision-making and helping them to understand this difference. In this way, students feel more in control of their learning as well as more responsible for the success of their learning (Eikenberry, 2009).

Ellis (2013) reminds us that neither the teacher nor the student is completely free to make all the decisions where learning is concerned. Both student and teacher are accountable to organisations that prescribe certain programme standards and

assessment criteria. One can get around these obstacles by acknowledging these boundaries and setting ways in which the democratic classroom will operate. Teachers will also bring a certain expertise and experience they have accumulated over their years of teaching. The student may not have the necessary experience to put forward the best learning practices. As the student grows in their knowledge and experience of the teacher can re-evaluate the methods put forward by the student.

2.2.6 Instruction in the 21st century instruction

Schank (2000: 1) states at the turn of the century that:

> *Technology is on the verge of fundamentally reshaping the American education system… The computer will allow the creation of 'learning by doing'… Teachers will be left to provide things that technology cannot: personal one-on-one tutoring; teaching kids how to work in a group to accomplish something; and teaching crucial interpersonal relationship skills.*

Although Schank's (2000) prediction of schools being places that ran online courses did not come to its full reality, there is some implications for teachers for the 21st century in his study. Many of the principles and practices of 21st century educational practice reveal a striking resemblance to the progressive education movement. Progressive education has project-based learning, critical thinking, cooperative learning, individualised instruction, self-direction, global competency and the use of technology as learning principals. Many of these principals are found in the skills and knowledge outlined in 21st century educational practices. Though the label of progressive education has melted away, many of the proponents of progressive education can be found in the 21st century instructional practices (Little, 2013). In a lecture to students at Columbia University in the 1940's, John Dewey's words resonate loudly today: *"The world is moving at a tremendous rate – no one knows where. We must prepare our children not for the world of the past – not for our world – but, for their world – the world of the future" (Kandel, 1941).*

Some of the practices of the 21st century education system can be found in the tenets of progressive education. Project-based learning, critical thinking, cooperative learning, individualised instruction, self-direction and independence to name a few, are the tenants of progressive education, which we find to be very similar to what we are aiming to achieve with 21st century learning. Here follows a brief outline by Little (2013) of the re-emergence of strands of progressive education that are deeply embedded in the 21st century teaching pedagogy.

- **Project-based learning (PBL):** 21st century learning uses a teaching style known as Project-Based Learning (PBL). Teachers that use PBL seem to be developing the skills outlined in 21st century instruction. Allowing children to choose real life problems and situations stimulates their interest, promotes content knowledge and contributes to the development of collaboration and creativity (Kilpatrick, 1918). William Heard Kilpatrick sat along with John Dewey on the faculty of Columbia Teachers College and was a proponent of Progressive Education.

- **Critical thinking:** Practitioners of 21st Century Education consider critical thinking and problem solving essential to learning. Students should become 'reasoners', able to apply inductive or deductive thinking as appropriate to a given challenge. They should be able to make sound judgements and decisions, and solve problems by asking questions and bringing innovative thought to situations. The theories of John Dewey strongly instruct the learner to be involved in reflective thought, which shows active and persistent consideration of any belief.

- **Cooperative learning:** Students working together in small groups are a fundamental element of 21st century education. Students sharing their skills and resources while the teacher acts as a guide or facilitator is at the centre of cooperative learning. Applying cooperation to 21st century skills is excellent, as technology allows for collaboration across distances. Cooperative learning can be traced back to progressive school where learners are encouraged to adjust to each other's thinking and ideas. John Dewey was a proponent of students collaborating as it helped the students understand democracy.

- **Individualising instruction:** In 21st century education, students are encouraged to work at their own pace and to work independently and autonomously. Teachers are finding ways, using technology, in order to provide more students with one on one instruction. Online, instruction-based programmes are being developed to aid teachers in allowing students to work at their own pace independently. Individualised instruction has been around for centuries but one of the earliest recollections of individualised instruction is by Frederic Burk, a teacher trainer at San Francisco Normal School in 1912. One of her instructors noticed the children had a mixed level of understanding of Mathematical concepts and she devised a mixed level of activities for this group of children. This system became very popular with the progressive educators.

- **Self-directed and independence:** In an effort to move away from lecture style teaching, the emerging aspirations of 21st century education is to allow learners to be self-directed. This approach permits students to take responsibility and ownership of their own learning. Technology allows teachers to move away from direct instruction and use what is available to us to give children a unique experience in the classroom. Pestalozzi, the 18-century philosopher, had argued that children should have the freedom to pursue their interests. Pestalozzi is cited as a major historical figure contributing to the progressives' to shift their emphases to a more child-centred approach. Dewey supported this philosophy fully.

- **Global competency and awareness**: A vital part of 21st century learning is for students to be aware of the world we live in. To be globally competent is to respect people from different cultures and to work at being able to communicate with them. The Progressive Education Association showed a keen interest in the international progressive education movement but this interest did not progress very far.

- **Using technology as a learning tool:** The utilisation of technology as a learning tool is a predominant feature of 21st century education. Some schools' curriculum has become embedded in technology. Using technology in schools allows for design-orientated projects and can aid problem-solving assignments. Dewey

viewed the role of science as vital for a democratic society; this is due to the impartial nature of science.

2.2.7 Conclusion

A great deal of information pertaining to the standards and measures, skills and competencies of the 21st century student have been outlined. The model teacher and the focus that he/she should have in creating 21st century classrooms have been chartered. Looking at the similarities between the democratic classroom, progressive education and our move towards the 21st century skills and learning lead us to believe that the shift that we feel so urgently needs to take place has been around for some time, without the important element of the inclusion of technology and the impact of technology on our society.

2.3 THE PRINCIPAL AS INSTRUCTIONAL LEADER

2.3.1 Introduction

Much has been written about the instructional leadership role of the school principal and dates back to the 1800s when the word principal was used in conjunction with the word teacher. The principal, in essence, was the head teacher who took on some administrative tasks, as schools began to grow bigger, accommodating more than one classroom (Mendels, 2012). The first known principal was like the other teachers in that he was concerned about instruction above all else. In the following two sub sections, the researcher will discuss the definitions that distinguish instructional leadership from other kinds of leaders. Once the definition and description is outlined, the researcher will move on to the knowledge and skills necessary for instructional leaders to lead teachers in establishing 21st century classrooms.

2.3.2 The instructional role of the principal in establishing 21st century classrooms

Ready (2012) explains instructional leadership to be when the focus of the principal is on teaching, learning, instruction, curriculum and assessment. The principal takes the primary role in the discussion concerning standards for curriculum, instruction

and assessment, based on the current research and best practices, in order to establish and achieve high standards for students.

According to Lunenburg (2010), the principal's main concern is to endorse the learning and achievement of all students. Principals need to help teachers change their focus from what they are teaching to what students are learning. The principal, as instructional leader, helps the school to focus on why it exists, which is to help all students learn. Putting structures in place that help teachers to work together to improve instruction is of paramount importance for the instructional leader. Ensuring that professional development is aligned with the school's goals, are among the imperative tasks the principal needs to perform in his role as becoming a successful instructional leader.

Marishane and Botha (2011) describe the primary focus of the instructional leader as curriculum and instructional development. He or she needs to control, coordinate and supervise teaching and learning activities. A principal who allows his attention to be drawn to such matters inspires his teachers and learners to pursue high achievement standards.

Fullan (2010) states, principals who are effective and influential are obsessed with the instructional core of personalising learning and getting results for every student. They make instruction a priority. Principals are first, and foremost, teachers who share in the goal of educating students to the utmost academic standard possible.

The 'instruction' referred to in this study refers to the organisation and construction of the environment in the classroom, as well as the plans, tasks and activities involved in managing learning opportunities for students, provided by teachers in those classrooms (McEwan, 1998). The instructional leader would provide the focus and direction that the teachers would adopt in the practices used in accordance with the decided upon teaching and learning goals. Many publications currently identify that goal in education to be 21st century instruction (Capuano & Knoderer, 2006; Marger, 1996; West Virginia Department of Education Communications Office, 2008; Wilson, 2006).

Wilson (2008) outlines three actions that he feels an instructional leader must do in order to be effective. He must understand the instructional design language used in most schools. This will aid him in talking to teachers with clarity and gain their support. He must also model the operative practices that are used in teaching and learning situations. Lastly, he needs to provide his teachers with the tools they need to be effective in the classroom, and have the knowledge on how to use those tools, which he would then pass on to the teachers.

The instructional role of the principal is to ensure that each child is learning and making a success of his/her learning opportunities. Leading teachers in creating positive learning environments is a critical part of his/her role as instructional leader. Overseeing the policies involved and implementation of instruction, curriculum and assessments is part of the principal's instructional role. Ensuring that the resources are available to support the programme needs of the teachers in order to provide for the learning needs of the students is essential.

2.3.3 The instructional knowledge and skills required for the principal to lead teachers in establishing 21st century classrooms

ISTE (2009) outlines five standards that administrators need to pay attention to in order to bring 21st century learning into the classroom. By identifying these standards, we acknowledge these as important skills of which the school principal, as leader and administrator of the task of bringing 21st century learning into our classrooms, needs to be cognisant.

- **Visionary leadership**: The principal inspires and leads the development and implementation of a shared vision in bringing 21st century skills and learning into the classroom. This vision includes the comprehensive integration of technology in order to promote change throughout the organisation, and to motivate all stakeholders to take hold of the vision as a change that maximises use of digital-age resources to meet the changing needs of the students in the classrooms that we teach.

- **Digital age learning culture:** The principal needs to create and promote a digital-age learning culture where the education that is offered engages students while making use of the effective and frequent use of technology for learning.

- **Excellence in professional practice:** The principal is to promote an environment of professional learning that empowers educators to challenge student learning through technology and digital resources. This includes allocating time, resources and access to growth in technology fluency and integration. The principal is to model communication and collaboration effectively among stakeholders using digital age tools. The principal needs to stay in touch with the current trends regarding the use of technology and its potential to improve student learning.

- **Systematic improvement:** The principal must aim to improve the organisation continuously using information and technology resources. He/she needs to collect and analyse data, interpret results and share the outcome with teachers in order to improve performance and ultimately, student learning. Employ people who are able to use technology creatively and skilfully to advance academic and operational goals.

- **Digital citizenship:** The principal should have a good understanding of social, ethical and legal issues related to digital culture. He/she needs to establish and model policies for safe, ethical and legal use of digital information. He/she should promote and facilitate a shared cultural understanding and involvement in global issues using contemporary communication and collaboration tools.

Demski (2012) brings seven habits of highly effective Tech-Leading principals to our attention. A Tech-Leading principal is one where the principal leads the way and models technology innovation and the use of technology in learning. Demski would like us to believe that "…*the most successful implementation of technology programs takes place in schools where the principal sees him or herself as a technology leader"* (2012: 2). She outlines the seven habits as follows:

- **Creating the right environment is vital**. Teachers need to be inspired to try new things in order to develop 21st century classrooms. Using tools like Twitter will encourage students to do the same. By being open to new ideas, stakeholders

are encouraged to invest and to become involved in the new vision that the principal has for the school.

- **Foster collaboration.** The adults in the educational environment need to be having open conversations using tools like Twitter; there needs to be collaborating among the school's teachers. The spirit of collaboration and communication needs to filter down to the students.

- **Be open to new ideas**. The principal needs to get all the stakeholders in the school invested and involved in the new vision for the school. It needs to be communicated to the teachers that their input is valued and new ideas welcomed.

- **Be a connected learner**. The catalyst for change and transformation will be the principal becoming a connected learner. This will infiltrate through the staff members who will realize, by that which the principle invests in, what is important.

- **Locate and provide adequate resources**. Although it is necessary for the principal to provide the technology, it is important to note that it is not only about technology. It is about technology supporting the new way of teaching and learning.

- **Take risks**. Allowing the teachers to feel that it is acceptable to take risks and try different pedagogical and technological methodologies, is where our students will witness the bravery involved in attempting techniques that are new and unknown. This should inspire our students to try the new and different in this safe environment.

- **Have a visionary focus**. The last important habit is a vital one in the principal's role in bringing 21st century classrooms into being. Having a visionary focus and modelling the tools needed to bring the digital footmark into the classrooms in order to establish the new literacy needed in the 21st century classroom.

The principal needs to have a clear vision of what he is leading his teachers to achieve. This vision should serve as a constant reminder of where he/she is going and how he/she would like to get there. Light, Manson and Noguera (2009: 89) comment on the vision necessary to achieve the desired goal.

Therefore, the first component of this new education system is a clear vision for educational technology as a facilitator of school reform aligned with a well-defined set of the educational goals that cut across the entire educational eco-system. But creating such system requires making broad, systemic shifts in approaches to teacher training and certification, to curriculum and assessment frameworks, and to the overall vision of good teaching and learning that is promulgated within an education system.

Blair (2012) explains that developing a 21st century environment is not about the money, it is about having the right mind-set. The principal needs to be proactive and:

- make 21st century needs a priority;
- empower teachers to use technology in such a way as to create digital learning experiences that promote discovery and creation; and
- establishing a shared vision for the teachers, which includes a unique plan.

Wells (2012) explains that 21st century learning does not necessarily depend on technology alone. It can be seen in the way teaching and learning takes place. Technology is a tool for research, communication and enquiry, which is tremendously beneficial to students but in itself, it is not at the centre of the 21st century classroom.

2.3.4 Conclusion

Today's principal, as instructional leader, must lead teachers in implementing 21st century instruction into their classrooms. The teacher should make it a priority to model the skills that the 21st century student needs, both technologically and otherwise. The principal as instructional leader must include one of teacher, administrator and instructional coach (Arrington, 2014).

Making instruction a priority in his/her leadership role establishes a strong culture of learning in the school environment. In his/her instructional leadership role, the principal should concern him/herself with overseeing the teaching pedagogy and direction of instruction of teachers, as this is of paramount importance in determining the success of the instructional programme. Being available to solve problems that might arise in the instructional programme, as well as motivate teachers to improve

upon their daily teaching practices becomes an essential part of the principal's role as instructional leader.

Ensuring that the teachers' classroom practices reflect the instructional and learning needs and goals of the school would aid the principal in ensuring that his/her instructional objectives are alive in the minds and hearts of his/her teachers.

2.4 SUMMARY

The role of the principal is superlative in bringing 21st century learning into classrooms in Gauteng independent schools. The implementation of 21st century skills in classrooms must be strategically led in order for the change to be sustainable and in line with the organisational culture of the school. The principal, as the instructional leader, needs to have a firmly established vision for the classrooms in which 21st century learning is to take place. It is vital that he himself is willing to become a student in as such that he will model the new skills and expertise needed by the teachers in order to show that taking risks, using technology and collaborating amongst all stakeholders is the direction the organisation will be moving in.

The concept of 21st century learning is student-centred learning where the four C's of communication, collaboration, critical thinking and creativity are explored. Technology is used as a tool; it is not the main goal of 21st century learning. The Partnership for 21st Century Skills outlines very important abilities for teachers to practice in order to teach the 21st century student effectively. This includes using technology to meet learning needs, lining up instruction with 21st century learning skills, incorporating both direct instruction with project-based learning, using a variety of assessment strategies, acting as a mentor to other teachers and using a variety of teaching strategies to meet the learning styles of a variety of students.

The ISTE highlights the need for teachers to inspire student learning and creativity, to design and develop digital leaning experiences that use the latest tools in order to maximise content learning in context. Teachers are to display the attributes of a professional in a global and digital society, while being knowledgeable about local and global issues. Being committed to lifelong learning, teachers display their

willingness to learn and improve their teaching practices. Kesici (2008) identifies several categories that teachers need to be cognisance of in order to bring in the components of the democratic classroom, which contains many of the components advocated by the 21st century classroom.

The 21st century skills advocate fusing the three R's with the four C's. Application of these skills in a technology rich environment, where students are trusted with technology in order to problem-solve and make decisions, where the student is at the centre of his learning is what we are aiming for in the 21st century classroom. Students need basic literacy, technology literacy, visual literacy and information literacy as skills in the 21st century classroom. Being aware of global and culture similarities and differences together with self-direction are vitally important for the 21st century student. Higher-order thinking and analysis skills are highlighted as important for the 21st century student. Once again, the P21 seeks to find out if teachers are helping students become critical thinkers and problem solvers.

The ISTE has encouraged all stakeholders involved in bringing 21st century skills into the classroom to study the standards, which they have identified as meeting the needs of the world. These standards include the four C's as well as encouraging digital citizenship and technology proficiency.

Changing the design and layout of 21st century classrooms is explored as we study how the physical plan of schools' classrooms may be altered in order to encourage and maximise the use of 21st century skills. The democratic classroom and the question of power in the classroom are charted. Where students are allowed to exercise a certain amount of choice there is the advantage that they will become more responsible in taking control of their learning.

The similarity between the proponents of progressive education and the 21st century skills and practices are addressed. Project-based learning, critical thinking, cooperative learning, individualised instruction, self-directed and independent learning, global competency and the use of technology are outlined.

The role of the principal, as instructional leader, at the forefront of the advocate of change has been explained and explored. Understanding what an instructional leader is and what his focus and priority is, is vital to this study. Various sources have been consulted in order to give a holistic view of this important role.

The skills and standards necessary for principals to lead teachers in establishing 21st century classrooms are identified and explained by both the ISTE and Demski. Having the vision to create 21st century classrooms as well as embracing a digital culture of learning is essential. Promoting excellence in professional practices and working daily to improve the school is listed as significant in leading teachers. Understanding technology and the social, ethical and legal issues related to a digital culture is the responsibility of the principal. Providing the physical requirements and resources needed by teachers in this 21st century classroom is essential in leading teachers to creating 21st century classrooms.

Throughout this chapter, the researcher has given a detailed description of 21st century education. The 21st century classrooms, as well as 21st century pedagogical practices have been outlined. The skills needed by the 21st century student, as well as how 21st century instruction takes place have been defined. The role of the principal as instructional leader in creating 21st century educational practices has been chartered and it has been established how essential his/her role is in creating these 21st century educational environments. The skills needed by the principal have been sketched and it is apparent that the instructional role, together with the skills required, provides a most challenging road into the future.

In the next chapter, the researcher will explore the research methodology used to conduct this study. The research design used, as well as the theoretical frameworks discussed, will be included in this chapter. The data collection techniques, as well as data analysis, will be presented in detail. The way in which the data will be validated as well as the reliability of the study will be outlined.

CHAPTER 3

RESEARCH DESIGN FOR THE STUDY

3.1   INTRODUCTION

Chapter two established the background to this study on the instructional role of the principal in establishing 21st century classrooms in independent schools of Gauteng. What a 21st century classroom, student, teacher and instruction is composed of was closely examined. The role of a principal as instructional leader together with the skills required to lead teachers in establishing 21st century classrooms was navigated. This detailed examination of both the role of the principal and the appearance of the 21st century classroom has given us a detailed description, which we need in order to understand where our focus needs to be aimed at in the methodology component of this study.

A qualitative research method has been employed in this research study in order to investigate the principal's role in leading teachers in establishing 21st century classrooms. The researcher has presented a detailed account of the research method and design that was used to conduct this study. In this chapter, the aim of the research, research method together with the design of the qualitative research will be outlined. The researcher addresses the qualitative sampling technique, population selection, research instrumentation and data collection procedures. Data analysis and the processing procedure together with the presentation of data will be examined.

This chapter will include the researcher's rationale in choosing the qualitative research design, the validity and reliability methods used in an attempt to ensure validity in this study.

3.2   RATIONALE FOR EMPIRICAL RESEARCH

This study sheds light on the role of the principal as instructional leader in establishing 21st century classrooms in private schools in Gauteng. The skills and focus of the principal in establishing these classrooms is highlighted. The appearance of these classrooms, as well as how they are established are explained while investigating the role of the principal, as he/she will need to have the vision and understanding of what he/she is trying to establish. A great deal of data was created as we investigated how the principal is able to lead teachers into creating these 21st century classrooms. This data differs from the information unearthed through the literature review. This empirical study gives insight into the advancement of 21st century learning in schools in South Africa and even more explicitly in private schools in Eastern Gauteng. Without this study, the information gleaned from the literature study will be a generalisation of the role of the 21st century principal in bringing 21st century learning into classrooms.

3.3   RESEARCH DESIGN APPROACH

3.3.1 Introduction

When conducting empirical research, which is research guided by evidence, two types of research designs may be used, namely qualitative and quantitative. The quantitative design attempts to establish relationships and explain reasons or causes of changes in measured social facts. Qualitative research is concerned with understanding the phenomenon from the participants' perspective of a particular situation. In qualitative research, the researcher is detached from the study in order to avoid prejudice, while the researcher conducting quantitative research become immersed in the circumstances being studied. This study was conducted using the qualitative research approach. The role of the principal as instructional leader in bringing about 21st century classrooms is understood and investigated by using the personal and professional view and perspective of the participants (Roller & Lavrakas, 2015; Yin, 2011).

The research design is the plan or outline that will be followed in order to obtain the information or data, which will then be used as evidence to explain or answer the research problem formulated in this study. It is the summary of the procedures used in order to conduct the study, included in these procedures are the when, from whom and under what conditions information will be acquired. It is the general plan of how the research will be set up, how the data will be obtained and what happens to the participants. The reason for a research design is to plan how the empirical evidence will be used to answer the questions put forward in Chapter one. Choosing the correct research design is a vital step in the research process, as certain restrictions and limitations in interpreting the results of the study can be related to the research design. The research design determines how the data will be analysed and thus affects the ability to answer the questions put forward in this study (McMillan & Schumacher, 2006).

3.3.2 Research paradigm

This study was conducted using the constructivist paradigm. Constructivism follows the view that reality is a joint product, which is formed by the external environment this is affected by the person observing and recording the conditions in which they find themselves. Reality, therefore, contains a relativist rather than an absolute nature. The researcher used the data collected to make meaning of the phenomenon under study. Opposite to this is realism, which sees the world as being objective. In constructivism we accept that a phenomenon can never be understood as being objective, instead we need to construct a common acceptance of a social activity. In this study, as with many studies conducted using a constructivist paradigm, the challenge will be to keep it consistent. Critical and reflexive practices need to guide this study, as we need to acknowledge that there are challenges and problems that arise when using this paradigm. Piaget's explanation for the formation of knowledge involves accommodation and assimilation, which ties in with constructivism. This helps us too to understand the types of teaching methodologies and environments that help children construct knowledge (Hammond & Wellington, 2013).

The researcher has chosen the constructivist paradigm, as she planned through this study to construct knowledge by using the data obtained from interviews, on what exactly the role of the principal is in establishing 21st century classrooms. In constructing new knowledge on what role the principal plays is in establishing 21st century classrooms, a comparison can be made between the established literature and the new knowledge assembled from the interviews.

3.3.3 Qualitative research approach

The focus of this study is to investigate the role of the principal as instructional leader in establishing 21st century classrooms in independent schools in Gauteng province. The qualitative research method was chosen as the most appropriate research method. The researcher intended to understand what the instructional leadership role of the principal is in order to create 21st century classrooms and this study will take place in the context within which they act. The data is in the form of words rather than numbers and this, together with the fact that the research was conducted in the natural environment, indicate the use of the qualitative research design (Yin, 2011).

According to Tracy (2013), qualitative research helps the researcher, as well as the reader of the study understand the world, their society and institutions better. It provides knowledge that targets societal concerns and questions and in this way, serves humanity. Qualitative research shows that although many interpretations are possible some are more theoretically convincing or important than other viewpoints. Qualitative research offers more than just one particular snapshot of a scenario but allows for an understanding of a sustained process. It is a rich and holistic design that focuses on lived experiences in a particular environment or context. Qualitative research shows us how reports and policies can constitute reality and affect the questions we ask. Qualitative research is in itself interactive, as the method of obtaining information involves one-on-one interactions between the researcher and the participants.

Qualitative research allows the participants views and perspectives to be represented. This may be the major purpose of a qualitative study. The ideas and events emerging from qualitative research can be represented; the meanings given

to real-life events by the people who live them, not the values, ideas and preconceptions held by the researcher (Yin, 2011). A literature study may unearth the answer to the sub-questions posed but only an empirical study will allow the voice of the participants to be heard. By the interviews conducted, the questions in this study will be given a human voice, which will not be contaminated with the possible influenced directional slanting from the researcher while undertaking the literature study.

"*Qualitative research strives to collect, integrate, and present data from a variety of sources of evidence as a part of any given study*" (Yin, 2011: 10). In this study, both the data collected from the semi-structured interviews as well as documents studied form part of the data analysis.

Qualitative research is a significant design in helping the researcher and reader of the study in understanding the personal, relational and organisational contexts of a range of research questions. Social exchanges will occur with negligible interference by non-natural research procedures, while the participants will be saying what they would like to say without being inhibited by the restraints of a research laboratory (Yin, 2011). Qualitative research is not without its challenges; the researcher may face times where the activity that is taking place may be pointless or confusing. Qualitative research can be compared to a funnel as it usually begins with a broad question where a wide range of behaviour is studied but then the focus becomes more distinct and the information less general and more specific.

Qualitative methods collect data in the form of words; these words are usually in the form of transcripts from open-ended interviews where comprehensive accounts of the participant's experiences and viewpoints regarding specific issues, circumstances or events are recorded. Documents and other artefacts from people's actions are combined with the recorded words from the interviews in order to understand the phenomenon studied more clearly. The data is then analysed in such a way to preserve the textual nature of the data. This is important, as the goal of qualitative research involves understanding the occurrence from the participant's

perspective in the particular social or institutional context in which it appears (Kaplan & Maxwell, 2005).

Qualitative research is predominantly inductive. The researcher accepts that he/she does not have enough information to form a hypothesis. The researcher does not have an insight into the perspectives and situations of the participants in their natural setting to be able to form this above-mentioned hypothesis. Qualitative research is iterative in that the researcher may go through definite cycles of data collection and analysis in order to formulate a hypothesis inductively from the data. The researcher begins with a broad question; what is the instructional role of the principal in establishing 21st century classrooms in independent Gauteng schools? The researcher then poses more specific questions and attempts to answer these questions through new data collected in the different interviews (Kaplan & Maxwell, 2005).

The qualitative research design is flexible and gradually develops over time as more information is gathered by inquiry into the phenomenon. Decisions will be made throughout the data collection process as more information is revealed on the topic under study. These decisions will be in the form of adjustments to the research strategies as information becomes clearer and a better understanding of the data collected becomes more apparent (Tracy, 2013).

Creswell (2009) outlines five different modes of inquiry, these being narrative, phenomenology, ethnography, case study and grounded theory. The case study strategy was used in this study. This mode of inquiry has been chosen, as the researcher focused on one phenomenon, which she wants to understand in depth, regardless of the number of sites or participants involved in the study.

The researcher directed her focus on one policy being implemented, namely the formation of the 21st century classroom in independent schools in the Gauteng province. The initial plan was started and thereafter the plan was an emergent design in which each incremental decision was based on the information obtained from the previous site. The researcher's in depth investigation was of only the principal in each of the schools chosen. An individual, the principal, was focused on in each of

the schools visited. This study involves individuals who have had similar experiences, namely that they hold the same position in each school visited. The process is to understand one phenomenon in each of the sites chosen (McMillan & Schumacher, 2006: 306-319).

3.3.4 Rationale for choosing the qualitative research method

In qualitative research, the researcher collects data in the field where the participants experience the issue under study. The data is gathered by talking directly to the person under study, in this case the principal, in the school environment where he/she can be observed in the place where the phenomenon being studied occurs. Documents were collected and participants interviewed, these all being characteristics of the qualitative method. Multiple sources of data were used to gather data rather than relying on a singular source. The data was reviewed, organised and categorised into themes that cut across all the sources of the data.

Inductive data analysis was used as the researcher planned to build on themes and categories from a broad perspective, until a comprehensive set of themes exists. The meanings of the participants were used to guide the analysis of data. The design is emergent, as the researcher continually evaluated the plan and was aware that it might change or shift after fields are entered, and started the collection of data. The researcher and the participant will make interpretations of what they see, hear and understand. This interpretation cannot be separated from the environment and context of the study. A holistic account of the problem will be reported. Included in this account will be multiple perspectives that identify the many factors involved in the situation. When looking at the characteristics of qualitative research, it is evident why this research method was chosen in order to conduct this study (Creswell, 2009; Yin, 2016).

3.3.5 Research problem

The main research problem formulated and stated in chapter one, can be phrased as the following research question: What should the instructional leadership role of the principal be in independent schools in order to create 21st century classrooms? The

following four sub-problems, which were derived from the main research problem and directed the empirical research of this study, are:

- What is the concept of 21st century education?
- Which 21st century instructional knowledge and skills does the principal as instructional leader need in order to lead teachers effectively?
- How can current classroom practices in independent schools be improved upon in order to be an effective 21st century classroom?
- What is the instructional leadership role of the principal in this process?

3.3.6 Objectives with the Research

The key objective of this study is to establish what the instructional leaders' role of the principal should be in independent schools in Gauteng in order to create 21st century classrooms. This main objective can be divided into the following sub-aims for the study:

- To define and describe the concept of 21st century education.
- To establish which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader, need in order to lead teachers effectively.
- To determine how current classroom practices in independent schools can be improved upon in order to be an effective 21st century classroom.
- To determine the instructional leadership role of the principal in this process.

In addition to these aims, the researcher will undertake to add to the existing body of literature regarding the instructional role of the principal. What additional responsibilities do the principal need to undertake in his role as instructional leader, in the 21st century? The researcher would like to provide a comparison between the leadership roles prior to the 21st century and compare it to the role of the principal now, as the person responsible for leading the change towards 21st century classrooms.

3.4 POPULATION AND SAMPLING

3.4.1 Sampling technique

Purposeful sampling techniques was used in this study. McMillan and Schumacher (2006) prompt the researcher to remember that purposeful sampling is a strategy whereby a small group of individuals are expected to be knowledgeable and have insight and information concerning the research problem under investigation.

3.4.2 Population and sample for the study

Eight schools' principals were interviewed in the Edenvale, Bedfordview area. Schools that are most likely to be knowledgeable about the phenomenon being investigated were chosen. The schools chosen have made 21st century classrooms a priority and they were able to provide information on what the principal's role has been in enabling these classrooms to be established. These eight schools are the sample from a population of 160 independent schools in Gauteng.

3.4.3 Informed consent

The purpose, aim and objective of this study was to find out what the role of the principal, as instructional leader, is in establishing 21st century classrooms in independent schools in Gauteng. In order to gather information from the participants, trust needs to be established between the researcher and the participants, by promising to keep the participant's identification and the name of the school confidential.

The researcher obtained informed consent from the participants through a letter emailed to them asking for permission to come into the school and interview them, as well as gain access to any documentation concerning the implementation of technology and 21st century ideas into their classrooms. All participants were given free choice of participation as required during all qualitative research studies. "*Weak consent usually leads to poorer data: Respondents will try to protect themselves in a mistrusted relationship, or one formed with the researcher by superiors only*" (Miles & Huberman, 1994: 291).

A letter was sent to the Independent Schools Association of South Africa to acquire written permission from this body. This letter outlines the intentions of the study and highlight that this study will be conducted in eight Independent schools in Gauteng (Appendix F). The letter also mentions that the participating schools have been given an email stating the intention of the researcher, as well as that the schools will be kept anonymous, as will the names of the participants. Once the school principal concerned emailed their consent to take part in the study, in other words to be a participant, formal consent letters, which outline the proposed study, were sent to all purposefully selected participants. These letters contain and delineat the following information (Appendix D):

- the researcher's background, credibility and capabilities on the research topic;
- introduction and background information on the proposed study;
- purpose and aims of the planned research;
- benefits of the study for the particular school and schools in general;
- research plan, procedures and scope of investigation; and
- researchers and participants roles were outlined.

Participants were asked to confirm that they were willing to take part in the study, giving consent by returning the signed document (Appendix D). The researcher then scheduled the interview dates and times with all the participants who have given informed consent. Participants received copies of their signed informed consent letters for their own records and should keep these letters as evidence that they have taken part in the research.

3.4.4 Anonymity and confidentiality

Tracy (2013) declares that participants have a right to confidentiality. Researchers should protect research data gathered and ensure that participants' identities are changed and those identifiers are unexposed before sharing the data with other researchers, assistants, readers or audience members. A letter explaining the intentions and purpose of the study was sent to the selected schools. A letter, seeking permission for the study, was sent to the Independent Schools Association

of South African. This letter outlines the intentions of the study and highlights that this study was conducted in Independent schools in Gauteng.

Before data collection takes place, clearance needs to be applied for with the Unisa Ethics Committee (REC). All research must have ethical clearance before it may commence. This process is to ensure that sound methodology and scientific validity are taking place. Conducting research that contains flaws is a waste of time and money as well as other resources.

3.4.5 Ethical measures and consideration

Because qualitative research is more likely to be more personally intrusive than quantitative research, ethical guidelines need to be attentively adhered to. For this reason, the researcher was extremely vigilant when considering ethical measures and considerations.

The researcher used semi-structured interviews to collect data. These interviews, with consent from the participant, were administered at the participant's school. The participants' identity and school will remain totally confidential. The following are the ethical considerations that McMillan and Schumacher (2006) suggest should be followed when conducting qualitative research. Informed consent as a dialogue, confidentiality and anonymity, privacy and empowerment, and caring and fairness.

Permission to proceed with this research was obtained from the Unisa Ethics Committee (REC). This process is a tool used to ensure that sound methodology and scientific validity is being used to conduct this study. Yin (2011) refers to research integrity in chapter two of his book. He explains that the researcher needs to behave properly and adhere to a code of ethics or ethical standards. These guides or codes apply to a person that while doing research, represents a particular profession. Research integrity can also be seen as a personal quality. It means that the researcher's words can be trusted to be truthful and that the researcher is determined to produce research that is honest and accurate.

3.5   INSTRUMENTATION

The researcher used semi-structured interviews and document (policy) retrieval as instruments.

3.5.1 Interviews

Semi-structured interviews were used as the primary data collection strategy in order to collect data on the instructional role of the principal in bringing 21st century instruction into classrooms in independent Gauteng schools. The researcher interviewed eight principals from various independent schools in Gauteng. Documentation analysis took place in order to supplement the data obtained through the interview process.

According to Hammond and Wellington (2013), interviews are conversations between the researcher and the person being interviewed, who in this study will be referred to as the participant. In other studies, the participant may be referred to as the subject or interviewee. Interviews can be unnatural conversations, as rules and ethical considerations govern the way in which the exchange takes place. Most interviews are recorded with a promise of confidentiality in order to preserve the subjects' anonymity. The value of an interview is that it allows the researcher to probe the participants' account of events with their insight, perspective and feelings toward the topic or problem being investigated. Interviews are interactive in that they allow for elucidation of questions and the identification of unexpected themes. "*Creating an interview schedule involves turning an area of inquiry into a set of questions that are meaningful to the interviewee*" (Hammond & Willington, 2013: 92).

When conducting an interview, the researcher needs to make careful use of language and avoid jargon, making sure of the clarity in which questions are phrased. A semi-structured interview was used in this study. In a semi-structured interview, the researcher has a list of questions that have been drawn up prior to the interview. In this study, the researcher deviated from the questions if emerging themes present themselves. An inductive coding structure was used to make sense of the interview. The researcher was aware that the answers given to the questions

asked could be influenced by the dynamic created between the researcher and the participant. Member checks and participant validation were used to create a more accurate account of what has taken place during the interview (Hammond & Willington, 2013; Yin, 2011).

Conducting a good interview is about more than just asking good questions. The researcher built a trusting relationship between her and the participant. Establishing a logistically feasible location for the interview is vital. Ideally, the researcher preferred to conduct the interview in the principal's office but hoped that a table and chairs were available in order to create a more intimate atmosphere, rather than the participant sitting behind his/her desk. By establishing a comfortable atmosphere, the researcher aimed at engaging in honest, open and occasional fun dialogue (Tracy, 2013).

Roller and Lavrakas (2015) outline various interviewer skills that a quality interviewer demonstrates in order to minimise inadvertent variations in the data associated with interviewer bias, which will maximise the validity and reliability of the data. These skills include:

- building a rapport with the participant;
- actively listening to the participant by demonstrating a sincere interest in their answers and asking appropriate follow-up questions;
- staying focused on the research objective but allowing for flexibility in the flow of the interview;
- being aware of verbal and nonverbal cues that add meaning to the data collected; and
- ensuring that the data obtained is accurate and complete during each interview.

3.5.2 Document Retrieval

Documents may include letters, reports, minutes of meetings, policy documents, correspondence, inspection reports, newsletters, bulletins, diaries, memoirs, oral histories and so on. The researcher used policies on technology integration and 21st century skills implementation. Minutes of meetings were also a rich source of data,

as well as correspondence between the principal and heads of phase, as the incorporation of these skills is filtered down to the classroom. Teacher training was also a source of data on the question being studied. The researcher was open at the interview process and hopeful getting access to the correspondence entered into. *"In contrast, in contemporary research, the study of documents might be complementary to other methods of data collection*" (Hammond & Wellington, 2013: 55).

Yin (2011) refers to 'collecting' as the process of compiling or accumulating objects related to the topic of the study. Most of this collecting takes place while the researcher is in the field but collecting can also take place from other sources including libraries' archives and electronically based sources. Many of the collected items can produce a variety of textual, graphic, numeric or pictorial data. "*The data can be about the physical and social environment (e.g., existing pictures of a field setting and its members but also can yield invaluable data about things not directly observable (e.g., abstract topics such as an organization's policies and procedures, as represented in documents)*" (Yin, 2011: 148). The documents collected can include items produced directly by the participants. Yin uses the example of the participant's diaries or photographs, which would then compliment the information gained from the interview with the participants.

The documents collected related directly to the sub-questions posed. How does each school involved define 21st century skills? Is there room in the definition for personal interpretation or are the definitions quite similar? Has the school identified the skills they wish to highlight in the 21st century and has this process been documented? Through the documentation, who has been the person to draw up policies and procedures regarding 21st century skills and learning? What role has the principal played in drawing up of these documents? Who has been involved in the documented communication (emails and minutes of meetings) between the management team and teachers? Is there documentation that highlights the changes that have taken place in classrooms due to the input from the principal in initiating change regarding 21st century strategies and learning? The role of the principal as the instructional leader in the school will be investigated. Is there a paper trail linking the principal to the changes towards 21st century skills in the classroom? The

documents that the researcher will be seeking are ones that help to understand the role that the principal has played in creating 21st century classrooms. The responses to the research questions asked in the semi-structured interviews should be endorsed by the documents collected. There should be a paper trail linking the role of the principal to the changes in the classrooms due to instructions or policies drawn up and communicated to teachers.

Two tactics suggested by Yin (2011) will be used to aid the data collected and document analysis process. Firstly, the researcher will get an initial idea of the usefulness of the documents collected from one site before deciding if the documents will be useful in adding to the data collected, using the semi-structured interviews. Do the documents support the data obtained and are the documents worth the time and effort taken to obtain and study? Secondly, is the material collected central and useful to the study in comparison to the other data the researcher has or will be collecting? The researcher might then decide to invest less or more time in the collection and interpretation of the documents.

3.6   DATA COLLECTION PROCEDURES

The interviews were recorded using a recording device. The recording equipment was tested before the interviews took place. Notes were taken on nonverbal communication and observations made. The researcher smiled and shook the participant's hand before the interview commenced, introduced herself and thanked the participant for their time. A brief overview of the purpose of the research and the role of the participant in the research was given. The confidentiality of the research, as well as how the results of the interview will be stored were explained. While the participant read the consent form, the researcher took time to record where the interview took place, the participant's appearance, facial expressions and any other information that might add understanding on how the participant feels about the interview (Tracy, 2013). The researcher took the time to check with the participant whether she (the researcher) has understood the answer correctly, or if she needed him/her to add more detail or clarify her understanding of the information given. Here are some pointers to bear in mind when conducting an interview (Tracy, 2013):

- Be knowledgeable about the school being entered; the structure of the leadership at the school and a bit about the main objectives and motto for the school. This may affect the value that they place on incorporating 21st century skills in the classroom.

- Be gentle and allow the participant to make mistakes and change his/her mind concerning an opinion or fact. Be careful not to cut the participant off in wanting to move on too quickly to the next topic.

- Pay attention to emotional tone of the participant.

- Try not to make judgements on where the school is at and what they have decided is the most valuable use of their time and resources.

- Probe and lead the answers when the researcher sense that there is something left unsaid or perhaps not thought of in the answers given.

- Be attentive and listen carefully making reference to earlier answers. Allow space for the participant to reflect and rephrase earlier answers.

- Be cognisant of the fact that the researcher's own facial expressions and body language give the participant messages. The researcher needs to show warmth, acceptance and neutrality in the way in which she answers or the messages that she send in nonverbal questions.

Before the close of the interview, the researcher asked the interviewee if there was perhaps anything that he/she felt the researcher had left out or that they would like to add. As the interview closes, the researcher informed the participant that a transcript of the interview will be send to them and she will ask if the participant could read the interview and respond with any feedback or add to the information given.

The researcher asked the participant for an hour to an hour and a half, depending on how busy the participant is. The researcher did not want to ask for too much time, as she was aware that this might cause the participant to avoid giving up his/her time and replying in the negative as to whether he/she would be willing to be part of the study.

Data from the interviews were transcribed into written form. The researcher has heard that some researchers pay professionals to type up the data but transcribed

the data herself so that she could start to get a feel for the emerging themes. According to Tracy (2013), transcribing decisions severely affect the meaning of the data and researchers should cautiously consider typing up their own data. An attempt will be made to find transcription software, which can be found in many qualitative software programs.

3.7 DATA ANALYSIS AND PRESENTATION

3.7.1 Data Analysis and coding

"Data analysis is the process of bringing order, structure and meaning to the mass of collected data" (de Vos, 2003: 339). In order to get the most from the data analysis stage, the data would need to be systematically organised and prepared. Analysis activities include assembling, ordering, classifying, printing and sometimes reformatting the data; the researcher can organise his or her data in multiple ways. Organising the data into intuitively named computer files where it is easy to access the files when you turn on your computer is one way. If you use multiple computers then saving all your data on a secure server where it can be easily accessed is another. Some researchers prefer to print out all the data into hard copies and file them into clearly labelled bonders.

Ordering the data chronologically with field notes and documents by their date of collection is quite a popular option and one, which appeals to the researcher's way of working. The researcher typed up the interviews and printed out the data obtained. Once this was done, the researcher created a file for each of the documents collected as well as the transcribed interview data. The researcher kept both an electronic file and a hard copy of transcripts in order to allow her to cut and paste similar emerging themes together. Tracey (2013) comments on the fact that the organisation process is also an interpretive activity; by making decisions that involve organisation, the researcher is encouraged to notice some comparisons and overlook others. Although it can be tedious, Tracy (2013) encourages the researcher to enjoy the inanity of the task and ensure that your data is well organised, as it will assist the researcher analyse and find emerging themes.

As data collection and data analysis is an inseparable relationship, the researcher revised the data collection procedures and strategies as she collected and analysed the data already collected. By being open to revising the data collection procedures, the researcher was able to collect rich data that opened up new hypotheses and provided the basis for a shared creation of reality. By this, the researcher means that new theories could arise during the analysis of data stage (de Vos, 2003). Once an interview has been conducted and the data transcribed (step one), the researcher read the transcript in its entirety several times, as this should give an overall sense of the interview before breaking it into the parts and coding it (step two).

During the analytic process, the researcher will need to have an acute awareness of the data, she will need to be able to identify themes (step three) and recurring ideas or language. By identifying common patterns, people can be linked and collective settings acknowledged. Although challenging, the researcher enjoyed this phase of data analysis as it is intellectually challenging and it is the beginning of integrating the entire project (de Vos, 2003). Data analysis is an interactive practice with the various stages being interrelated.

Coding involves labelling and systemising the data. Many different materials and methods can be used to code the data. The researcher used a combination of methods to code the data. Computer-aided qualitative data analysis software (CAQDAS) has been specifically designed for the qualitative analysis of data. These programmes provide options for organising, managing, coding, sorting and reconfiguring data. The researcher is inclined to use what she is familiar with, which is the coding using different colour and fonts, using a copy and paste method outlined above (Yin, 2011).

CAQDAS is a wonderful tool that technology has given qualitative researchers to aid in the coding of data. It would be wrong to assume that the use of CAQDAS alone is enough to create meaningful sense out of the data obtained from the semi-structured interviews conducted (Roller & Lavrakas, 2015). *"…the researcher must personally delve into the very important process of coding IDI (In-Depth Interviews) transcripts. It is only by full immersion into the development of codes and the coding itself that*

the researcher can identify the appropriate themes in the data, recognise the appropriate connections between themes, and build the appropriate stores that effectively communicate the meaning of the study outcomes" (Roller & Lavrakas, 2015: 91). During this empirical study, the data obtained during the semi-structured interviews will provide subjective answers to the research questions posed, such that a literature study could not unearth.

The coding was used to formulate a description of the setting, people, as well as the themes for analysis. It is hopeful that between five to seven themes will emerge from the data. These themes will then be used as headings in the findings section of the study. The themes should indicate multiple perspectives from individuals, which will be supported by quotes as well as documented evidence (Creswell, 2009). It is the researcher's intention to connect these themes and to establish a general description, as it is in line with the theoretical framework, hermeneutics that will be used to conduct this study.

The second-last step in the analysis process was to decide how the themes and descriptions would be represented in the qualitative narrative. The researcher used a narrative passage to convey the findings of the analysis. A table was used to convey descriptive information about each participant. The final step in data analysis involves forming an understanding or meaning of the data. The researcher made a personal interpretation of the lessons learned and drew a comparison of the change in the role of the principal between prior to the 21st century and now, where we are in the 21st century. Comparing the reality of the 21st century principal to the theory or literature read should enable the researcher to confirm past information or diverge from it. There may be new questions raised from the data analysis that the researcher has not foreseen earlier on in the study (Creswell, 2009).

3.7.2 Data presentation

As has been discussed above, the researcher transcribed the interviews and filed all documents. The interviews will provide the evidence needed to answer the research question. The final record will include the following:

- precise verbatim accounts of interviews;
- preliminary insight and comments to supplement the search for meaning;
- additional elaborations of each interview session;
- the researcher's self-reflection on her role; and
- the researcher's reflection on participants' reactions.

Data was managed manually as well as with the assistance of a computer in order to establish a system to organise data and to make it easy to retrieve. The data was selected, compared, synthesised and interpreted in a systematic process to understand the instructional leadership role of the principal in bringing 21st century classrooms into classrooms in independent schools in Gauteng.

A narrative passage was used to convey the findings of the analysis. The final step in the data analysis procedure is to extract the meaning of the data. The researcher intends to derive meaning from the study by comparing the findings with the information found in literature and theories. New questions may be derived from the data; these questions will be added to the data findings and discussed in the data presentation.

3.8   TRUSTWORTHINESS IN QUALITATIVE RESEARCH

3.8.1 Credibility of the study

Credibility on qualitative research refers to the connection between what the participants say and how the researcher interprets and describes the participant's viewpoints. In this study, the researcher ensured credibility by following the subsequent practices as explained by Creswell (2009): Triangulation was ensured by using member checking. Firstly, the researcher used semi-structured interviews and document retrieval as data sources to corroborate evidence. Secondly, the researcher asked participants to read the transcripts to ensure accuracy. The researcher was also in the field long enough to ensure credibility of the data. All procedures that were followed was document in case the research methods and processes are requested for public disclosure (Cohen, Manion & Morrison, 2007).

Yin (2011) speaks of transparency of the research. Qualitative research should be done in an overtly accessible way. The research procedures should be transparent. These procedures should be well documented to allow other people to review and understand these processes. The final study should be able to withstand close examination by others. In this chapter, the research methodology and processes have been explained in detail. Each step in the research procedure has been documented and described. An outside person should be able to follow the steps used in this study. Therefore, this study does meet the transparency criteria (Roller & Lavrakas, 2015).

Triangulation has come to be known as using more than one method in gathering data and comparing different sets of data. In this study, semi-structured interviews and document analysis were used to gather data, thus insuring triangulation. Respondent validation has been noted as a kind of triangulation in which the researcher's interpretation of the data is compared to that of the respondent (Hammond & Willington, 2013).

Tracy (2013) refers to crystallisation or triangulation as using multiple sorts of data seen through a variety of lenses as a very important way to achieve credibility. Using diverse ways of gathering data, sampling and engaging in multiple theoretical positions, make the finding of the research stronger and more reliable. Member reflection can be explained as "*allow for sharing and dialoguing with participants about the study's findings, providing opportunities for questions, critique, feedback, affirmation and even collaboration*" (Tracy, 2013: 844). Through member reflections, the researcher might be able to understand the extent to which the findings of the research are comprehensible and significant to the participant. During this process, the participant may be able to point out any problems with the analysis of the data.

3.8.2 Dependability

The researcher enhanced dependability by employing overlapping methods such as interviews and document study. The researcher also reported the research process in detail to enable readers of the research to develop a thorough understanding of the methods used and their effectiveness (Creswell, 2009). The researcher will guard

against power relations suggest by Cohen et al. (2007) by treating participants as partners.

> *In qualitative research, the researcher is directly involved in the setting, interacts with the people, and is the 'instrument'. As such, no qualitative report can exclude the researcher's own perspective, and consideration should be given to how that might have shaped events and interpretations* (de Vos, 2003: 359).

The researcher intends to give enough evidence so that the reader of this research project will accept the recounted events and accept her understanding as believable. The researcher will acknowledge her past experiences and biases that may have an effect on the interpretation of the findings.

Reflexivity is taking into account and the examining of the researchers own opinions, philosophies and judgements, as well as how these may influence and affect the research. The researcher needs to question his/her own assumptions, which may be taken for granted and needs to be examined in order to face the fact that the researcher is part of the research. Reflexivity opens up quandaries and challenges and should not only be considered in situations where there is a large impasse between the researcher and the participant but should be used in all research (Hammond & Wellington, 2013).

3.9   CONCLUSION

This chapter focused on the research design, aim of the research, as well as the planning and execution of the research project. The researcher has provided a detailed description regarding the sampling technique, data collection and data analysis procedures.

The chapter that follows this will contain the data analysis and interpretation of data.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1   INTRODUCTION

This chapter presents the findings on the instructional role of the principal towards 21st century classrooms based on the analysis of relevant school documents and in-depth interviews conducted with the principals of independent schools in Gauteng. The main aim of the study as described in Chapter 1 can be divided into the following sub-aims:

- to describe and define the concept of 21st century classrooms
- to explain which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader need in order to lead teachers effectively
- to determine how the current classroom structure in independent schools can be improved upon in order to be an effective 21st century classroom and
- to discuss the instructional leadership role of the principal in this process

Chapter 3 outlined the research methodology followed in this study and the strategies required to ensure credibility of the data gathered, as well as to establish trustworthiness of these research findings. This chapter focuses on the analysis of the qualitative data. Qualitative data was obtained from semi-structured interviews conducted with the principals of independent schools in Gauteng. The data was processed by transcribing all the interviews and analysing the responses.

Document analysis was used although this data was not as comprehensive as originally anticipated due to the reluctance of the participants in unearthing the required documents. It was the researcher's intention to ask for the required documentation prior to the interview. However, it was quite difficult to secure the time for the interviews, as the principals that were requested have pressurised job descriptions and many demands placed upon their time. Their willingness to part with an hour of their time seemed the first goal that needed to be reached.

After the interview, the researcher asked for the required documentation. However, some of the interviews ran over an hour and the time needed to talk about the documentation never materialised. It was then decided to email the researcher's request through to the principals to see if they were willing to find the time to unearth possible documents in order for the researcher to analyse these documents, to discover what role the principal plays in creating 21st century classrooms in their particular school. Every attempt was made to link the information in the interviews with supporting physical evidence obtained in documents circulated at the school. Some document analysis did take place, as some of the participants did share some of the minutes of meetings. The researcher was also able to find communication, which was available on their schools' website, between the principal, the parents and other stakeholders.

4.2   THE RESEARCH PROCESS

Data was collected using face-to-face semi-structured interviews. One interview schedule was used to conduct all eight interviews (see Appendix A). Twenty-seven questions were asked in the interviews. The interview schedule was strictly adhered to in order to obtain a consistent set of data. These questions were grouped into four sections to compartmentalise the data into main sections that were derived from the sub-aims outlined in Chapter 1. These sub-aims were expanded upon as the data was collected to include a broader look at the reality of what is taking place in terms of leadership roles in these schools.

What types of schools are being established in the 21st century and how relevant are the 21st century skills outlines to principals in these schools? There did seem to be an obvious overlap of questions in the interview schedule. It became apparent that the participants felt they had answered the questions posed in a previous question as the questions were quite closely related with very slight differences. The researcher did explain as the interviews progressed that to ensure that she had the relevant data, she needed to pose the questions quite close in content to one another. These interviews took place in October and November 2016. The schools were chosen

using purposeful sampling and those schools closest to the researcher's own school were chosen. Document analysis was also used to collect data.

Initially, after sending out Appendix C from the ethical clearance as an email to potential participants, the response was very poor. This could have been due to the timing of the first email; many of the prospective participants were attending a Head's Conference in Cape Town. The researcher did however receive one positive response from the initial emails sent. Fortified by this single encouraging response, the researcher set out to do the first interview. On arriving at participant C, the researcher's anxiety was put to rest by the easy and relaxed atmosphere of the school concerned. The participant was most welcoming and ushered the researcher into her small but cosy office. The researcher went through the points covered in the interview protocol (see Appendix B). This interview is highlighted, as it was the first of the eight interviews conducted. The other seven interviews were very similar in sequence and in the hospitality of the participants.

To start each interview, the researcher thanked the participant for their time, explaining that she knows that their time is very precious and is most grateful for the sacrifice they were making. The researcher asked if she may record, the interview and asked if they would be so kind as to sign the letters of consent (see Appendix D). The researcher explained that the interview and identity of each school is confidential. The interview then progressed with most of the interviews taking just under one hour. Once the interview was over, time permitting, the researcher would ask if the participant was willing to find any available documentation that could support the implementation of 21st century classrooms and the principal's role in it. The researcher would conclude each interview with another heart felt thank you and remind the participant that she would email the transcription of the interview once it was completed.

Participant C agreed to the recording and signed the consent forms (Appendix D). The interview commenced after setting up two recording devices (IPad and cell phone). The anxiety experienced prior to each interview decreased significantly, as more interviews were undertaken. The participants were gracious with their time and

an hour seemed more than enough time to get through all the questions in the interview schedule. Some of the interviews did take longer than an hour, as these participants gave extremely detailed answers siting many examples. Their answers were very detailed and at times deviations to the topic at hand were made.

The above explanation, clarifies how the researcher secured her first interview, from then on, short email were sent to the prospective participants explaining that the researcher was in essence asking for an hour of their time in order to conduct an interview on the role of the principal in leading teachers in establishing 21st century classrooms. The researcher would focus on two schools at a time and in securing two appointments at a time within the following week. The individual emails seemed to gain the intended response, as they were short and to the point. The second and third interview followed shortly after that. Once the researcher had secured two interview dates and times, she then sent the next two emails to the subsequent two schools that she had on her radar.

At times there was a week in between interviews but as long as the researcher had secured an appointment date in order to conduct the interview, she felt that she was making progress and would then work at the next two until she had secured the subsequent seven appointments. At one particular school, the principal of the Junior School was unavailable. Being very interested in that specific school, the researcher then approached the executive principal of the school and he was most obliging in offering an hour of his time. There was one principal of the Junior Primary (Grade 0 to Grade 3) school interviewed, the rest of the principals were from the Junior School (Grade 0 to 7).

The researcher transcribed the interviews and although a lengthy and time-consuming activity, the researcher found it to be most beneficial as the emerging themes were identified. Every attempt was made to give as much detail in the transcription as possible. Word-for-word records took place and the researcher's own words were recorded as well. Each interview was transcribed as soon as it was finished. The researcher was slightly annoyed that she made comments in response to some of the questions given. She tried in subsequent interview to limit her

comments or responses to the interview questions but unfortunately could not stop from joining in the discussion on some of the questions, especially when the answers were exciting and gave rise to a new direction of thought. One of the participants said that she enjoyed the interactive way the interview was conducted and felt more encouraged to lengthen her responses in response to the researcher's remarks. The researcher was reminded of the characteristics of qualitative research, which is for the researcher to immerse herself in the field and to form relationships with the participants.

Many of the participants were unwilling to take the time to find emails, correspondence or teacher-development notes requested. There seemed to be a reluctance to share minutes of meetings or correspondence undertaken between teachers outlining the instructional role of the principal in many of the independent schools. The researcher was hoping to find documented evidence of the instructional leadership role of the principal in establishing 21st century classrooms in the schools chosen. Minutes of meetings or notes from teacher-development meetings conducted by the principal would then indicate his/her strong instructional role in establishing these classrooms. The researcher did manage to find some supporting documentation in the correspondence between the principal and the parents, which supported the findings from the interviews. These documents were found on-line by examining the various schools websites.

Some of the participants felt threatened by the request for an interview and were reluctant to take part, requesting the interview schedule before the interview took place. Once the interview began, the participants relaxed and it was evident that the participants felt comfortable and peaceful. Part of this was due to the conversational tone set during the early phases of the interview.

Trustworthiness of data was ensured by implementing the following strategies. Interviews were transcribed to ensure that the words said and the correct meaning was represented in the transcription. Reliability of data was enhanced as participants were asked to review the transcript on what was heard during the interviews. None of

the participants reported any fault with the data transcription. The researcher was in the field long enough to ensure that the data is credible.

Initially, 27 questions in the interview schedule seemed excessive, as the questions posed were closely related to one other. Due to this, the researcher was able to spend the necessary amount of time with each participant, which allowed her to get a good overall impression of the principal's main emphasis and about what he/she was most passionate.

The researcher made sure that certain measures of trustworthiness of this research were observed throughout the study. This assisted in avoiding bias or distorting the data collected. Detailed notes were obtained, as the interviews were recorded and detailed transcription took place. The interviews were recorded using the participant's own words. The researcher has documented the research procedures with as much detail as possible. An outside person should be able to follow the steps used in this study.

4.3   DATA ANALYSIS

4.3.1 Introduction

In-depth face-to-face interviews were conducted with the participants selected for the study. The participants include a sample of school principals in the Gauteng area. This section presents the findings from the data obtained.

4.3.2 Biographical data of participants

Table 4.1: Gender of participants

Gender	Male	Female
	3	5

Table 4.2: Age of the participants

Age	Frequency	Percentage
20-25		
26-30		
31-40		
41-50	1	12.5
51-60+	7	87.5
Total	**8**	**100%**

Table 4.3: Professional Qualifications of the participants

Qualification	Frequency	Percentage
Doctorate		
Master's	4	50
Honours		
Further Diploma		
Bed		
BA		
4 year H.Dip.Ed	2	25
3 year diploma	2	25
Total	**8**	**100**

Table 4.4: Management experience in the current post

Experience	Frequency	Percentage
0-5 years	1	12.5
6-10 years	2	25
11-15 years	1	12.5
16-20 years	1	12.5
21+ years	3	37.5
Total	**8**	**100**

Table 4.5: Boys, Girls or co-ed schools

	Frequency	Percentage
Girls School	3	37.5
Boys school	2	25
Co-ed School	3	37.5

Table 4.6: Head of the Junior Primary, Junior School, Senior School or Executive head

	Frequency	Percentage
Executive Head	1	12.5
Senior School Head	0	0
Junior School Head	6	75
Junior Primary Head	1	12.5

4.3.3   Analysis of data obtained from interviews

Table 4.2 shows age distribution statistics, which clearly reveals, the majority of principals are between the ages of 51 to 60 years and older. Table 4.1 illustrates gender distribution and suggests there were more female principals that male principals in the schools selected for the study.

Qualitative data uses words rather than numbers to explain the role of the principal in establishing 21st century classrooms in independent schools in Gauteng. The research was conducted in the natural environment of the participants. This design is rich and holistic, as it focuses on the lived experiences of the participants. Qualitative research is itself interactive, as the method of obtaining information involves one-on-one interactions between the researcher and the participants.

Despite the fact that there are four sub-aims present in this study, the researcher has chosen seven sub-heading with which to analyse the data. This was a deliberate choice by the researcher to ensure the data collected was detailed, as well as covered each avenue within each sub-aim. Sub-heading one addresses both sub-aims one and two. Sub-heading two covers sub-aim three and four. Sub-heading three covers sub-aim two and three. Sub-heading four deals exclusively with sub-aim four. Sub-heading five deals only with sub-aim two. Sub-heading six covers sub-aim three and sub-heading seven deals exclusively with sub-aim four.

4.3.3.1 Data regarding the principal's perception of the concept of a 21st century classroom and his/her vision in establishing such classrooms

This section required the participants to explain their understanding of what 21st century skills are and their definition of 21st century education. Participant A explained, 21st century to him is making sure that he feels the need to focus on inclusivity, multiculturalism, diversity and social justice. Student centeredness, alternative learning paths, collaborative learning and global awareness are just some of the thoughts that come to mind when 21st century education is mentioned.

Participant E explained the dilemma of providing a concise definition of 21st century skills and education as follows: "*I think the first thing that needs to be said is I think*

21st century in education is a bit of a buzzword, people are using it in quite a loose broad all-encompassing way." Participant F agreed with this in her statement, "*It is such a wide question, that's why I was interested to hear what your focus was going to be because that is going to make it very wide.*"

Due to the broad nature of this question, the researcher has chosen a table format to highlight the words and phrases used by the participants to highlight the main thoughts and definitions of what the participants felt their opinion of what 21st century skills are and what 21st century education should look like.

Table 4.7: Words and phrases used to describe 21st century education, skills and classrooms

Participant	Words and concepts used to describe 21st century classrooms
A	Inclusivity, multiculturalism, diversity, social justice, student centeredness, alternative learning paths, collaborative learning, global awareness, problem solving, critical thinking, creativity, flexibility, innovation. Communication is vital; we need to establish the human factor in the midst of all the technology. Have we forgotten about people? Technology and the use of smart boards and tablets. Good teaching must be the starting point despite the introduction of technology. The need for basic values has remained essential.
B	Development of the kind of attitude and character traits that will allow you to be a success in any realm when you leave school. Being a successful contributor as an adult. Being able to grasp opportunities that come your way, being a self-starter, good people's person, adaptability. Having a growth mind-set to believe you can achieve despite your circumstances. Teaching persistence, resilience and grit, as these seem to be vanishing. In the age of technology have we forgotten in our schools that students need to process difficulties in order to grow?
C	The most important thing is to teach children to think. To think laterally, to ask questions, to discover. How do you find information and how you use your information. Use technology to reach children. Stimulate, ask, discover. Ask the question, why does this work like this? Using Blooms taxonomy. Where? Why? Compare. Do not give information; teach them to look for information. Scaffold and build on previous knowledge.
D	Collaborative learning, out of the box thinking, critical thinking, application of knowledge. Up to date with local and global events, bringing in these discussions to daily classroom conversations.
E	Independent work, critical thinking, the ability to analyse, ability to draw predictions. Moving away from content towards skill, move away from content to much higher order thinking.
F	A different view of child. Child is competent, capable. Listen to the child's thinking and deep penetration learning using projects, investigations and research. Making thinking visible.
G	The use of technology is important but our ethics and values imbued in Christianity are vital. We need to focus on the whole child who encompasses spirituality, academics, physical well-being and emotional well-being. Respect for others, especially in the use of technology. Job has not been invented so we prepare children for the unknown. Critical thinking in the form of a new programme is highlighted as the way forward in the way in which the thinking skills are addressed.
H	Skills and behaviours are equally important. They are interlinked. Building character throughout our school activities. Knowing thyself is pivotal to human success. Self-grounded, self-motivated, self-disciplined. Conversations. Allow children to have a voice. Speaking to others with respect not tolerance. Self-regulation is key. Making time for others.

After reading the above, it becomes apparent that the definition of 21st century education is as wide as it is broad. Each participant had to think about the skills he/she felt are essential in the classrooms of their schools in today's educational climate. Some participants felt the need to give as broad a definition as possible to encompass all the skills that one could possibly need in the 21st century. Others felt that a short and focused viewpoint of what 21st century skills and educational practises are would help guide their focus when aiming to implement these skills.

What is interesting to observe in the above loose definitions is that each participant interviewed knew exactly what the words 21st century imply, as well as the skills that go alongside this definition. It is however necessary to add here that participant H did not site one or more of the usual four C's (communication, critical thinking, creativity and collaboration) in her definition but rather highlighted the behaviour that she wished to be emulated by the students in her school in the 21st century. "*Skills and behaviours I would put them together okay? I believe they interlink or the one feeds the other one. The first thing that we drive or try and through our assembly, through conversations, through our meetings, is character building. And what do we define as character because that's at the essence of everything. And we feel, alright, pivotal to any human success is 'know thyself'. So you have to be self-grounded, self-motivated and self-disciplined.*"

Participant G expressed the opinion that although technology does come into the 21st century classroom at this particular school, ethics and values are prised above all other 21st century skills. "*I think they need to be critical thinking human beings with a high value system*" (words taken from participant G's interview). This view of values and ethics being vital in the 21st century will be revisited at a later stage in this data analysis.

Participant F describes 21st century skills in terms of the view of the child, *"it's all about a view of the child, so in terms of how you view a child as being competent, capable and you listen to the child's thinking and deep penetration learning and projects and investigation and research".* In the 21st century, the understanding of the students that we teach changes; this in turn will then inform the role of the

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teacher as well as how teaching is carried out. *"The teacher will set up provocations for learning to inspire children and not just feed them"*. Included in this participants definition of learning in the 21st century is the four C's. By changing our view of the child, we inspire the child to think and use different methods of guiding learning, the teacher is the facilitator of learning using techniques like collaborative learning, which then encourages the four C's.

Regarding the participants' visions for a 21st century learning environment, the following descriptions were established:

- **Participant A:** Values are stressed where a humane school with high spiritual values, where each child is valued and nurtured, is the main priority. The old-fashioned values of humility, hard work, discipline, patience, kindness and good communication continue to be of paramount importance. Tenacity, grit, cutting edge IT skills for jobs, join together to become the main vision of the school where child-centred education with problem-solving skills are produced.
- **Participant B**: Boys (as this is a boys only environment) finding their identity and not feeling the pressure of being a stereotype of what a man is expected to be. Every student feeling empowered to be a success, success being of their own definition.
- **Participant C**: Embracing a different way of learning, one in which children are encouraged to think, to use their brain. In order to do this, a new philosophy of teaching and learning has been introduced in this participant's school.
- **Participant D**: New programmes are identified which encourage critical thinking and together with the use of different forms of technology encourage a new way of learning. Teachers need to be up to date with current affairs both local and global. Facilitating conversations about local and global affairs is vital in the participant's vision of their 21st century environment. Collaboration between teachers teaching in different fields is commonplace in this school.
- **Participant E:** Although a more collaborative environment is encouraged one in which interactive group work is encouraged the dangers of having a vision of only creating a 21st century environment was discussed in detail.

- **Participant F**: Teaching and learning has to be looked at in a different way. The implementation of a different philosophy of learning and seeing that practice take root has been this participant's vision in creating a 21st century learning environment. Being aware of global best practice and making a shift towards those practices is the vision that this participant has embraced and put into practice in her school.

- **Participant G**: Has a vision where students are taught how to create their own philosophical questions. The teacher as facilitator supports the students thinking, reasoning and questioning as well as the way the students speak and listen to each other in dialogue. After the enquiry, the students and the teacher as facilitator reflect on the quality of the thinking, reasoning and participation and suggest how they could improve. Bringing in this approach to learning has an impact on the cognitive, social, and emotional development of the students and is the way forward for this school.

- **Participant H**: A vision for the student-citizen that will be created at the end of the schooling process is the vision of this participant. A citizen that is able to analyse, understand, contextualise and make appropriate judgements is envisaged. Being capable of conducting successful relationships where respect is given and received is of utmost importance in the vision for of this participant.

In expounding on the vision, view of direction to be moving into, of the participants in establishing 21st century classrooms, the researcher hopes to get a clear understanding of how these classrooms may change from the classrooms prior to the 21st century. Many of the participants had as part of their vision for the classroom practice of their school, an aversion of the 'old regime'. The teaching and learning methods prior to the 21st century were teacher centred; chalk-and-talk methods where the teacher had the power and controlled both the content and direction of the flow of the lesson. Content was stressed and technology as a tool was not predominant. The 21st century view of how the classroom should function is summarised in the points below:

- A militaristic or controlling style of teaching or delivery where the teacher imparts knowledge to the 'empty' vessels is not encouraged.

- The physical layout of the classroom should not communicate any form of linear functioning. Teachers should move away from placing their desks in rows, be creative in your classroom layout.

- Classrooms need to be dynamic spaces. Physical components of the classroom need to be able to be moved around so that different structures can be used at different times to facilitate different lesson formats.

- Conversations need to be happening at the appropriate times and the students need to be able to have the freedom to interact with one another in the learning space.

- Students should be able to engage with the teacher and there should not be an impartation of knowledge from the teacher to the students. Teachers should elicit knowledge from their students and these students should share their knowledge with one another. Teachers need to be fully engaged with the students, *"…the teacher needs to be at the level of the micro-instructional leader in his or her classroom and get excited about the topic and engage with the children and then you will get the best results"* (Participant E).

- There is a time and a place for a quiet classroom but generally there should be *"A buzz, you need conversation, you need discussion, you need collaboration…"* (Participant C).

- The view of the child has to be altered in the minds of teachers. *"So how do they go in and see the children in their class? That I am the boss here and I will tell you exactly how you are going to learn or I am the facilitator of your learning and I am going to hear what you are interested in and how we can guide that to your learning"* (Participant F).

- *"The chalk-and-talk methodology is not encouraged as a main method of interacting with students"* Participant G).

- The aim of teaching is to have more 'teacher facilitated' lessons, which require greater collaboration amongst the children and where group-work is encouraged. *"The aim is for the children to lead the way, being guided by their teachers. Of*

course, formal teaching up to a point does need to happen, but it needs to be kept to the minimum" (Participant C).

Participant E brings a vital reflection and new thought path to our definition of what a 21st century learning environment should look like, as well as what skills should be reflected in the 21st century classroom. Although he agrees that there should be a more integrated and collaborative environment in our schools, we must heed the threats that an environment solely based on 21st century skills brings:

And another danger of 21st century environment in that definition is that it appeals to your extroverted learners, whereas I think that at least half the population are introverts and I don't think that this environment really appeals to that style of learning and I think that anybody who's trying to create that environment needs to bear in mind that the skills typically associated with the 21st century learner are often associated with your extroverted learner. Whereas your introverted learner will be lost in that. I am not saying that the introverted learner should not be brought out, encouraged but I am saying that they should not be forgotten.

Participant E brings a different slant to the 21st century vision for our 21st century classrooms. One in which collaboration, communication and endless group work and projects is advocated, but not advocated at the exclusion of time for individuals to reflect and work at solving problems and thinking critically in activities made for one. "*We must never discount the value of introverted quieter people, for those people to learn well they need peace and quiet and they need time away from other people*". This participant's vision for a 21st century environment is one where we ensure that the individual learning-needs of all the students are accommodated as far as humanly possible. He goes further in explaining that his vision is one where we move away from content-based education where students who had strong visual memory and who could regurgitate content where able to excel. As centres of learning, we need to realise and accommodate other types of learning styles. "*We are looking for new skills now; unfortunately, the ways of manifesting those skills are often linked to the extrovert type of character.*"

4.3.3.2 Data regarding getting teachers and stakeholders to buy into the vision that the principal has for their school in the 21st century

Part of the instructional role of the principal in establishing 21st century classrooms is to lead the teachers and stakeholders towards the ideology of these classrooms, also known as the vision for these classrooms. He/she would have to have the skills necessary to lead both teachers and other stakeholders in the direction of these classrooms. Before 21st century classrooms are established in reality, they begin with a vision/dream of how pedagogy in classrooms can be different. The principal having this vision alone cannot accomplish the physical change that needs to take place. Leading his/her teachers is one of the many skills that the principal will need to accomplish in his journey towards 21st century classrooms.

In creating 21st century classrooms, we have established that the first step is for the principal to have a vision for the classrooms in his schools to reflect 21st century skills and learning. Once this vision has been well defined, the principals then need to get this vision across to their teachers and stakeholders in their schools. Getting teachers to be connected with the principal's vision is vital to the success of a school. Participant B explains it this way, *"Look, alignment is everything really, if you want to have a successful school. So you have got to get your teachers on board and understanding and internalising."*

The word enculturation is used by participant B to describe the process that needs to take place amongst the teachers in order for them to change their attitude, beliefs and behaviours towards more 21st century skills and in creating a 21st century learning environment. Enculturation is the process by which a person learns the traditional content of a culture and assimilates its practices and values. In order for the teachers in a school to buy into the vision of the principal, the principal needs to be persistent and use the right language on a continual basis. Participant B explains, "*So it is persistence and it is using the right language and drawing on whatever resources you can to keep that vision steady. It is not allowed to sink beneath the details of the day, which I think can be a little bit tricky…*"

Participant D has a unique way in which teachers are encouraged to live out and work with the vision of the school. This vision has been translated into a set of criteria in an appraisal system. This appraisal system is transparent. Participant D explains, "*It is broken up into rubrics; you can see what is expected of you so you can be a very effective teacher. You can be an effective teacher without having the stars and stripes of technology but you will never be highly effective or exemplary.*" The vision of the school and the expectations tied to the vision are communicated openly to the teachers. Being current and knowing what is happening globally, an important criterion in the 21st century classroom is lived in this school. In order for it to be classified 'exemplary' or 'highly effective', he/she needs to embody the vision for a 21st century environment.

Participant E gives a brief summary of four ways in which the principal's vision can be made important and a priority amongst the teachers, who then bring that vision into the classroom practices:

- Teachers need to know what the vision is and why it is important.
- Whenever the opportunity arises, the principal will revert to the vision, outlining why a certain teacher-development session is taking place or why something is being carried out the way the principal has chosen to do it.
- To identify and applaud champions. To use teachers who demonstrate good classroom practices, which fall in line with the vision being outlined by that particular school.
- *"And use every opportunity that you can to talk to and reflect on it, and I think the biggest buzzword that is true; you have to get a degree of 'buy in' and the best way to get 'buy in' is for the leader of the school to be an instructional leader and to live it. When I teach or I do an assembly I demonstrate those skills."*

In the schools of participants C and F, a new philosophy has been introduced. This philosophy has as its foundation in the attributes common to 21st century classrooms. This philosophy is the vehicle for bringing in both the vision of the participant and the participant's definition of the 21st century classroom. Both participants identified the philosophy, were responsible for the teachers being

trained, as well as bringing this philosophy into their classrooms. In both these schools, the teachers were trained in the vision of the participant through in-service training. In participants F's school, the teachers are educated as to what the vision for the learners is and then pressure is applied in order for them to shift their practices by providing learning opportunities for them. Participant F explains, "*So they can grow their practice, and to not move away this is what we are going to do and we are going to get there and it is your decision on how you join us on that journey.*" The vision permeates throughout the teachers in the following ways:

- Attendance at conferences is made possible by placing substitute teachers in their classrooms to free them up. Through these conferences, teachers align with other teachers globally and work with these teachers on projects. This collaborative work then changes or shifts their practice.

- Books outlining the theory and practice of the new philosophy are downloaded to the individual teachers' IPads. The teachers will read the book so that they have the theory underpinning the practice of the new philosophy. Once the teacher has understood the philosophy and the practice that comes from the theory, the next step can take place.

- Experts are brought in locally and from overseas to work with the teachers in order to train them in the new philosophy brought in by the principal, which is based on the vision the principal has for his/her school.

- Other teachers observe the shift in the practice of teachers trained on the new philosophy, as well as how this training has changed their teaching, affecting how their students enjoy the new way of learning. These teachers then want to change the way they are 'teaching' to get the same response from their students. Participant F explains it as follows, "…*and when you see the shift in their practice, it is just incredible that more teachers want to do it because they see how excited the children are to learn that way, because it definitely shifts your way of thinking.*"

- Teachers present to each other in staff meetings about the practices they have used, what they have developed and what they have learned.

Participant E and F bring in Michael Fullan's (2011) writing on change leadership. In order to establish the vision of creating 21st century classrooms and getting the teachers to follow and believe in that vision, the principal needs to refer to theory and good practice of change-leadership leaders and authors. Michael Fullan's (2011, 29) key insight number two states, "*Effective change-leaders combine resolute moral purpose with impressive empathy*". Both of the above-mentioned participants are resolute in the desire for change in the direction of 21st century classrooms. They do however possess 'impressive empathy', which allows them to realise that there will be those teachers who will disagree with the change required or who are apathetic. Getting teachers to follow the principal's vision for a 21st century environment, requires both resolute purpose and respect for the perspectives, teachers and stakeholders who are opposed to the vision of the principal.

Many of the participants use professional development as a tool to bring in the vision of the principal. Teachers are encouraged to attend courses and bring in speakers in order to create a platform for the discussion of the vision and possible change that needs to take place. In participant G's school, they have a team of teachers who's responsibility it is to look for and organise professional development for the teachers in that school.

In participant H's school, the vision of the school begins at the employment process. It begins with an interview and then the applicant spend three days in the school where their teaching style is observed and where the applicant can get a feel for the culture and practices that take place at the school. The vision of this particular school is communicated via the application process at the school. This school has as its foundation authenticity from the principal who lives the vision and ethos of the school. There is transparency in this school as to what the vision is:

And do they always agree? Possibly not and most likely not, but I am very consistent right, and I articulate that which I believe in and they know what I believe in and I speak to the vision of the school and they know what the vision of the school is, as do the pupils, as do the parents. And there is one direction. They know where we are taking the school to…

4.3.3.3 Data regarding how the principal creates the environment in order for teachers to create 21st century classrooms

In this section, the researcher was interested in finding out how the principal attempts to ensure that the environment he/she creates is conducive to fashioning a 21st century classroom. Environment in this context is the surroundings or conditions in which a teacher operates. It is not the physical settings but rather the climate that the principal creates.

The researcher was hoping to limit the responses of the participants to a few main approaches but once again, the data received indicated so many varied attitudes to establishing an environment where 21st century learning can flourish. The researcher would like to provide a quote from each participant, which indicates how they view the word 'environment' and how they go about creating an environment allowing teachers to bring in 21st century skills and learning.

Participant A: *"Freedom and trust and tons of support. I mean an appraisal is sitting you down and saying, so how can I help you? Our job is to cut the red tape. Protect them from the deluge of stuff that interferes with what you have to do. They are overwhelmed by red tape, by nonsense, by difficult parents, by over-assessment and we have to protect them from that. My job is to allow them to work."*

Participant B: *"So you have really got to create a safe space, a well-resourced space, and I suppose a professional atmosphere that everybody is learning; the teachers are learning, the kids are learning and its fine."*

Participant C: *"I think that you have to allow the teachers, I have a very young staff and they are technologically savvy and you have to let them."*

Participant D: *"We have good budgets for staff training for courses, for life skills courses for the children and in our levies, we also put on critical thinking courses that parents pay or studies skills courses we get a lot of external help and there is a huge budget for staff training. Meaning we can send them to Cape Town, we can send them overseas."*

Participant E: *"There are critical items. The first one will be, they need to be skilled themselves. Secondly, they need to be exposed or encouraged to understand why this is important because if they don't buy into the reasons behind the change, they don't understand the rationale; there is no motivation to do it and then we need to create a collective expectation of why we are doing this. So an environment is critical and it has to be driven in terms of a whole school philosophy, otherwise it will fail or it ends up being segmented and some are doing it and some aren't, some think it is a good idea and some could not be bothered. You may have to go so far as to be slightly more policy driven but I think it is a mind-set change and that takes time."*

Participant F: *"If you are saying environment in terms of spaces, then it is about what is it that the teachers think they might need more of? What would make that learning space happen for them? Bearing in mind that a lot of this philosophy that we use is all about the use of natural resources, natural setting and as much recycled stuff as possible."*

Participant G: *"They know that I encourage them at every turn to use their creativity. I mean we have structures that reign us in unfortunately, but they understand that I am backing them up and I am their cheerleader."*

Participant H: *"There is no fear; I don't care what my teachers do as long as they do. Alright, our children know that our parent body knows that. You want to tell me today that we are going to stand outside and cook using the rays of the sun, go for it, as long as it is planned, I am very happy."*

Some of the participants create an environment conducive to 21st century learning by supporting their teachers. By encouraging them to upskill themselves and by providing the resources they need in order to do this. Others give their teachers the freedom to bring in their own ideas. One common theme in this subsection is that each participant believes fully in allowing their teachers to take risks. Each participant was happy for their teachers to try new methodologies as long as:

- the planning and preparation was done;
- it was not reckless, endangering the students;

- they learned from other teachers who had tried something similar; and

- they were prepared to identify the reasons why it had not worked so that they themselves and other teachers could learn from their process.

In allowing and even encouraging their teachers to take risks, each participant established an environment where 21st century learning can take place. One of the components of the 21st century classroom is establishing a classroom climate where students feel supported in taking responsible risks in their thinking and in their problem solving. Critical thinking is based on taking risks and following diverse thinking patterns. Teachers in the 21st century are encouraged to mirror the behaviour that they seek in their students. Participant B explains it like this, "*We believe in teachers practicing what we preach. So there is no point in having the habits of mind that says take responsible risks and then the teacher is not empowered to, because someone like me, who says you have got to do it my way.*"

4.3.3.4 Data regarding the instructional role the principal plays in managing the school

Here the participants responded with three basic responses. Response A was that the principal's primary role was to be the instructional leader of the school. Response B was that the principal had so many roles to fill that the instructional role was delegated to experts who lead that role in that particular school. Response C was that the principal did take the lead in terms of the instructional role but it was not their primary or most important role. Response A elicited six positive results, response B produced one result and response C provoked one outcome.

This quote from participant B explains in a very concise way the findings of this study in this area. *"I believe there are different schools with different headmasters who have a different focus and I am okay with that. I am an academic. I have been a teacher and I have taught every year of my life and that is what I believe is my area of expertise so I am not a businessman, I don't see sport as the way to a boy's development, it is important but I am an academic and this is an academic school."* This principal believes so firmly in his instructional leadership role that he still teaches a few classes at his school. He mirrors what he expects from his teachers

and ensures that he remains in the right conversations due to his teaching role. *"So yes, absolutely, academic excellence, strategies and change and creativity is for me."*

Most of the responses indicated that the principal's primary leadership role in the school is instructional. Participant A explains his reasoning for his role as follows, "*You have to let your experts in their field run with the instructional role and entrust them to do their best and like I have said, that is only part of it.*" Participant A is the Executive Head Principal of a school and as such, has the responsibility of overseeing the smooth running of the entire school; his school is small and as such, his duties are varied and many.

Participant G explains her role as follows: "*I don't think that it is my only role, I do think that it is an important role though.*" When the role of the principal is so varied, some of the instructional decisions and instructions are delegated to key members of the support staff in a school.

The data collected in this vital field is clear. *"I believe, in a primary school, the head of school needs to know what is going on academically, needs to know the curriculum, needs to have taught because it is very hard to tell a teacher I want this and you have never been in a classroom, and it ticks a box in admin. In our system, it has failed dismally, the administrators as in primary schools, I think in a high school it is a different role completely."* Participant D reiterates how important the instructional role of the principal is.

Participant E speaks of Philip Hallinger's research on the instructional role of the principal, *"and his argument, and he had done quite a lot of research that points to that successful schools have successful instructional leadership and the principal of the school needs to be the instructional leader and I feel quite strongly about that. So I would rephrase your question and say that it should be the primary responsibility".* Participant E explains there is a difference between a curriculum manager who can work out the day-to-day timetables, reports and teacher allocations; the principal needs the support of curriculum managers, while he/she remains the instructional leader of the school.

4.3.3.5 Data regarding what principals must know in order to lead teachers in creating 21st century classrooms

Leading a team of teachers in establishing 21st century classrooms is a daunting and demanding task. Many aspects need to be considered when looking at the skills and knowledge required. Chapter two of this study outlines two main references on the instructional knowledge and skills required in order for the principal to lead teachers in establishing 21st century classrooms; these are ISTE (2009) and Demski (2012). The ISTE outlines five standards that administrators, in our case the principal, need to pay attention to in order to bring 21st century learning into the classroom and Demski provides seven habits that effective Tech-Leading principals need to bear in mind when thinking of 21st century classrooms.

Being a connected learner (Demski, 2012) is one of these aspects. Being a connected learner means to be powerful, relevant and engaging (EdTechReview, 2014). This approach means that the principal knows what is happening in the ever-changing world of information and knowledge. Being current by reading new materials and practices is essential in the constantly changing dynamics of education. Teachers in the 21st century need to be current and relevant. In order to do this, the teacher needs to emulate this practice in their classrooms. This practice begins with the principal, as he/she is the beginning point for the avocations of the lifelong, connected learning.

This aspect of being a connected learner was addressed in question 16. 'Are you a connected learner? What impact do you think being a connected learner has on your staff members?'

All the participants agreed that reading widely, being in touch with best practice, and allowing the people around you to challenge and grow you is essential in order to lead a team of teachers in establishing 21st century classrooms. *"I think that it is my responsibility to constantly make them aware of new ideas and what else is out there, otherwise I could be stuck in a little bit of a rut and I will have no way to tell others not to be."* This quote from participant B summarises one of the most vital skills and practices that the principal must possess in order to lead teachers in the

21st century. In order to have the vision to lead his/her teachers, the principal's vision must be informed by up to date, relevant and dynamic educational practices.

How does this translate into practical practices? Participant E has the following to say, *"Even if you just read one article a term, open up your thinking… if I come across a good article that will be useful to the staff, I email it to then and I really encourage them to read it and some do and some don't."* He goes on to say: *"I think if you bombard them every week, that does not work either but from time to time, twice a term, maybe three times if I really find something cutting edge. I will say have a read and some, bit by bit you get more converts, but it takes time."*

More than just mirroring the attributes of a connected learner, the principal has many other roles and parts to play in supporting teachers in bringing 21st century skills into their classrooms. The researcher would like to outline each participant's view of his/her role and the necessary skills and knowledge they need to possess in order to support their teachers in this fundamental adjustment that is taking place in classrooms in independent schools in Gauteng. The researcher would like to begin with what the principal feels he/she needs to know, as well as move on to how they see their role.

Participant A: Feels he would need to have an overarching vision for his school. This skill is mentioned by the ISTE (2009) as vital to the principal's role in establishing 21st century classrooms. Participant A explained it is of vital importance that he further needs to be up to date on what is happening, academically and practically, at other schools. Demski's (2012) habits of being a connected learner and communicating with others in the educational field is worthy of a mention once again. This participant knows what other schools are investing in, what has worked and what has not. Being up to date with the latest developments, through reading and attending conferences, even if he chooses not to follow these trends, is essential in ruling out some practices while looking into others.

Participant B: Feels that it is essential for the principal to understand that everyone must work together, from the board members down to the teachers. The principal needs to know what the focus is. At his particular school, the focus is that the

students need to learn essential, real skills, which are encompassed in 21st century skills. He needs to know that what he says and thinks every day is in line with the belief system of the school.

Participant C: This principal feels that principals need to be flexible in terms of allowing their teachers to explore new methodologies. An added advantage would be for the principal to have technological skills and to understand how technology works in education. "*Many older generation principals tend to favour methodologies that they used when they were start-up teachers, which are no longer relevant to today's children.*" She feels that principals need to attend as many courses and workshops possible that offer support with the latest technology.

Participant D: Feels very strongly that the principal needs to have personal experience of classroom practices before expecting their teachers to change their pedagogy if they themselves are unable to carry out these changes. She concludes, "*If you can't model what you want, how can you expect it from someone else*?" Participant D feels that it is her role to facilitate opportunities and to communicate expectations.

Participant E: Thinks that he, as the principal, needs to lead by taking the lead, not by being theoretical in his ideas for change but by knowing how this change will appear. "*It falls back on one of the most fundamental principles of leadership and that is led by doing, lead by example, walking the journey with, as opposed to pointing in the direction and saying you get there I will come along at some point. It's about leadership.*" His role in helping teachers bring in 21st century learning is to communicate his thoughts and vision concerning experimentation with new ideas in different subjects. It is not only about the configuration of the desks, although that does come into it; it is about creating an 'inviting environment', by creating an environment where the students are inspired to be creative and stimulated to think differently.

Participant F: "*Principals need to know what is happening in education globally. You can see the amazing work that happens because you can become quite narrow-minded and narrow-viewed about education in our country, so it is good to have a*

bigger picture and connect more widely." Participant F is confident of what the principal needs to know in order to lead her teachers in establishing 21st century classrooms. Her instructional role takes up about 50 per cent of her time, as she meets with her teachers every two weeks. During this time, she shares her knowledge of global practice and gives her teachers time to reflect on their classroom practice. Her role is one of providing support for her teachers, as they navigate new paths in teaching practice. She inspires and encourages them on their road to continuing to establish and maintain 21st century classrooms as they try new and innovative methodologies. She concludes, *"Also when we find something exciting, you inspire them to see how amazing this is and how the kids benefit from it. It's not just for the sake of doing it".*

Participant G: Knows the needs of her teachers and provides for these needs by investing in finding the right people to help, support and guide them in meeting their objectives in creating 21st century classrooms. This participant provides the resources and infrastructure and man power that enables her teachers to be innovative and creative in their classrooms.

Participant H: Understands that principals must *"know that education is dynamic and it changes throughout the day. They must listen to the pupils and then needs of the pupils and what is relevant".* By dynamic, this participant means that education is characterised by constant change, activity or progress. If she understands this fundamental fact about 21st century education, she is able to behave in such a way to help her teachers remain relevant and meet the 21st century needs of the students in her school. Participant H's role is to keep the conversations between herself and her teachers open, so that through the lines of communication between them, ideas, expectations and new paths of thought can be explored. This is vital if the school is to remain relevant to the students who attend it.

The response of the participants is quite varied. Some participants feel that leadership in the 21st century begins with a vision for the school. In particular, a vision for the classroom practices of the teachers and for the 21st century environment. Each participant understood the need to be a connected and lifelong

learner. Attending courses and reading widely to be aware of the practices in their immediate environment, as well as globally is stressed. Flexibility in terms of methodological practices as well experience in classroom practices is vital. Leading from the front and not just pointing in the desired direction gives teachers the security in knowing that they do not navigate this 21st century road alone. Inspiring the teachers and supporting them in their 21st century endeavours are essential in motivating them to reach outside their known and understood practices and try new and innovative practice.

4.3.3.6 Data regarding the perceptions of principals regarding the role technology plays in establishing the 21st century classroom. His/her role in the provision of this technology

Participant A feels that technology has given teachers a different dimension or tool that can be used in the classroom. He feels that technology has changed the process of learning, as it is less about learning the information than it is about using the information. Participant B agrees with this summation but adds, "*I think we will constantly navigate a path that says we want to use technology for this, for it is the best tool for this but we are not going to use technology indiscriminately for everything because we don't believe students are learning the best through that instrument all the time*". Being comfortable with the use of technology and knowing when and how to use it is vital but there should not be an over reliance on technology. For example, a student should not only be solving problems using information technology, they should have the skills to be able to solve problems without the use of information technology. Participant B goes on to add that technology can be used as a great collaborative tool if used for that purpose. Giving each student and IPad and ear phones can be used once in a while, but generally we should rather the students do research together while having conversations about what they have found out. In this way, technology can be used to share, explore and problem solve with other students.

Participant C feels that technology has and is playing a vital role in the transformation of classrooms into 21st century learning areas. Through this quote, we can understand how much technology has affected the learning environment, "*Learning has had to change. The children today have access to all sorts of technology where information is only a swipe away. They are used to getting instant gratification and they too get bored very quickly. If we don't stimulate them in the classroom and maintain their interest and focus, we will lose them. Teachers need to make use of technology, upgrade their methodologies and remain relevant in today's world*". Participant C goes on to explain that we do however need to take heed, as with this new tool, students are exposed to danger. The students in our classrooms are able to access subjects and visuals that are not always appropriate. We as teachers need to be aware that the students that we teach may be far more advanced in certain areas due to technology. Although technology is a vital part of the 21st century classroom, it is not the only way to bring in 21st century skills. Again participant C explains, *"And so, ja, technology has its place but it's not everything, it's a small part of it. It's lovely to get the imagination going and to look up stuff, so for education it's lovely, but the other part of communication and analytical thinking. This is working, we are thinking, this is analysing, comparing, different, same, similar, the kids are using the words"*.

Participant E agrees with participant C about the importance of technology in the 21st century classroom but his warning is slightly different. In his schools, IPads are used as a learning tool but he explains as follows: "*So I think that if they are used as a pedagogical tool to enhance learning then they have value. If they are there to kind of keep them busy then there is no point because they get more than enough screen time. So if it adds value and it helps them to develop a skill, or hone a practice then it is good.*"

Participant F adds valuable insight into the balance that needs to be created in the classroom. How technology is a valuable platform for learning and it is essential that this instrument finds its place in the classroom but we cannot discount some of the other tools that need to be used.

Ours is not that we only use technology, it is just another tool. So the teacher can decide how they do the different things. So if they use IPads for something or whether they are going to use computers, whatever they are going to use, make a space where they are going to sit and create. Whether they are going to use videos however they decide. Use the old making a poster, building a model, it's not all about technology. But it is important that children can work on different platforms in terms of learning, so the digital platforms the apple IPads, which is what we use, or you can use the usual word document because they learn all of that so you can be flexible and use various learning platforms.

Participant F does acknowledge the importance of technology in establishing 21st century classrooms but stresses the need for not only to use technology in creating 21st century classrooms but the way in which we 'teach' needs to be addressed. This quote from her is insightful, "*I think that it is all about teaching technologies rather than technology in teaching*".

Participant G echoes these words in her interview, reiterating that the students in her school use many different platforms to create and use to aid their thinking and present their ideas. What is important in the 21st century classroom is the ability to think critically and for the teacher to use the right questions to stimulate that thinking.

One of the overarching themes that have presented itself in this study is highlighted by participant H when asked about how the pedagogical practices of her teachers have been affected by technology in her school. She states,

We have not fully embraced it. Our reason, we feel it's a tool and I know everyone does speak to that, but we feel no matter what IT you bring, if there is not that relationship you are not going to achieve anything. And I think that is the philosophy that underlines everything that they can use as much technology as they want but at the end of the day it's the teacher who will touch the child, who will go and sit next to the child, who will say I am so proud of what you did today… that's what makes teaching. Because technology can sometimes alienate instead of…

Participant E concurs with participant H that no matter how advanced we get with our technology and how our teaching practice changes to fit into the 21st century definition and practice, we cannot allow the relationship between the teacher and the child to be negatively affected. Participant E shares his thoughts:

> *I don't care how much technology you have got and I don't care how fancy your smartboard is or how well resourced your library is, if your teacher is not the centre of in the sense of not necessary the holder of all the knowledge but is centre to the learning process particularly in the prep school, then we are losing something. Because a lot of learning comes out of the relational aspect… If they have a rapport with the teacher, they will work harder for her and the opposite is also true, so I think that the centrality of an environment where people are respected, that is the kind of old fashioned values and I think that needs to remain.*

Participant A, early on in the interview, had the following to say about the teacher student relationship: *"And relationships are very important. Relationships. And we are not a factory, know the child's name, the background, the family… It's important to get the emotional support from the teachers and I think it is becoming much more important because of how busy it is and how frenetic it is and IT is so in our faces and the old fashioned things are still important… some things will never change".*

A second overarching theme was presented early on in the interview process by participant A. He believes that no matter how advanced we get in our use of technology and improved pedagogical practices, we cannot ever let go of the need for basic human values. Honesty, integrity, reliability, diligence, kindness, loyalty, to name a few, were stressed by participants A, G and E, while the absolute necessity of respect and respectful interactions was the underlying vision of participant H's school.

All principals had, as part of their portfolio, to provide the resources needed by their teachers. Most of this provision takes place through the approval of budgets. Participant A remarks "*I exist because of them and what they need within reason.*" One of the primary responsibilities of the principal is to lead the allocation of funds to

obtain the resources needed by the teachers to effectively bring in 21st century classrooms. Budgets are approved by the board of governors, which includes but is not limited to the finance department of the school. Participant H explains the process of securing funding for teacher resources as follows:

I approve the budgets so we set budgets. The way I run budgets, each department meets with their team so the subject meets with their department/faculty, they determined the needs of that faculty for the following year. They then have a conversation with either the foundation phase head or the academic head and they submit their budget to me and the motivation to it and I read through them and most times, very few times will I cut anything off and if I need to cut, I will call the department head and I will ask them to take me through it. You need to see what you can do and what is not possible.

Each participant was somehow involved in providing the technological resources for their teachers. By approving budgets and listening to their teachers the principals play and instrumental role in ensuring that their teachers had the right equipment to enable them to use technology in the appropriate way to establish 21st century classrooms.

4.3.3.7 Data regarding the additional responsibilities the principals perceive that they have in leading schools in the 21st century

Participant E feels that change is happening at an unprecedented rate. Leading change is one of the most difficult things that you will do. Leading a school where structures are firmly in place requires less leadership than leading a school into a new dispensation, where the rate of technological and informational change is at a rate of knots. "*So I think that heads have always needed to manage change but I don't think ever at the rate of change that far surpasses anything that you have had to deal with in the past and I think that is the biggest responsibility*".

Participant F supports this view of the additional responsibilities that the principal needs to undertake in their leadership role in the 21st century she says, "*The shift in technology, you have to stay on top of that and actually investigate long-term effects, is there research on what is happening in that field".* Due to the accelerated rate of information and research, principals need to keep abreast of what is taking place, as well as keep their teachers informed as to what the current practice indicates. This places a tremendous amount of pressure on the principal as the instructional leader, as they need to stay current.

4.4   DATA OBTAINED FROM DOCUMENT ANALYSIS

The participants were not forthcoming with documents, which could be analysed. The time constraints of the participants due to the time of the year that the interviews were conducted were apparent. The researcher was hoping to gain documents that would support the findings of the interviews in answering the sub-question: What is the instructional role of the principal in establishing 21st century classrooms in independent schools is Gauteng province. The researcher was expecting the documents provided, to point to the role of the principal as the instructional leader in bringing 21st century learning into the classrooms.

The researcher did manage to gain some documents from nearly all of the schools' visited web sites, which allowed her to gain insight into the role of the principal in establishing 21st century classrooms in independent schools in Gauteng.

Participant B's school website was rich in the way of articles and newsletters, which indicates the involvement of the principal as the instructional leader of the school. The parents were included in the vision for establishing 21st century classrooms and thinking in the school. If the principal is involved in bringing the parents alongside the teachers in understanding the thinking that the school is promoting, then it is certainly logical to assume that the principal is highly involved in bringing the teachers' thinking in line with 21st century skills and learning, which would then affect the classroom practise of those teachers.

One such series of newsletters contained relevant and exciting content, which referred to many 21st century terminology and jargon that the researcher has encountered in reading on 21st century learning environments. Terms such as 'growth mind-set', 'grit' and 'perseverance' are used to explain to both teachers and parents (who are made reference to in these newsletters) what the current research tell us. Keeping both parents and teachers informed of current practice and research, indicated that this particular principal is sharing his vision with teachers and parents in leading his school towards 21st century classrooms.

Both the weekly newsletters and the special newsletters focusing on how academic theory can affect practice, contain insightful and relevant information, which will affect both parents and teachers in their outlook on how classrooms in the 21st century should be conducted. These documents are most insightful in unearthing the role that the principal plays at his school. Sharing of the recent and up to date research with both parents and teachers leads us to believe how dedicated he is to his instructional role.

While looking at some of the documents posted on participant F's website, the researcher came across a letter written to the parents by the principal. In this information brief, it is apparent that the principal plays an integral part in the instruction at the school and that this instruction is towards 21st century classrooms. The principal explained the academic slant that the school will be undertaking and gave a brief insight into the vision of the school. She explained that the aim of the school is to prepare their students for both the changing world and the working environment in this world. She outlined that the student will be presented with a curriculum that is holistic, relevant and rigorous.

One of the characteristics that is being emphasised is resilience. The school has made every effort to research and apply the best international practice in their school in order to provide quality teaching and learning. One of the aims of this school is to assist their students in understanding the world, as well as how and where they fit into it. Through their curriculum, students will be empowered to find answers to global issues. This letter ties in very firmly to the data collected at the interview. This

document does indeed support the discovery that this principal is deeply entrenched in the instructional practices at the school and these practices are towards 21st century classrooms.

A document found on participant G's website supports the findings of the interview. From the vision and focus to the instructional role of the principal in this school, it is evident that this school is consistent in its beliefs and focus. The Christian values of this school are a vital part of the emphasis at this school, but so too is its commitment to bringing in the skills so prevalent to the 21st century classroom.

Although this participant is very committed to her instructional role at the school, she has ensured that she has employed the right people to assist her with the needs to create 21st century classrooms. One particular document on the school's website supports the data on this particular fact. What is evident though is that this particular principal is well aware of needs to establish 21st century classrooms and is willing to acknowledge that she does need the support of knowledgeable and talented individuals who are able to assist her in her instructional role.

Once again the data is supported by the documents found on participant H's website. The vision and ethos gleaned from the interview is strongly reinforced by the documents discovered. This principal believes in her instructional role in heading up the teaching and learning practices at her school, she is still involved in the classroom, but the overarching goal of this school is to promote the individual growth of each of her students. Part of this growth includes the 21st century skills and knowledge such as critical thinking, problem solving and fostering independence, but very importantly, is for each student to understand and know themselves, as it is through this avenue that they will learn to respect others.

Participant C kindly sent through some of the planning documents that her teachers use to plan their lessons. These documents indicate how the principal is involved in the preparation meetings of her teachers and how the teachers are bringing in 21st century skills and learning into their classrooms. These teachers meet together with the principal on a Friday afternoon and together they work out their preparation for the coming week. Scaffolding of concepts is discussed, as each grade builds on the

foundation of the grade before them. Lessons are analysed and successes and failures of lessons for the week are discussed. The principal is involved in these planning sessions and gives direct feedback to her teachers. Being privy to the meetings means that the principal is very quickly aware of what training and input these teachers may need in order to bring 21st century skills into their classrooms. This principal has a very strong instructional role in her school.

4.5 DATA INTERPRETATION

4.5.1 Participants' view of 21st century classrooms

The first and most exciting observation was discovered early on in the interview process, as many of the participants gave their definition of 21st century skills and education. Although the definitions were broad, it was clear that the participants understood and were able to verbalise their understanding of 21st century education. Not all participants articulated every aspect of 21st century learning, choosing to focus on the needs of their particular environment and the focus to which they were narrowing their emphasis. Participant A, E and G spoke of the necessity for values to remain a priority and as part of their 21st century emphasis, they mentioned the character traits of perseverance, grit, and determination. Participant B includes in his description being a self-starter and he too refers to persistence and resilience as part of the essential emphasis in 21st century classrooms. Participant H highlighted the need for respectful behaviour, knowing how to conduct oneself within conversations with other people, really listening to others and using empathy to understand where they come from.

Reference is made to the four C's of creativity, communication, collaboration and critical thinking. Participant C and D outline the need for a different way of thinking, which can be stimulated by asking relevant and different kinds of questions. Many of the participants point out that learning content is no longer our aim. Content, which is referred to as information, is widely available and with the advances in technology, it is easy to access. How to find information and then how to synthesis it is now the skill we want to see exercised in the classroom. Participant C, D, E, and F mention

the importance of knowing how to use information to solve problems. Wessling (2010) describes 21st century learning to be learning that marries content to skill.

None of the participants discounted the need and usefulness of technology in the 21st century classroom. Many agreed that it is a useful tool to stimulate thinking and access information. Most of them agreed that it is not to be used to keep the students busy but if used correctly, it could be used as a platform to inspire thinking, including higher order skills such as critical thinking, creativity, communication and collaboration.

Both participants C and G referred to cultural awareness and mentioned that their teachers do a good job of making sure there is cooperation and understanding between different cultures at their school. In participant C's school, being culturally aware is a whole school vision, as they take part in various ceremonies and dress up days to promote the students' awareness of other cultures.

The role of the teacher and the part the teacher plays in the 21st century classroom was interesting and there were many factors, which the participants had in common. It was undisputed that the role of the teacher as the dispenser of information and knowledge was no longer relevant. The chalk-and-talk delivery with the desks formatted in rows is no longer encouraged. Knowledge should be elicited from the students through carefully posed questions that are progressive in structure. Participant E described how the educational experience of each learner should be personalised as far as possible (Schleicher, 2012). Participant F echoed the work of Blair (2012) and Palmer (2015) in her believe that it is the view of the student that has to essentially change; students need to be seen as adding value to the learning experience. Research has shown that teachers need to allow students to be more actively involved in their learning, which then leads to engagement in learning that is more effective (Quinn, 2002).

In general, all of the participants interviewed have a broad knowledge of what a 21st century classroom should look like and what it entails. Some gave more detailed explanations than others did and their outlook was broader. Other participants narrowed their definition and focused on certain aspects in order to constrict their emphasis.

4.5.2 Instructional knowledge and skills needed by the principal in order to lead teachers in establishing 21st century classrooms

Demski's (2012) list of seven highly effective Tech-Leading principals is mirrored in the schools visited. Each of these habits was seen, albeit in different ways, at each school. Through the questions asked in the interview schedule, it is apparent that each participant was well read on this topic, as well as knew what the important emphasis was in bringing 21st century into the classroom. The researcher will revise the list of these habits:

- creating the right environment is vital;
- foster collaboration;
- be open to new ideas;
- being a connected learner;
- locate and provide adequate resources;
- take risks; and
- have a visionary focus.

It became apparent as the interviews progressed that each participant is acutely aware of how important the learning environment is to the teachers in their school, not only for the students' learning but also for the teacher to learn and grow. For only through the development of the teacher can classroom practice be affected. Many factors are involved in providing the right environment, starting with the absence of fear of making mistakes and of taking risks. Challenging teachers' thinking and practices and providing just the right amount of pressure to change, ensures an environment that is conducive to the growth of the teachers. It could easily be sensed in each school visited that the environment created was one in which the teacher could adapt their teaching practices towards 21st century classrooms. Each of the

eight participants had created a non-threatening environment where the working environment for the teachers was conducive to trying new approaches and the support and encouragement for teachers to advance technologically was apparent.

In each of the schools visited, teacher collaboration per grade and per subject is a major priority. This was done by blocking time-periods to ensure that the teachers were able to meet, discuss and collaborate. Each participant agreed that unless time sessions were booked, the intention to set up meetings might be there but would never materialise. While some participants are more conservative that others in being open to new ideas, none of the participants were anti new ideas brought from the teachers. One participant did say that at times she felt she needed to be the voice of reason in pointing out practical limitations and perhaps budget constraints to some of the new ideas posed. Most, if not all, the participants are open to ideas and welcomed the more techno-savvy teacher to bring forward ideas and lessons that had been particularly successful.

Each of the participants interviewed could be defined as a connected learner. Once again, there is a continuum on which each one could be placed. From the pursuit of a doctoral degree to the participant who would read up and pass on articles of interest to their teachers, each participant would be able to meet the definition of a connected learner.

Although Blair (2012) explains that developing a 21st century environment is not about money, there is a hefty cost involved in buying the resources and setting up the infrastructure to cope with the demands of technology, which is part of the 21st century classroom. Each participant agreed that creating a 21st century classroom is not just about technology. Participant C explains this in a very concise way, "*And so ja, technology has its place but it's not everything, it's a small part of it. Its lovely to get the imagination going and to look up stuff, so for education it is lovely, but the other part the communication and analytical thinking is vital*". Participant H uses a comparison between 21st century classroom practice and food. "*It's like when you give a child food. When you put a plate of food in front of a child or in front of anyone you are not just going to put starch there, you are going to have starch and protein,*

you have got your vegetables and you are going to have different colours and then you're going to have the dessert, it's the same thing. IT is part of the meal that you serve; it's the serving that is the most important. It's part of the delicious treats on that plate." All of the schools visited were able to supply technological resources and infrastructure for their teachers. Once again, there were those that had budget constraints that could still provide a great deal of resources, while others chose not to commit to much into that aspect of their 21st century environment.

It is important to add that Wells (2012) elucidates that 21st century learning does not have to be dependent on technology alone, it can be realised in the way teaching and learning is conducted. Technology in itself does not define the 21st century classroom; it is a tool to aid students in their enquiry and communication. Despite this research, it is evident in all schools visited that technology is being used to help create an environment where students have available to them the tools to access information and to do diverse things with it.

Blair (2012) believes that developing a 21st century environment is about having the right mentality. The principal needs to be proactive in making 21st century needs a priority, empowering teachers to use technology and establishing a shared vision that is accompanied by a plan. These three attributes of a 21st century instructional leader have all been found to be present in a greater or lesser degree in the schools visited. They have also been discussed under various sub-headings, aiming to understand the instructional role of the principal in establishing 21st century classrooms.

All participants acknowledged that they have a vision for their school. Many of these visions included but where not restricted to the pursuit of 21st century classrooms. The participant's vision is communicated to the teachers at staff meetings, using current articles, through professional development and assemblies. In some cases, it is communicated through the appraisal system and one-on-one meetings with individual teachers. It is apparent that each participant knows where to lead his/her teachers. Yes, there are support people around these participants who take on some

of the organisational tasks but in the majority of the cases, the principal is at the helm where he/she leads teachers towards their vision.

ISTE (2009) outlines five standards that leaders need to pay close attention to in order to bring 21st century learning into the classroom. In order not to duplicate, the knowledge or skills needed by principals in order to bring 21st century learning into the classroom, the researcher is going to highlight only two of the standards that have been mentioned. The first is 'Excellence in professional practice'. Part of creating the right environment for 21st century learning to take place means the principal needs to empower teachers to challenge student learning through technology and the use of digital apparatus. This standard has two implications for the principal.

Firstly, he/she must provide the training for the teachers to be proficient in the use of technology and the resources needed for students to use during these challenging lessons needs to be provided. In each of the schools visited, the principal played a strong role in providing resources for their teachers. In most of the schools, the principal is involved in ensuring that their teachers are receiving training in the use of technology and has found the human resources to empower their teachers in being able to challenge their students. The researcher needs to mention once again that all the teachers at each of the schools visited are at different stages in their technological advancement. Some are exceptionally proficient while others are able to do the basics and are still being trained at a slower pace.

The second standard that needs mentioning is 'Digital citizenship', two factors under this point need to be discussed. The first is the principal needs to have a good understanding of the social, legal and ethical matters that arise from digital culture. In each of the schools visited, the principal not only had an excellent idea of the social, legal and ethical matters that arise from digital culture but he/she had a policy in place in order to regulate these practices. Secondly, the principal should promote a shared cultural understanding and be involved in global issues using digital communication and collaboration. This point was not apparent in any of the schools visited.

Through the above discussion, it is evident that the principal requires quite a few diverse skills and knowledge in order to lead teachers in establishing 21st century classrooms. Each participant has a unique assortment of 21st century skills and knowledge. Some favour one aspect and only touch on another but as a whole, the participants were quite knowledgeable and able to apply these skills to create an environment conducive to establishment of 21st century classrooms.

4.5.3 Determining how current classroom practices have been improved upon in the direction of 21st century classrooms

In answering one of the sub-questions posed in chapter one, we look to the data collected on what changes are taking place in classrooms towards establishing 21st century schools. In establishing 21st century classrooms, certain characteristics need to be included while others are excluded.

The Partnership for 21st Century Skills (Fabel, 2008) outlines the abilities listed below as being essential for the teacher to effectively teach 21st century students. Many of these abilities are outlined by the participants as already taking place in their schools. Some did point out that not all their teachers were at the same juncture when it came to implementing 21st century skills and abilities. The points listed below were found to be prevalent in many of the schools visited in varying degrees. The researcher has attempted to marry the point with the school or schools where these practices were evident. In order to prove this point, some examples of the practical application of these points were given. At times, it is evident that although there are examples of these practices, the schools enforcing these points are in the minority.

- Using technology together with content and teaching methodology; creatively using this technology to meet learning needs. In participant G's school, technology was used in conjunction with content in a Biology lesson on the 'Snail'. Students were given the content on the snail and had to use an information technology application to present the information. They could use 'Page' or 'Pop lit' or give the presentation using a little page of knowledge and facts. In participants C's school, the Grade Two teacher consolidated the facts learned about space by assimilating a 'Journey into Space'. The desks were

cleared and two rows of chairs were arranged. The lights were dimmed and the students, wearing their space masks, prepared for their journey, 'Apollo 14', into space. They exhibited all the characteristics about space that they had learned such as G force and zero gravity. This lesson was one example of how technology was used together with content to create a 21st century teaching methodology. The examples given are two of many that were collected during the interviews. Most schools could site many opportunities the students are given to marry technology and content, most using the technology to present the content but the focus being on skills being developed using technology.

- Giving a balance of direct instruction with project-based collaborative teaching methods. In participant E's school, direct instruction is encouraged as a way of introducing or scaffolding a topic. "*There is direct learning where there are opportunities to introduce different learning styles. Sometimes there is a bit of a talk and less do, sometimes there is a scenario, put up a picture, put up a statement and let them work with it. It must be that the teacher facilitates to a point where they bring out the learning, where they lead the learner, as it were as opposed to expecting it just to happen*". In most of the schools visited using only direct instruction as the only method of teaching, was minimal. Some older teachers favoured direct instruction as the primary method of instruction but this was not very prominent in the schools visited.

- Using the knowledge of adolescent and child development in preparation of lessons and education policy. Both participants F and C have prepared their teachers for a new way of thinking in education by giving them the theory behind good practice. The teachers have read up on the reasoning behind the practices before bringing in new practice. Participant G has brought in a new philosophy for children and in teacher-development. The reasoning behind this philosophy draws on studies done on these philosophies to reinforce these practices. Not every school was as forthcoming in this area; while some are trying to bring in new practices and methodologies, the theory behind the practice is not always highlighted. The empirical findings reflect that approximately 40 per cent of the schools visited used the knowledge of adolescent and child development in preparation of lessons and education policy.

- Using a wide range of assessment strategies in order to evaluate student performance. Participant H believes that students should be evaluated in a number of different ways. Oral assessments and assessments where teacher observation takes place have been investigated and encouraged. Participant F has outlined some of the different ways in which her teachers document the students' work. These techniques allow the student to be assessed in different areas and in different ways, thus giving the individual learner more chance to show their thinking. In most of the schools visited, assessment strategies are similar to those prior to the introduction of 21st century teaching methodologies. Although there have been thoughts towards changing the way in which students are assessed, the move towards revolutionising assessment strategies and the reporting on those assessment still reflect the formal assessment where students write tests and examinations. Assessments where students are observed interacting in a group situation or answer a mathematics question orally have been thought of, but in most cases, they have not become normal practice. This could be due to the overall system of education in South Africa where the students need to write a set of formal examinations in Grade 12 in order to move from school to university or college. Schools feel they need to prepare children in this manner of assessment so that they are not disadvantaged when they write their final examinations.

- Actively participating in the learning community by using the expertise contained within the school area by coaching, knowledge sharing and mentoring. Participant D's school believes so strongly in this statement that it is built into the school's appraisal system. An exemplary teacher who is not willing to share their expertise will not be given an exemplary outcome. "*Part of our appraisal to be exemplary are you sharing your knowledge, are you mentoring, are you collaborating?*" Teachers are expected to mentor and share their expertise not only within their school but also at all the campuses that belong to the brand of schools. In participant H's school, ideas are shared and colleagues mentored by using 'impact' lessons. These lessons take place where the entire grade is situated in one venue and each of the five teachers take a turn to deliver a segment of the lesson. In this way, each teacher is able to observe his or her colleagues teach in

a non-threatening environment. Participant H explains: "*To allow the children a taste of how the other teachers teach and the other teachers, to have an understanding, without being threatened, of collaborative working with the other teachers.*" The above examples do not indicate what is taking place in the majority of the schools visited. Some schools, approximately 40 per cent, do encourage mentoring and knowledge sharing, but this not common practice.

- <u>Making use of a wide range of strategies to reach and teach students with a wide variety of learning styles by creating an environment that supports different ways of teaching and learning</u>. Participant E made it part of the vision for his school to try as far as possible to accommodate the learning styles of his students. "*I think that if you want to be true to the 21st century and what that means, I think, it is making sure that the individual learning needs of all the children are accommodated as far as humanly possible.*" Although in theory the vision of many of the participants is to accommodate as many of the learning styles of the students as possible, it has not translated into practice.

Arrington (2014) explains that both in the democratic and the 21st century classroom, students take risks and give their own views on a topic while being respectful of the views of others. The classrooms described by Arrington were classrooms in the independent schools in Gauteng. Participant H has as her main vision of the growth of her students. They should be able to put forward their own views with confidence, taking appropriate risks, but listening to the views of others as an acknowledgement that each person brings something unique to the conversation and to respect this fact while being able to put their own thinking forward. The classrooms that are established at this school allow for forward thinking individuals to voice what they feel is necessary to influence and affect the environment around them. *"Our children are bold, they have voices and we listen to those voices, and you know if you go up to any child in our school one thing they will say to you is we have a voice and we are allowed to use it."* She adds, "*What is a healthy relationship? A healthy relationship comes back to a respectful relationship. I am as you are we both bringing a lot into this space, we might not like each other but we need to respect not tolerate; we never use the word tolerate, you don't tolerate you respect*".

Although at times, the abilities outlined by the P21 are not evident in all of the schools visited, an understanding that we are educating a diverse student who has a voice and needs to be heard is understood. At all of the schools visited, there is a common understanding that today's students have an opinion and thought process that needs to be heard and that is valuable and essential in the learning process. Participant F's school is an outstanding example of this essential ingredient in the 21st century classroom.

Fable (2008) explains that what we are in essence doing when we advocate 21st century learning is to fuse the traditional three R's with the vital four C's, which are critical thinking, creativity, communication and collaboration. In order to create this environment, technology needs to be placed into the hands of these students who then use this technology to problem-solve, make decisions, work in teams and be innovative with their ideas. Many, if not all the schools, where the principal was interviewed had as part of their vision the use of technology as a pedagogical tool to help students to think critically and to aid in assisting the teacher to ask the relevant questions in order to promote this type of thinking.

Henderson and Hawthorne (2000) believe that change needs to take place at the centre of educational practice where students made decisions about what they feel is important. In participant F's school, due to the change in the view of child, the student is placed at the centre of the educational process. The progression of the lesson follows the thinking of the student. This practice takes place at participant C's school as well. Many of the teachers at participant C's school use the questioning of the students, and answers presented, to lead the progress of the lesson. Allowing the student to lead the direction of learning and to make decisions was more the exception than the rule in the schools visited. Allowing the students to direct learning through questioning is a skill that teachers would need to acquire so that lessons do not go off in a tangent, which is not in the best interests of the students.

One of the criteria identified by the Metiri group (Capuano & Knoderer, 2006), as one of the skills needed by the 21st century student, has been highlighted by participant B. Self-direction, the ability to set goals, plan for achievement, and independently

assess the quality of ones learning and any products that result. Participant B says: "…*So it is not about school and being successful at school, it is more about being a successful contributing adult when you leave and are you in the right position and have the right mind set to grasp the opportunities that come your way, being a self-starter, initiate projects be a good peoples person I think the word adaptability is hugely powerful.*"

Many of the schools visited are aware that being a self-directed learner and students taking responsibility for their learning is a main goal in the 21st century classroom. Giving the students the opportunity to discover and grow their independence is a work in progress, in most schools visited, and can be a challenging one to apply, as this means that the students need to escape the comfort zone established by the teacher and feel the discomfort of being in control of their own success. At an independent school, one of the challenges faced is that the parents may have the expectation that the teacher is to constantly monitor and support the student so that they do not feel discomfort or distress.

A second criteria identified by the Metiri group is global awareness/cultural competence. This criterion was highlighted by participant C and G. Participant C explains, "*We try and teach our children… so now we are an Anglican school but we celebrate everything at this school. The children need to learn so when it was Chinese New Year we decorated the school with Chinese lanterns and we did a whole thing; we got dragon dancers in, we did dress up day and we taught them to eat with chop sticks.*" Participant G reflects, "*Our primary school teachers are wonderful at creating respect for other cultures and religions…*"

Through the data obtained from the eight schools visited, two schools highlighted the need to embrace the cultural difference in their school and in the wider global community. Whether this was due to the absence of questions asking directly for this information or the absence of this practice taking place has not been established; it could lead to a different study.

Throughout the standards and skills mentioned in this segment of the data interpretation, there seems to be a common thread. Students are required to be fluent in the use of technology while displaying high order skills such as critical thinking and problem solving. Every school visited has introduced technology into their classrooms. Some were further along than others in the use of IPads and individual instruments used in the classroom. A few of the schools had purposefully held back on introducing technology in its full capacity, as the vision they had for their 21stcentury environment did not warrant 100 per cent use of technology throughout the school day. One such environment was participant H's school. She outlines their philosophy as such, "*We have not fully embraced it. Our reason, we feel it's a tool and we know everyone does speak to that but we feel that no matter what IT you bring, if there is not that relationship you are not going to achieve anything*". At this school, problem solving is highlighted through a focused lesson facilitated by the principal. Therefore, despite the fact that there is technology use in each school visited, some are using it to a greater degree than others do, but each school has highlighted the use of problem solving and critical thinking in their classrooms. Participant B's perspective is as follows:

> *Okay, I think we are just at the beginning of a technological journey and the way that we are changing, so I think that there are other schools that are further down the line. But it depends on what your intentions are, because some schools are deliberately high-tech and some deliberately low-tech for all the right reasons. I think that we will constantly navigate a path that says we want to use technology for this, it is the best tool for this, but we are not going to use technology indiscriminately for everything.*

4.5.4 The instructional leadership role of the principal in establishing 21st century classrooms

When looking at the role of the principal as instructional leader, in independent schools in Gauteng, the data is clear; the majority of principals are making the instructional leadership role in their school their main priority. Fullan (2010) states that principals, who are effective and influential, are obsessed with the instructional

core of personalising learning and getting results for each student. They make instruction a priority. These principals are first, and foremost, teachers who share in the goal of educating students to the utmost academic standards possible. Despite participant A not being the instructional leader of his school, due in main part to the varied leadership role that he fulfils, he does make it his priority to know and monitor the progress of each one of the students in his school. Many of the participants felt passionately about their role as instructional leader, making it not only a priority but also their main priority.

Wilson (2008) outlines three actions that he feels an instructional leader must do in order to be effective. He must understand the instructional design language used in most schools. This will aid him in talking to teachers with clarity and gain their support. He must also model the operative practices that are used in teaching and learning situations. Lastly, he/she needs to provide his/her teachers with the tools they need to be effective in the classroom, and have the knowledge on how those tools work, which he would then pass on to the teachers. When looking at the data, it is clear that 75 per cent of the participants are the instructional leaders of their schools. Participant B explains his role, which is perfectly in line with the three actions that an instructional leader portrays:

> *I have been a teacher and I have taught every year of my life and that is what I believe is my area of expertise. So I am not a businessman. I am an academic and we are an academic school. I think that it is essential that I role model that perspective to my staff. When I expect teachers to work with mark books, I have to work with mark books. It gets me in all the right conversations because I am still teaching, which I think I would lose out in if I wasn't.*

Participant E makes it a priority to model the behaviour he would like to see reflected in his teachers and practiced in their classrooms. He uses opportunities like assembly and in his own teaching; he articulates the practices he would like to see brought into the classroom. Participant H is still involved in the classroom; she too models the desired teaching practices and is involved with her teachers in

instructional design and language. Participant D was a teacher for many years before becoming the principal. Starting at the interview process, she believes the principal needs to have extensive knowledge of the curriculum; this enables the principal to be in conversations with their teachers.

Each of the participants under study helped the teachers gain the resources they need in terms of books and technology supplies. There are budget constraints but none so rigid that it stood in the way of their teachers using technology inside their classrooms.

Lunenburg (2010) explains how, when the principal is the instructional leader of the school, he/she will ensure that professional development is brought into line with his/her vision and goals for the school. Each of the schools visited made time for the professional development of their teachers. It is interesting to note that the stronger the role of the principal as instructional leader the more prominent they were in bringing in professional development topics through guest speakers or teachers that had been on a course and were giving feedback. Not all of the participants were involved in the professional development of their teachers. They would approve the topics under study but would not be the main initiator of the topics under review or the guest speakers invited to present. When the participants did arrange their teacher's professional development, 90 per cent of the topics under study were towards establishing 21st century classrooms.

The instructional leader provides the concentration and course that the teachers would adopt in their practices involved in teaching and learning goals. Many publications agree this is the direction that the instructional leader should take towards establishing 21st century classrooms (Capuano & Knoderer, 2006; Wilson, 2008). In most of the schools visited, when the principal was leading his/her teachers in their teaching and learning practices, the focus is towards establishing 21st century classrooms.

Marishane and Botha (2011) describe the role of the instructional leader as being able to regulate, organise and oversee teaching and learning activities. In the schools visited, although the principals are strong instructional leaders they did

delegate some of the organisational tasks to their heads of departments and deputy principal. Participant E explained that he would like to make a distinction between an instructional leader and curriculum manager. The curriculum manager takes responsibility for the day-to-day running of the school, for example setting the timetable, checking the teacher's schedules, overseeing the printing of reports and other practical aspects. The curriculum manager would also do much of the paper work and perhaps things like book checks and ensuring that teachers' files and preparation is in order. Many of the schools visited had various support systems beneath the principal so that he/she is able to focus on being in touch with the overarching vision and aim of their school.

4.6 SUMMARY

This chapter began with a brief introduction to the purpose of the study, outlining the questions presented in chapter one. The research process was explained, the procedure followed described and the steps to ensure trustworthiness defined. The data analysis explaining what the data, collected from the interviews, contained, followed. The next section started with the biographical data collected from the participants. Thereafter, the data analysis was presented in the form of seven subsections outlining the main themes of the data collected. The participants' own words were used as much as possible in order to improve the trustworthiness of the study. Data obtained from the document study was reviewed briefly due to the lack of available documents. The interpretation of the study followed the analysis if the data. This section was broken up into four headings, which were formulated from the four sub-questions posted in chapter one and reviewed at the beginning of this chapter. The empirical findings of the study were compared to the literature review conducted in chapter two.

4.7 CONCLUDING REMARKS

"Because you are managing the staff, the boys don't need much change management because they are the change" (Participant E). The teachers indeed need the assistance of the principal as instructional leader in creating 21st century

classrooms. The students are ready and waiting to engage in pedagogy that is relevant and engaging.

What became increasingly evident as the interviews progressed is how much change towards 21st century classroom has already taken place. The progress in independent schools in Gauteng towards 21st century classrooms became increasingly evident as the interviews progressed. It is important to note that each of the eight schools visited are at a different stage in their move towards establishing 21st century classrooms but it is fair to say that each school has made it a priority to investigate and read the theory pertaining to 21st century classrooms. Each one of the participants is completely aware of what is happening in education locally, as well as globally, and is prepared to allow their teachers to take risks and try new pedagogy in the quest to remain relevant and to be able to relate to the 21st century needs of their students.

It is with great excitement that the researcher relates the empirical findings to the literature read. The researcher was not expecting to find the amount of evidence to indicate the positive progress of the journey towards 21st century classrooms. There are educators at each of the eight schools visited that have not embraced the 21st century changes and some have embraced the change in pedagogy whole-heartedly, others are in between.

Chapter 5 summarises the study and draws the conclusion of the study. Recommendations are made and ideas for future studies are outlined.

CHAPTER 5

SUMMARY, FINDINGS AND RECOMMENDATIONS

5.1   INTRODUCTION

The purpose of this chapter is to present the summary, findings and recommendations of this study. The main objective of this study was to establish what the instructional leadership role of the principal should be in independent schools to create 21st century classrooms (§1.4). The sub-aims of the study were to:

- describe and define the concept of 21st century classrooms (§1.4);
- explain which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader, need in order to lead teachers effectively (§1.4);
- determine how the current classroom structure in independent schools can be improved upon in order to be an effective 21st century classroom (§1.4); and
- discuss the instructional leadership role of the principal in this process (§1.4).

These sub-aims will be discussed in the research conclusions section of this chapter.

5.2   SUMMARY OF THE STUDY

The rationale of the study (§1.2) was to find out what principals know about creating 21st century classrooms and how they can aid teachers in improving current classrooms practices in order to establish effective 21st century classrooms. This study will contribute to the body of knowledge in what might be the next steps in equipping principals in guiding teachers in the creation of these classrooms. This age of information calls for a new education system, one in which the principal takes a strong instructional role in leading teachers in creating and improving 21st century classrooms.

Principals have many responsibilities and areas that require their attention. Financial matters, building and maintenance needs of the school, parental concerns, individual needs of teachers, interviews for new teachers, discipline, policy matters, and finally, the instructional vision and leading of the academic staff all fall on the shoulders of the principal. Some of the participants speak about the enormous load that the principal carries in the school and how one has to beware of 'burn out' by trying to be all things to all people. The researcher has also heard the principalship is called the 'hot seat' as ultimately, each unresolved issue can be referred to the office of the principal. In small schools, the role of the principal is even more diverse. One participant compared it to the role of a policeman in a small town, and the principal having to take on many roles, as there is no one at their level that can share in the load that they carry. Due to the multiple roles that the principal carries, it may be easy to assume that the vision for the academic direction and the instructional role does not receive the attention that it so desperately needs.

This rationale led the researcher to the formulation of the main research question: 'What should the instructional leadership role of the principal be in independent schools in order to create 21st century classrooms' (§1.3)? The most logical first sub-question would then be, 'What is the concept of 21st century classrooms' (§1.3)? This would then be followed by linking the principal to the 21st century classroom by asking, 'What 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education, (§1.3) does the principal as instructional leader need, in order to lead teachers effectively' (§1.3)? Once we understand what the principal needs to know in order to lead teachers in establishing 21st century classrooms, we can then ask, 'What is the instructional role of the principal in establishing 21st century classrooms in independent schools in Gauteng' (§1.3)?

Chapter 2 provides a literature study to afford a firm foundation on which to pose the relevant research questions presented in the interview schedule. Discovering the research done on the concept of 21st century education (§2.2), relates to the concepts of 21st century learning (§2.2.2) as well as how this affects the teacher's pedagogical practice in the 21st century classroom (§2.2.3), which then gives us a

detailed explanation of the skills needed by the 21st century student (§2.2.4). The characteristics of the 21st century education, together with a picture of the 21st century teacher and then student, lead us to discover what the 21st century classroom will look like. The democratic classroom is one way of explaining some of the attributes that should be present in a 21st century classroom (§2.2.5). How instruction should be presented and the tenants of progressive education help to give this study a basis for instruction in the 21st century (§2.2.6). The literature review in Chapter 2 then continues by giving the reader a detailed look at the principal as instructional leader (§2.3), the instructional role of the principal in establishing 21st century classrooms is the chartered (§2.3.2) and the skills and knowledge required by the principal in order to lead teachers in establishing 21st century classrooms is then reviewed (§2.3.3).

Chapter 3 reports on the research method and strategy used to conduct this study. The research design (§3.3) was explained along with the research paradigm (§3.3.1). The constructivist paradigm was chosen (§3.3.1) as the research paradigm, as this paradigm allows for the joint production of reality by both the researcher and the participant. Reality is a relativist perspective rather that an absolute perspective. The phenomenon under study is not seen as an objective but a common acceptance of the social activity under study is acknowledged (§3.3.1)

This chapter explained that the qualitative method was used to conduct the research (§3.3.2), which then led to the rationale for choosing the qualitative research method (§3.3.3). The research problem was then stated together with the sub-problems (§3.3.4). The objectives with the research were bounded together with the sub-aims for the study (§3.3.5). The population and sampling used were purposeful sampling, as a small group of individuals who have the knowledge in the topic were identified (§3.4.1). The sample was eight independent schools in Gauteng. These schools were purposefully chosen as they were able to provide the information about the phenomenon being investigated (§3.4.2). Consent was obtained through an email sent to the participants, as well as a form signed on arrival at the interview (3.4.3). Anonymity and confidentiality was assured at the start of the interview and clearance was obtained from the Unisa Ethics Committee (3.4.4). The researcher used semi-

structured interviews and document retrieval as instruments (§3.5). The semi-structured interviews were the primary data collection strategy (§3.5.1). The document retrieval was not as successful as originally anticipated, the participants were under heavy time constraints and did not manage to pass on the relevant documents. The researcher did however glean a few instrumental documents off the website of quite a few of the participants' schools (3.5.2). Data collection procedures were documented (§3.6). The researcher recorded each interview using two devices to ensure that the data was safely recorded. She then drew up an interview protocol and took it to each participant to ensure that each interview was conducted in a very similar manner (§3.6). The data analysis and presentation was then discussed (§3.7), the way in which the data could be organised and assembled was conferred (§3.7.1). How coding is done and the methods involved in coding were outlined (§3.7.1). The coding was done manually without the use of a computer software programme.

Data presentation and how the transcription of data took place was then pronounced (§3.7.2). The researcher transcribed the data herself and found the process committed much of the interview to memory, which helped to identify the common themes and aided the work done in Chapter 4. Trustworthiness of the study was then discussed (§ 3.8) and how the credibility of the study was insured was described (§3.8.1). A short conclusion to the chapter was then presented (§3.9).

Chapter 4 dealt with the analysis and discussion of data collected during the interviews. This chapter presented the empirical design for the study. The introduction stated the aims of the study (§4.1). A brief outline of chapter three was given, followed by the research process that was described in detail (§4.2). The data analysis was introduced by way of reaffirming the instrument used and the participants interviewed (§4.3.1). The biographical data was presented in the form of a tables, as this gave the information in a very, easy-to-read format (§4.3.2).

The analysis of the data obtained from the interviews was then presented (§4.3.3), each of the subsections outlined were the succinct information gleaned in order to answer the research questions (§4.3.3.1 to §4.3.3.7). As much as possible of the

participants' own language was used in order to give some of the exact responses to the questions asked, in order to answer the research questions as honestly as possible. The data obtained from the data analysis was then discussed (§4.4). The data interpretation took the form of the four sub-questions posed in this study (§4.5.1 to §4.5.4). The summary of the chapter is then presented (§4.5) followed by the concluding remarks (§4.7).

Chapter 5 presents a summary of the study and the research conclusions, which are stipulated once again using the four research questions described throughout this study. Three recommendations are then explained, followed by the avenues for future research. The limitations of the study were then explained trailed by the concluding remarks.

5.3   FINDINGS FROM THE STUDY

The findings of the study will consequently be discussed according to the four sub-questions raised above (§1.3).

5.3.1   What is the concept of 21st century classrooms?

This first question from the list of sub-questions (§1.4, §3.3.6 and §4.1) was relatively easy to answer from the interview data. Although the definitions were wide and varied, it was evident that all the participants of the study had an educated idea of what skills and knowledge were needed in establishing 21st century classrooms. Some participants tried to incorporate as many of the skills and concepts as they could think of (§Table 4.7) while others limited their definition to the few they felt were the most indicative of a 21st century environment. Many of the participants used the four C's in order to narrow down the definition, which are collaboration, creativity, critical thinking and communication. While others gave as many words, relating to 21st century learning environments, as possible, one participant chose to encompass the much needed change in the environment towards 21st century classrooms, by stating that the view of the child is the most important mind shift that needs to change. In other words, the thinking of the teacher in relation to how she sees the 'child' will allow the change in the classroom to be an almost natural occurrence.

What was interesting in the principals' description of the 21st century environment was the need expressed by some participants to bring back some of the 'old fashioned' values that seem to be missing from this fast-paced, instant communication and vast information era. Kindness, honesty, loyalty were mentioned, to name a few. The value of relationships in the school environment and the care taken to communicate carefully with one another seems to have become scarce in the quest for critical thinking. Despite the move from teacher-centred learning to student-empowered education, one participant mentioned that the relationship between teacher and student is vital for the success of the student. Being motivated by the need to gain positive reinforcement from the teacher will always be a factor in the classroom, despite the introduction or use of student centred learning.

5.3.2 Which 21st century instructional knowledge and skills, as defined by the International Society for Technology in Education (ISTE), does the principal as instructional leader need, in order to lead teachers effectively?

The standards outlined by ISTE (§2.3.3) correspond with the findings of this study. The following parallels were uncovered:

- **Visionary leadership**: Each participant without fail is very tuned into the vision for his or her school. They each acknowledge why they are leading their school towards that vision and what their goals for the next season at their school are (§4.3.3.2).
- **Digital age learning culture**: All schools visited in this study are using technology. Some are more deliberate in their use of technology while others are deliberate in holding back from using it too much, as the dangers of using excessive technology is well known. All participants are well aware of the need to create and promote a digital age learning culture where their students make use of technology in learning. The most common response to technology is that it is one of the learning tools or platforms that can be used (§4.3.3.6 and §4.5.2).
- **Excellence in professional practice**: The most common name for in-service training is 'professional development' and this takes place in each school visited.

Some of the schools had a designated day especially earmarked for guest speakers, courses or technology training (participant G). In other schools, professional development took place after the staff meeting (participant H), but in every school, an environment of professional learning were meant to empower educators so that they can challenge learning through technology, and that higher order thinking is taking place (§4.3.3.2 and §4.5.2).

- **Systematic improvement**: Reflecting on best practice enables principals to ensure that their school is always moving in the direction of improvement and change to offer their students relevant and up to date practices. Not all schools visited are sharing the outcome of up to date research with teachers in order to improve practice. At some of the schools (3 out of 8 schools), research studies were shared with the teachers in order to improve their performance and to then ultimately filter into the classroom to student learning. In the other five schools, articles and inspirational readings were shared in order to encourage the teachers to reflect on their practice, but it was not necessarily research data was shared.

- **Digital citizenship**: The principal should have a good understanding of social, ethical and legal issues related to digital culture. In each school visited, there was a firm technology and social media policy in place. In the course of the researcher's data collection, some of the schools sent a copy of the policy that is sent to parents, as well as the policy that the students had to read. Most if not all the participants commented on having to deal with issues related to the technological age. Issues of bulling and inappropriate message sending were reported at most schools, necessitating the need to have rules in place for the use of technology before school and during breaks (§4.5.2 and §4.5.3).

The researcher used Demski as a point of reference, as it pertains to the finding on the instructional role of the principal in establishing 21st century classrooms (§4.5.2). Demski refers to the Tech-Leading principal and outlines several habits that effective principals adhere to in being successful in the 21st century. The participants' application of Demski's principals has been outlined in detail in Chapter four's data interpretation section (§4.5.2). These habits are vitally important in answering the

question on what knowledge and skills the principal needs to know in order to lead teachers in establishing 21st century environments. These are as follow:

- **Creating the right environment is vital**: One participant feels that through his support and encouragement, his teachers feel that they are in a safe environment, one in which they feel empowered to try new things and confident that they are not policed but fortified to be a success in bringing in 21st century learning. Creating the right environment to another participant means creating a safe, well-resourced and professional environment where teachers can try new practices and skills related to 21st century learning. Allowing teachers the opportunity to upskill themselves by offering professional development opportunities regarding technology training, as well as different ways of presenting teaching, is vital in creating an environment where 21st century skills and learning is brought through into the classroom. These views encompass the views of all of the participants to a greater or lesser degree (§4.3.3.3 and §4.5.2).

- **Foster collaboration**: Each participant acknowledged that fostering collaboration has to be an intentional activity. Time has been allocated on the timetable to allow the teaches to spend much needed time to work together on preparation and giving each other feedback to how lessons are progressing and sharing ideas. Some of the collaboration is per grade and some per subject. Participant F has projects that span across two grades; students as well as teacher collaboration are encouraged (§4.3.3.2 and §4.5.2).

- **Be open to new ideas:** Each of the participants is open to allowing their teachers to bring new ideas into discussion. Not every idea would work with the vision that the principal has for the instructional direction that the school needs to undertake, due to practical or financial restrictions, but the openness of communication is evident in all of the schools visited. In one school in particular (participant A), when asking about a new idea or teaching practice, he found that the teacher concerned had already begun to try out the philosophy or idea, and mentioned the phrase 'I have got it, I am ahead of you' (§4.5.2).

- **Being a connected learner**: As mentioned in the data analysis, each of the participants qualifies as a connected learner. Some of the participants are further

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along the trajectory than others are, but each one are sure that they know what is happening in the ever-changing world of information and knowledge. Whether it is through academic reading, being in tune with best global practices or being cognisant of what is happening at other institutions, the principal needs to stay on top of what is being tried outside of his/her own immediate environment. This particular characteristic of a highly effective Tech-leading principal is evident at all the schools visited (§4.3.3.5 and §4.5.2).

- **Locate and provide adequate resources**: Approving budgets and being aware of the teachers' need in order to create 21st century classrooms was part of each participant's portfolio. Knowing what funds are available is essential in understanding what is available to the teachers within their care. Being responsible for how the funds are used and ensuring that they are used responsibly and getting the most of what is available, is critical in leading the school in the 21st century. Not only to acquire physical resources but also for the provision of courses and training that the teachers can go on in order to upskill themselves so they can be more effective in bringing in 21st century education (§4.3.3.3 and §4.5.2).

- **Take risks**: Each participant was happy for their teachers to take responsible risks with their teaching practice. Obviously, the teacher needed to be careful with ensuring that her preparation was done and that they had learnt from other teachers who had tried a similar thing and had some words of advice. The safety of the students is also of paramount importance and feedback on the success or failure of the lesson or idea is essential (§4.3.3.3 and §4.5.2).

- **Have a visionary focus**: Three of the seven schools have embraced and implemented a new philosophy of learning. Their vision for 21st century classrooms has materialised into the classroom practices of their teachers. The participants in the other five schools have a 21st century vision for their schools and are working at a steady pace in implementing incremental changes (§4.3.3.2 and §4.5.2).

5.3.3 How have current practices in independent schools been improved upon in order to create effective 21st century classrooms?

In most of the schools visited, it was evident that many characteristics of 21st century skills and practices have been implemented. There was much in the way of professional development towards skilling their teachers in order to encourage both 21st century thinking, skills and learning in their classrooms (§4.3.3 and §4.5.4).

Using Partnerships for 21st century skills as a basis for a list of the abilities that are essential for the teacher to possess in order to effectively create 21st century classrooms, aids in reporting the findings of the current practices that are taking place in order to create 21st century classrooms (§2.2.3 and §4.5.3). The following are the list of the aptitudes that are crucial for the teacher to retain according to Partnerships:

- Using technology together with content and teaching methodology; creatively using this technology to meet learning needs (§4.3.3.6, §4.5.3 and §2.2.3). In the majority of the schools visited, technology is used as a teaching tool. There are varying degrees to the use of technology; in two schools, technology was limited in a deliberate manner.
- Giving a balance of direct instruction with project-based collaborative teaching methods (§4.3.3.1, §4.5.3, §2.2.3 and §2.2.6). In the majority of schools visited, most of the teachers were using direct instruction with other methodologies. Project-based learning was one of the alternate methods of instruction. At one particular school, project-based learning is highlighted as a popular teaching methodology.
- Using the knowledge of adolescent and child development in preparation of lessons and education policy (§4.5.3 and §2.2.3). This was only found in three of the schools visited. Most of the schools visited focused on best global practice in order to aid lesson preparation and education policy.
- Using a wide range of assessment strategies in order to evaluate performance (4.5.3 and 2.2.3). The theory of this component is well understood but it has not

translated into practice. Some of the schools visited were experimenting with different ways in which teachers could document thinking and learning.

- Actively participating in the learning community by using the expertise contained within the school area by coaching, knowledge sharing and mentoring (§4.5.3 and §2.2.3). One school was committed to ensuring that their teachers worked outside of their own classrooms and stretched their expertise to their fellow teachers and other teachers not at their particular school. Many of the other schools reported that their teachers are on other committees outside of their school where they are sharing their expertise with others.

- Making use of a wide variety of strategies to reach and teach students with a wide variety of learning styles by creating an environment that supports different ways of teaching and learning (§4.5.3 and §2.2.3). The participants all agree that teaching in the 21st century means varying strategies in order to cater for as many learning styles as possible. However, it is evident that although this makes perfect sense, it is quite difficult to achieve in practice.

- <u>Taking risks and expressing their view of topics understudy is promoted in classrooms in the 21st century</u> (§2.2.3 and §4.5.3). This aspect was found to be present in the classrooms in independent schools in Gauteng. It is true that it is more prevalent in some schools that in others, but the theory that this is where we are headed, is evident. Today's students have a voice and this voice needs to be heard, this is understood by the participants and it is moving more and more into the schools visited.

In the 21st century classroom the four C's (critical thinking, creativity, communication and collaboration) are merged with the traditional three R's (§2.2.3 and §4.5.3). Technology is used in this environment in order to facilitate the four C's. In most of the schools visited, the principal spoke of how technology has been used as a tool in order to facilitate problem solving, critical thinking, collaboration and communication. This aspect has been incorporated in the vision of the principal. It is working its way into the everyday classroom practices of the teachers.

Placing the student at the centre of their learning has been advocated by many educationalists as essential practice in the 21st century instructional practice (§2.2.4 and §4.5.3). This practice was particularly evident in two of the schools visited. Even though the importance of giving the student the power in the 21st century classroom is recognised, it is not common practice in all the participants' schools.

Having self-direction and being able to set goals, make plans for achievement and individualistically assess the worth of one's own learning is a goal that teachers and principals aim for in the 21st century classroom (§2.2.4 and §4.5.3). Encouraging students to take responsibility for their learning and to plan for their success is one of the paramount goals of the 21st century classroom. This practice is evident to a greater or a lesser a degree in the classrooms of the schools visited. Some principals were more forward thinking than others in this aspect were, but most are aware of the necessity of this component.

Being globally aware and culturally competent is essential in the 21st century classroom (§2.2.4 and § 4.5.3). Two of the schools visited referred to the importance of cultural awareness and highlighted this aspect in their school through festivities and celebrations. Communications with other cultures in different countries was not observed in the schools visited.

Many theoretical components of the 21st century classroom are evident in the classroom practices of the schools visited. Although the focus of these components is different in the various schools, each one of them have knowledge of what is happening in the classrooms of other schools in their own environment, as well as globally, and the participants are filtering down the necessary theory and motivating their teachers to begin making the essential changes.

5.3.4 What is the instructional leadership role of the principal in this process?

Participant B explained his role is that of a teacher with other added responsibilities. Initially, the principal was the head teacher who took on administrative tasks as schools grew bigger than one classroom (§2.3.1 and §4.5.4). Surprising that in the

year 2016, some principals still see their role as largely instructional with some leadership and managerial tasks added to it (§4.3.3.4).

Participant D went as far to explain that at her school they had the experience of working with a principal who had no knowledge of curriculum and classroom practice. He was an administrator and manager and was able to measure off each of the tasks completed but he was not able to have conversations about academic matters within his school. She went on to mention that it is vital for the teaching staff when the principal is able to lead instruction at the school. However, also it inspires confidence in the parents at the school when the principal is up to date on what is happening globally in education, as well as being able to lead his/her teachers in applying best global practice in their school (§4.3.3.4).

The researcher initially thought that she would find through the interview process that the instructional role of the principal had been delegated to the deputy principal, as the many pressures and time constraints on the principal would not allow him/her the luxury of being the instructional leader. What a welcomed disclosure it was to uncover that despite the many pressures and time constraints in seventy five per cent of the school principals interviewed, the role of instructional leader was firmly in the hands of the principal (§4.5.4 and §4.3.3.4).

Most of the data indicates that the majority of participants feel that their instructional responsibilities form a major part of their day-to-day tasks but their duties include many other aspects (§4.3.3.4). The degree to which each participant takes the lead in the instructional responsibilities of their school varies from participant to participant. The spectrum varies from those participants that will sit in on preparation meetings to those that give out articles on best practice to motivate and inspire their teachers. One participant (participant F) sees each of her teachers every two weeks to monitor their progress and to work through any challenges that they may have. She stays up to date on global best practice and will pass along any new relevant articles on pedagogy that point her teachers in the direction of which the instructional practices need to go.

The majority of participants are in touch with their instructional role and feel quite passionately that they need to know and be involved in the instructional practices of their teachers. From arranging time for teaching-development according to their vision of best practice (§4.3.3.2), to ensuring that their teachers collaborate with one idea in order to share teaching pedagogy, the principal is aware and involved in the teaching practice of his/her teachers (§4.3.3.4).

Now that we have established that the majority of participants interviewed were firmly in place at the head of instruction in the schools visited, the researcher needs to clarify what their instructional role in the school entailed. The instructional role begins with the instructional vision for the school, how does the principal envisage teaching and learning taking place in his school. What principals does he believe should lead his teachers and what practices does he feel should be evident in the classroom? Every one of the participants was able to give a precise account of their vision for the classroom practices of his or her teachers, as well as how they feel learning should be taking place. Many of the participants equated good practice with 21st century skills, knowledge and principles (§2.3.3 and §4.3.3.1).

Creating the right environment for teachers to bring in 21st century learning is the second and vital function for the principal as instructional leader. Encouraging his/her teachers to try different practices and takes risks is essential. Ensuring that the teachers have the resources they need to encourage 21st century learning practices is crucial. Some of the participants went as far as to include the absence of fear as paramount in creating an atmosphere conducive to open thinking and risk taking. In encouraging the teachers to take risks and become critical thinkers the students are encouraged to be the same (§2.3,3 and §4.3.3.3).

Part of the instructional role of the principal is to challenge the thinking and practices of his/her teachers. By challenging teachers' thinking, you challenge their practices. Each of the participants visited went about doing this, many by sharing current trends in research in the form of articles. Some participants challenged their teachers' thinking by introducing certain topics during teacher-development sessions and still others, by displaying critical thinking practices and leading by example (§2.3.3).

Collaboration is vital in this 21st century age. As instructional leader, is the principal encouraging this practice amongst his or her teachers? The practicality of this component is easy to test, the principals in the majority of the schools visited, designated periods on the time table to make meeting and collaborating intentional. Many of the principals commented on how designating meeting times between the teachers had to be built in and made compulsory, due to the fast pace of life, if it is not made intentional in may be overlooked (§2.3.3 and §4.5.2).

Being a connected learner is vital in the role of instructional leader. Knowing what is happening in the wider community and remaining connected to educational practices globally is vital in leading a school in the instruction field. In order for change to take place in the direction of 21st century classrooms, the principal needs to be a connected learner. This will permeate through the teaching staff, as they see how ones thinking and then practice can be transformed through reading and being linked to other like-minded individuals (§ 2.3.3 and §4.4.5).

Being finely tuned to what is happening in the classroom by being in touch with the teachers' practice is also important. Some of the participants are still teaching certain classes in the school. They feel that to stay in touch with best practice they need to be involved in classroom practices themselves and mirror some of the current research that is available on best practice for the 21st century (§4.3.3.4).

5.4   RECOMMENDATIONS FROM THE STUDY

The purpose of this qualitative study is to add to the body of knowledge regarding the shift to 21st century education in independent schools in Gauteng province, as it relates to leading teachers in creating 21st century classrooms within their schools, what instructional knowledge and skills the principal possessed, as well as what skills do they still need to develop. Principals are in a situation where they need to know about and be able to lead teachers in developing a 21st century classroom structure and instructional practices. The results of this study may assist in focusing future development efforts of the principal on the right target.

5.4.1 Recommendation 1: Upskilling of the principal towards a better knowledge of the use of technology

Certain principals felt they needed to upskill themselves in understanding the technology itself at a basic level, as well being able to select appropriate programmes in addition to dealing with challenges that arise with technology. All of the principals did have excellent teachers, which they employed to lead technology implementation and trouble shooting. It had been many years since some of the principals had taken technology related courses and in terms of being able to lead the teachers in establishing 21st century classrooms, the principal needs to have the knowledge to understand what is being implemented despite having the necessary man power to lead the technological processes in their schools. The training undertaken should deepen principals' understanding of what technology is available along with the basic understanding of how these programmes function. Knowing the strengths and weaknesses of these programmes, along with their future development is essential in supporting the choices made by the teachers involved in choosing these programmes (§4.3.3.7, §4.3.3.5 and §5.5).

5.4.2 Recommendation 2: Increasing the use of technology to maximise exposure to different cultures in order to grow global competencies and awareness

A study conducted of fifteen reports, books and articles describe the kinds of knowledge and skills that are essential for 21st century learning to take place (§2.2.2). One of emphasises of this study is the use of technology for communication and collaboration purposes. Immense distances can be exceeded through using the internet, which then increases globalisation. This in turn affects the exposure of students to cultures, facilitating students to be more culturally competent.

Research conducted identified global awareness and cultural competence as one of the important 21st century skills needed by today's students (§2.2.4). This skill gives students the capability and willingness to form meaningful relationships with people who are different from them. Global competencies and awareness allow students in 21st century classrooms to be aware of the world we live in. To foster respect for

different cultures and to communicate with them is a vital part of these classrooms. Encouraging the growth of students in this area would improve on the 21st century classrooms being established in the schools visited. The instructional role of the principal in establishing 21st century classrooms is the main purpose of this study. Encouraging teachers to inspire their students to embrace communication with other cultures would improve upon the 21st century practices in the classroom. Part of the instructional role of the principal is to help the teachers to focus not on only what they are teaching but also what the students are learning. The principal as instructional leader helps the school to focus on why it exists, which is to help students learn (§2.3.2). Being culturally aware takes focus, as teachers can become distracted from bringing in global awareness. They may get bogged down with the day-to-day details of teaching and forget that their school, their students are part of an immense learning community. Staying in touch with other students with different cultural backgrounds from different countries is part of remaining relevant and informed of other learning practices (§4.5.3).

With digital age tools available in all of the schools visited, collaboration for cultural understanding and global awareness should be encouraged. In all schools visited, there was a lack of the use of digital age tools and collaboration for cultural awareness and global interaction between students. The principal, as instructional leader, needs to gather information on how he can encourage teachers to get their students involved in collaboration with students in other communities in order to promote global awareness using digital tools. In two of the schools visited, cultural differences between the students were being celebrated. The students were encouraged to learn about different cultures and religions (§4.5.1); however, communication and collaboration projects between students in different countries had not been attempted. Some of the participants have not been involved in the classroom for many years and this may be the reason as to why this collaboration has not been encouraged in the instructional programme. Classroom experiences that allow students to engage with other students, teachers and principals using digital tools for establishing a cultural understanding and global awareness, are recommended.

5.4.3 Recommendation 3: Investigation of new ways of conducting assessment in order to uphold the principles found in the 21st century classroom

There seems to be a discrepancy between the teaching and learning practices and the way in which assessments are conducted. Although some of the participants explained that they are investigating different methods of assessment for example oral assessments, group assessments and recording the thinking of students as a form of assessment, it is evident that in many of the schools visited, formal, written, individualised assessments are taking place. Perhaps the shift has taken place where more skill rather than content is being assessed, the stress provoking, individualised assessments are still the norm in all schools visited. It is a recommendation that principals now investigate ways in which assessment can be changed in order to reflect the change in classroom practice. This could mean assessing the reporting process and how these reports are structured (§4.3.3.1).

5.4.4 Recommendation 4: Encourage more self-directed learning in the 21st century classroom

Encouraging more self-directed learning and empowering students to work independently is a second area where 21st century classrooms can be improved upon. Despite the progress, through the eyes of the principal, towards 21st century classroom, in the schools visited encouraging students to be take more responsibility and ownership for their learning should be encouraged. This would mean allowing their students to feel some level of discomfort while they navigate and explore different methods of problem solving and grapple with a new direction of thoughts. This is not an easy thing to do, as teachers like to be able to give the answers to questions and students are accustomed to receiving the answers without having to push forward towards solving complex problems. Many of the participants commented on the tendency of teachers to give the answers to difficult questions, as teaching can be linked with the giving of information to students. Participant C explains that teachers ask questions and are then tempted to answer the questions themselves. Participant B clarifies that there are teachers in any school who are still

stereotypical of the teacher centric way of doing things and want all their students to produce work that looks similar. Allowing learning to be more self-directed was not one of the aims of teaching in the classroom prior to the concept of the 21st century classroom in most schools (§4.3.3.1).

5.5   AVENUES FOR FURTHER RESEARCH

A further research option might be to explore the difference between the academic and research information that the principal has in relation to establishing 21st century classrooms and the practical practices in relation to the skills and pedagogy in these schools. In this study, the researcher would need to interview the principal, as well as the teacher and a student in one of the classes. This information would then be compared to ascertain whether the academic or research information (§4.3.3.1) ties in with the practical or application level, in other words teacher practice and learner experiences.

A second avenue for further research could be the correlation between the years of experience the principal has had in the classroom in relation to the strength of his/her instructional leadership role. Included in this study may be the number of years that the principal has not been in the classroom in relation to the power of his/her instructional role (§4.3.3.4). In two of the interviews conducted, the teaching experience of principal is seen to have a positive correlation to his/her instructional role (§4.3.3.4, §4.3.3.5 and §4.5.4). During the interview process, it was uncovered that two of the principals still teach. These principals seem to think that this positively affects their instructional role, as they are involved in direct conversations with their teachers.

A third possible research option is to explore the difference in the principal's instructional leadership roles when teaching and not teaching. Participant B and H in this study are still teaching. They are in the right discussions with teachers as they have a common ground. How does this affect their instructional leadership role (§4.5.4)?

A fourth possible research area could be to find out how the 21st century emphasis affects the introverted student. Are we losing some of our quite critical thinkers in the noise of the 21st century collaborative environment? Is there a way in which we can collaborate where the introverted student can still contribute his/her thoughts on topics without being intimidated by the outgoing students (§4.3.3.1)?

Investigating schools who have implemented a completely different philosophy of learning, which is said to integrate most of the 21st century skills and learning (§4.3.3.1 and §4.3.3.2). At these institutions, 21st century instruction, classrooms and learning are marketed as happening as a normal part of the school day. This research may be able to shed light on whether this is indeed true and if so, where the principal obtained the knowledge and understanding of these practices. This in turn could aid principals in deciding whether this philosophy would benefit the classrooms at their school in establishing 21st century classrooms.

How does the data collected in this study compare with the instructional role of the executive heads of schools? Would the data be the same in terms of the instructional role of executive heads and what about the principals of Senior Schools? This study conducted interviewed mostly Senior Primary school principals. Would we find the executive head masters/mistresses to be as involved in the instruction of the school (§4.3.3.4)?

This same study could be conducted at Government primary schools in different provinces. Due to some financial restrictions at these schools, would we find the same degree of progress in technology? If technology was not as advanced as in the independent schools, are the other 21st century skills still prevalent? (The four C's of communication, collaboration, critical thinking and creativity.) What style of teaching or rather learning is evident in these schools? Has the pedagogy moved away from teacher-driven, content-centred education (§5.5.2)?

Investigating the vision of the principal in government schools, would they be towards establishing 21st century classrooms (§4.3.3.2)? What challenges do they face? What challenges do principals face in trying to establish 21st century classrooms in government schools in Gauteng province? There has been talk in the news of using

IPads in some of the government schools in Gauteng. Has this affected the growth of 21st century classrooms in these schools?

Perhaps another investigation that could take place is the correlation between the strength of the principal's instructional role and their role in leading teacher-development at their school. It would seem that there is a positive correlation between the two factors. In one school, the principal does not lead teacher-development at her school. Is this due to a lesser instructional role that she plays in the school (§4.4.3.2)?

The cost of fully resourcing the 21st century classroom can be enormous; is there a way in which 21st century classrooms can be fully established without the burdening costs? There is quite a bit of research indicating that 21st century classrooms are not dependent on technology. The skills and knowledge that the 21st century student needs to acquire is not obtained solely by using technology (§4.3.3.6).

One of the characteristics of the 21st century classroom is to adapt the teaching style and strategies of the teacher to meet as many of the learning styles of the individuals in the classroom. How could we go about doing this? How can we teach to affect as many learning styles as possible (§4.3.3.1)?

5.6   LIMITATIONS OF THE STUDY

Only eight out of the possible 160 school principals were interviewed. If more schools were interviewed, the researcher would have been able to get a better idea of how accurate the results are. The emerging themes could have been strengthened by increasing the number of participants.

Various principals were interviewed, as well as the 'Executive Principal' of one school (§4.3.2). Would the data have been the same if an executive principal has not been included in the study? Could the researcher have received the same data if the principal of all junior primary schools had been interviewed? However, the data from the principal of a junior primary school was very much in line with the data collected from the senior primary principals (§4.3.3.4).

This study was limited to independent schools in a small area of Gauteng province. This does limit the data as it can only be applied to independent schools, which have access to a larger degree of funding to aid in technology development in these schools. The instructional role in terms of providing resources would be interesting to see if these roles are the same in government schools. Would the vision be the same, which for the purpose of this study, is to establishing 21st century classrooms?

5.7   CONCLUDING REMARKS

Establishing 21st century classrooms in independent schools in Gauteng is more progressive than originally anticipated. Many of the principals in the schools visited have a vision in establishing these classrooms, some dating back as early as 2008. They have done the research and are in various stages of implementing the vision for 21st century classrooms. Some of these schools have used a new philosophy as a vehicle to bring in these skills, while others are bringing in new ideas and teaching philosophies alongside more traditional pedagogy. Working on upskilling their teachers in terms of technology is an aim in each school visited. Challenging their teachers' thinking and inspiring them to think differently about their classroom dynamic, as well as their view of their students, have been evident in the schools visited as the principal goes about his/her instructional role. Whether it is their teaching presence in the classroom or their commitment to being a connected learner, most of the principals interviewed is filling a strong instructional leadership role.

What was very clear in this journey is that the principal as instructional leader is as strong as it could be in the majority of schools visited. The skills outlined as being vital for the principal, as instructional leader, is prominent in varying degrees in the participating schools.

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APPENDIX A: INTERVIEW SCHEDULE

Topic: The Instructional Leadership Role of the Principal in Independent Schools: Towards 21st century classrooms

Section One: Vision:

1. In your opinion, what are the 21st century skills that you feel should be incorporated into your school? How do you define 21st century education?

2. What is your vision for a 21st century learning environment? Has your school identified the skills they wish to highlight in the 21st century?

3. How important do you feel this vision is to the teachers who need to create 21st century classrooms?

4. How do you get the teachers and stakeholders to buy into the vision that you have for your school?

5. What is your vision when it comes to the classroom practices of your staff? How do you communicate this vision to your staff?

6. Do you believe there needs to be a new teaching paradigm?

Section Two: Is creating a 21st century learning environment a priority in your school?

7. How do you as the principal create the right environment for the teachers to introduce 21st century learning?

8. How do you encourage your teachers to develop 21st century competencies in their students?

9. How do you go about getting the teachers to collaborate with one another?

10. Do you feel that it is important for your teachers to take risks? Do you create an environment that allows teacher to take risks? How do you do this?

11. In what way do you challenge your teachers thinking?

12. Do you believe the role of the teacher needs to change? Please elaborate. What is your role in aiding this change if you believe change needs to take place?

13. If you had a motto that each teachers could put up in his/her classroom what would it be?

14. Please identify skills that 21st century students, teachers and principals (all three) should possess.

Section Three: Instructional role

15. Do you believe that one of your primary responsibilities as principal is to lead the teachers in the academic/instructional priorities in the school?

16. Are you yourself a connected learner? What impact do you think being a connected learner has on your staff members?

17. How do you/would you suggest your teachers change their practices in order to establish 21st century classrooms?

18. How would you describe your role in establishing 21st century classrooms in this school?

19. Please identify what principals must know in order to lead teachers in creating a 21st century classroom and utilizing 21st century instructional practices.

Section Four: Technology

20. Is it part of your portfolio to provide the resources needed by your teachers to engage in 21st century teaching in order to create 21st century classrooms?

21. How has technology in teaching impacted pedagogical practices of teachers in your school?

22. Do you believe that the process of learning is changing because of technology?

23. How has technology changed the relationship inside the classroom among students and teachers?

24. How do you think technology can be used in the classroom?

25. What is your role in helping teachers to use this technology in creating 21st classrooms?

26. Is technology the only way to bring in 21st century skills into the classroom?

27. What additional responsibilities do you feel you need/have needed to undertake in your role as leader in the 21st century?

28. Is there the possibility of gaining access to some of your documents regarding 21st century implementation?

- Emails
- Policy documents
- Documents on technology implementation/integration.
- Correspondence between heads and teachers regarding 21st century skill implementation.
- Has the identification of 21st century skills yielded any documentation?

APPENDIX B: INTERVIEW PROTOCOL

1. Introduction-smile and shake hands

2. Thank principal for their time

3. Ask if I may please record the interview

4. Give a brief overview of the reason for the interview and information on topic.

I am conducting this study to find out what role the principal has played/is playing in establishing 21st century classrooms in independent schools is Gauteng. The information collected will shed light on how school principals are assisting teachers in establishing classrooms where 21st century skills are becoming a priority.

What do I mean by '21st century classrooms'? The use of digital apparatus and the Internet is a clear distinction between our past educational path and the 21st century learning environment. Combining the foundational skills of reading, writing and arithmetic with higher order skills such as critical thinking, creativity, communication and collaboration help us to navigate the 21st century learning philosophy. Content is not obsolete but is used as a springboard to navigate problem solving and group constructed projects. New skills are necessary in the attempt to create 21st century learning where students traverse new learning opportunities by collaborating with students who are different from themselves. The impact of globalisation and technology can be felt in the way in which we deal with information and knowledge. Application of higher order thinking skills such as problem solving and critical thinking take on a different slant as the abundant access to information makes the students application of these skills far more complex. There is an increased need for cultural awareness, as students are able to communicate with each other across great distances. Being in control and responsible for one's own learning together with a growth in moral and ethical understanding is required as we charter 21st century learning. Developing empathy and a sound value system is included in the classroom as we combine all the necessary skills and values in moving towards establishing the 21st century classroom.

5. Participant identity and school is confidential.

6. Get letter of consent signed. (Appendix C and D).

7. While letter of consent is being signed have a look and record where interview is taking place, participants appearance, how they feel about the interview.

8. Ask for documents related to the study… Letters, reports, emails, minutes of meetings, policy documents on technology integration and 21st century skills implementation. Correspondence between head of phase as they incorporate these skills as they filter down, inspection reports, newsletters, staff and teacher training may also be a source of data.

9. Conclusion:

a. Is there anything left unsaid?

b. I will send transcripts as part of triangulation-also confirm that you are happy with the way in which the questions have been answered and interpreted.

c. Please feel free to contact me if you want to add anything or if you want to add to the questions from reading the transcript.

d. Thank you most sincerely…I really appreciate your help with this project.

APPENDIX C: DOCUMENTS SENT VIA EMAIL
ASKING FOR INTERVIEW AND CONSENT

UNISA | university of south africa

Participant information sheet

2 May 2016

Title: The Instructional Leadership Role of the Principal in Independent Schools: Towards 21st century classrooms

Dear Prospective Participant,

My name is Sandra Pyle and I am doing research, under the supervision of Professor Botha who is a Professor in the Department of Education Management, towards a Master's Degree in Education at the University of South Africa. We are inviting you to participate in a study entitled: The Instructional Leadership Role of the Principal in Independent Schools: Towards 21st century classrooms.

I am conducting this study to find out what role the principal has played/is playing in establishing 21st century classrooms in independent schools is Gauteng. The information collected will shed light on how school principals are assisting teachers in establishing classrooms where 21st century skills are becoming a priority.

What do I mean by '21st century classrooms'? The use of digital apparatus and the Internet is a clear distinction between our past educational path and the 21st century learning environment. Combining the foundational skills of reading, writing and arithmetic with higher order skills such as critical thinking, creativity, communication and collaboration help us to navigate the 21st century learning philosophy. Content is not obsolete but is used as a springboard to navigate problem solving and group constructed projects. New skills are necessary in the attempt to create 21st century learning where students traverse new learning opportunities by collaborating with students who are different from themselves. The impact of globalisation and technology can be felt in the way in which we deal with information and knowledge. Application of higher order thinking skills such as problem solving and critical thinking take on a different slant as the abundant access to information

makes the students application of these skills far more complex. There is an increased need for cultural awareness, as students are able to communicate with each other across great distances. Being in control and responsible for one's own learning together with a growth in moral and ethical understanding is required as we charter 21st century learning. Developing empathy and a sound value system is included in the classroom as we combine all the necessary skills and values in moving towards establishing the 21st century classroom.

I have chosen you as you are the principal at an independent school and this study has been limited to collecting data in independent schools in Gauteng. The school where you work is also in close proximity to where I live and to the school where I am an educator. I will be interviewing eight school principals in Gauteng starting with those in my immediate vicinity.

The study involves conducting an interview of approximately one and a half hours. This interview will be taped, and transcribed into data that will be used to understand the phenomenon under study. I would also like to study any documentation that has been drawn up regarding 21st century skills and their implementation. This includes but is not limited to email communication and minutes of meetings where the topic under study has been mentioned. Any policy documentation that has been drawn up regarding this topic would also be very helpful in understanding how the 21st century skills have been implemented in the classrooms in your school.

Participation is voluntary and you are under no obligation to participate. If you decide to take part, you will be given this information sheet to keep and asked to sign a written consent form. You are free to withdraw at any time and without giving a reason. It would be appreciated however, that once the interview has taken place and data captured, that you consider very carefully when withdrawing as once the data has been transcribe it will form a vital part of the study.

The schools that take part will be given a copy of the transcribed interview, which may be helpful in identifying areas of strength and areas that need to be worked on within the school. The school will also receive a copy of this study, which may be of assistance the principal in being up to date on the most recent research into creating 21st century classrooms.

The identity of both the school and the principal will be kept confidential. No one apart from the researcher will know about your involvement in this research. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other form that the data may take.

The data will be transcribed by me and no one else besides my Supervisor and the Research Ethics Review Committee will have access to the data from the transcribed interviews.

The data from the interviews will be used in this research project and may at some time be used for other purposes such as a research report, journal article or conference proceedings. If this research project is published, individual participants will not be identifiable in such a report.

Hard copies of the answers to the interview questions will be kept in a locked storeroom for a period of five years. Electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After five years, hard copies of data will be shredded and electronic copies permanently deleted from the hard drive of the computer throughout the use of a relevant software programme.

This study has received written approval from the Research Review Committee of the Unisa Ethics Committee (REC). A copy of the approval letter can be obtained from the researcher if you so wish.

Once the finding have been presented and recommendations made the finding can be made available if you wish to be informed as to what they were. Should you require any further information or want to contact the researcher about any aspect this study please contact 076 273 0115 or email spyle@standrews.co.za.

Should you have concerns about the way in which the research has been conducted, you may contact Professor Botha at botharj@unisa.co.za or phone 0824116361. Alternatively, contact the research ethics chairperson of the College of Education, Dr M Claassens at mcdtc@netactive.co.za.

Thank you for taking the time to read this information sheet and for participating in this study.

Thank you.

Sandra Pyle

Consent to participate in this study: (Return Slip)

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time.

I am aware that the findings of this study will be processed into a research report, journal publications and or/ conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participants Name and Surname:

_____

Participants Signature   Date

_____

Researcher's Name and Surname

_____

Researcher's signature   Date

_____

APPENDIX D: LETTER REQUESTING AN ADULT TO PARTICIPATE IN AN INTERVIEW

UNISA | university of south africa

A letter requesting an adult to participate in an interview

Dear Mr/Mrs_____

This letter is an invitation to consider participating in a study I, Sandra Joanne Pyle, am conducting as part of my research as a master's student entitled: The Instructional Leadership Role of the Principal in Independent Schools: Towards 21st century classrooms, at the University of South Africa. Permission for the study has been given by the Department of Education and the Ethics committee of the College of Education, UNISA. I have purposefully identified you as a possible participant because of your valuable experience and expertise related to my research topic.

I would like to provide you with more information about this project and what your involvement would entail if you should agree to take part. There has been a serious amount of information written on the 21st century classroom, what characterises 21st century learning, what skills and knowledge need to be evident in 21st education. Investigating this topic and writing a literature review or theoretical framework has shown me how vital it is for our educational relevancy to incorporate the skills and knowledge that are pertinent to this century. In this interview, I would like to have your views and opinions on this topic. This information can be used to improve the way in which the principal aids teachers in introducing 21st century skills into their classrooms.

Your participation in this study is voluntary. It will involve an interview of approximately 90 minutes in length to take place in a mutually agreed upon location at a time convenient to you. You may decline to answer any of the interview questions if you so wish. Furthermore, you may decide to withdraw from this study at any given time without any negative consequences.

With your kind permission, the interview will be audio-recorded to facilitate collection of accurate information and later transcribed for analysis. Shortly after the transcription has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of conversion and to add or to clarify any points. All information you provide is considered completely confidential. Your name will not appear in any publication resulting from this study and any identifying information will be omitted from the report. However, with your permission, anonymous quotations may be used. Data collected during this study will be retained on a password-protected computer for a period of 5 years. There are no known or anticipated risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at 076 273-0115 or by e-mail spyle@standrews.co.za

I look forward to speaking with you very much and thank you in advance for your assistance in this project. If you accept my invitation to participate, I request you to sign the consent form, which follows on page 2.

Yours sincerely,

Sandra Pyle

Consent form:

I have read the information presented in the information letter about the study: The Instructional Leadership Role of the Principal in Independent Schools: Towards 21st century classrooms, in education. I have had the opportunity to ask any questions, and add any additional details I wanted. I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in publications to come from this research, with the understanding that the quotations will be anonymous. I was informed that I may withdraw my consent at any time without penalty by the advising the researcher. With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Participants Name (please print): _____

Participant's signature: _____

Researchers Name: _____

Researcher's signature: _____

Date: _____

APPENDIX E: COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

UNISA | University of south africa

COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

17 August 2016

Ref : 2016/08/17/08416788/07/MC
Student : Mrs SJ Pyle
Student Number : 08416788

Dear Mrs SJ Pyle

Decision: Ethics Approval

Researcher: Mrs SJ Pyle
Tel: +2711 609 6668
Email: 8416788@mylife.unisa.ac.za

Supervisor: Prof. RJ Botha
College of Education
Department of Educational Leadership and Management
Tel: +2782 411 6361
Email: botharj@unisa.ac.za

Proposal: The instructional leadership role of the principal in independent schools: Towards 21st century classrooms in Gauteng namely, Johannesburg East

Qualification: M Ed in Education Management

Thank you for the application for research ethics clearance by the College of Education Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the research.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the College of Education Research Ethics Review Committee on 17 August 2016.
The proposed research may now commence 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 College of Education Ethics Review Committee.

University of South Africa
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Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
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APPENDIX F: LETTER TO AND FROM ISASA

Sandra Pyle

From:	Simon Lee <simonl@isasa.org>
Sent:	05 May 2016 06:58 AM
To:	Sandra Pyle
Subject:	RE: Research project permission

Hi Sandra,

ISASA is a voluntary association rather than a governing body for schools, so you do not need specific permission from us to interview principals. The only permission required is from the individual schools themselves.

Best regards,

Simon

Simon Lee
Information and Technology Manager
☎ 011 648 1331 📠 011 648 1467 🕓 www.isasa.org
🏠 16 St David Road Houghton Johannesburg 2198

ISASA Independent Schools Association of Southern Africa

From: Sandra Pyle [mailto:spyle@standrews.co.za]
Sent: Wednesday, 04 May 2016 3:39 PM
To: ISASA Info <info@isasa.org>
Cc: Sandra Pyle <spyle@standrews.co.za>
Subject: Research project permission

Dear Sir/Madam

Good Afternoon.
I am a teacher at St Andrew's School for Girls based in Gauteng.
I am currently in the second year of my Master's Degree in Education Management and need to conduct research.
I would like to interview 8 school principals at Independent Schools in Gauteng.
I would like permission to conduct these interviews before seeing permission from the individual school principals.
Who would I need to send the letter from UNISA asking for permission.

Kind Regards,
Sandra Pyle

Sandra Pyle
Grade 6 Leader

St Andrew's School
for Girls
SKILLED FOR LIFE

Email: spyle@standrews.co.za
Office: +27 11 453 9408 **Fax:** +27 11 453 1112
www.standrews.co.za

NB !! Please consider your environment before printing this e-mail.

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