

**EXAMINING THE LEARNING STYLE PREFERENCES OF OFFENDERS AT THE
JOHANNESBURG FEMALE CORRECTIONAL CENTRE**

by

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DECLARATION

Name: Mulalo Unity Sivhidzho

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Title: Examining the learning styles preferences of offenders at the Johannesburg Female Correctional Centre.

I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other higher education institution.



SIGNATURE

16 February 2021

DATE

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“To God be the glory”

ABSTRACT

EXAMINING THE LEARNING STYLE PREFERENCES OF OFFENDERS AT THE JOHANNESBURG FEMALE CORRECTIONAL CENTRE

by

MULALO UNITY SIVHIDZHO

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DEGREE: MCom (Business Management)
SUBJECT: Human Resource Management

The aim of this study was to examine the learning style preferences of offenders at the Johannesburg Female Correctional Centre.

There are high numbers of offenders who drop out of correctional service school and correctional programmes. This study sought to contribute towards a solution by way of examining the learning style preferences of offenders at the Johannesburg Female Correctional Centre and establish how these preferences influence offenders' learning experiences.

The study used a cross-sectional survey design. Data were collected from 402 respondents who were sentenced offenders. Enumeration sampling was used due to the small size of the population ($n = 571$). An adapted version of Kolb Learning Style Questionnaire was used to collect data.

Version 26 of the Statistical Package for the Social Sciences (SPSS) was used to analyse data. Descriptive and inferential statistics were computed as part of data analysis.

The findings of this study revealed that respondents at the Johannesburg Female Correctional Centre overwhelmingly prefer divergence/reflector learning style.

Furthermore, this learning style was found to affect the respondents learning experiences to a great extent, both during correctional service school and the rehabilitation programmes. A conclusion drawn from the findings of this study is that offenders at the Johannesburg Female Correctional Centre are mostly divergers/reflectors who believe that their preferred learning style affects their learning experiences, both during classes at the correctional service school and in rehabilitation programmes. A key recommendation suggested for the Department of Correctional Services was that the department must consider conducting a learning styles assessment of offenders upon admission in order to ensure that the objectives of programmes offered within correctional centres are fit for purpose.

KEY TERMS:

Correctional centre; Incarceration; Learning; Learning experience; Learning styles; Rehabilitation programmes; Vocational education

CHAPTER 1: SCIENTIFIC ORIENTATION OF THE STUDY

1.1 INTRODUCTION

This chapter provides the background to the study. Furthermore, the chapter presents the problem statement, research questions and objectives. The context and significance of the study are provided. The chapter also presents an overview of the research methodology adopted, as well as an overview of the ethical considerations for the study. The chapter ends with a structural outline of the dissertation.

1.2 BACKGROUND TO THE STUDY

James and Crabbe (2016, p. 3) state: “Offenders are a group of people often forgotten or ignored by society as a whole”. However, despite their incarceration, offenders have as much a right to education as non-offenders. The aim of establishing correctional centres all over the world is to provide rehabilitation and correctional facilities for offenders, thereby providing an effective environment that reduces the risk of reoffending (Mbatha et al., 2019). This means that regardless of the offence of the individual, their location in the correctional facility, where they come from or any limitation they may have, they must have access to educational opportunities (Kabeta, 2017).

This study examines the learning style preferences of offenders at the Johannesburg Female Correctional Centre. Bosman (2015) found that applying learning style models during the learning process can ensure that learning opportunities are more individualised and therefore more personalised when teaching is tailored to suit individual needs. This view is supported by Malacapay (2019) who posits that teachers should profile the kind of learning styles their learners demonstrate in order to modify the content, process, or products offered by differentiating their instruction to suit individual needs. Therefore, learning style models enable teachers to identify and address individual learning needs, and also create the awareness amongst learners and teachers about a wide range of learning and teaching methods that are available for use (Bosman, 2015).

Education is the whole process by which one generation transmits one culture to the succeeding generation; or better still it is a process by which people are prepared and enabled to live effectively and efficiently in their environment (Mbatha et al., 2019). Kabeta (2017) describes correctional centre education as that which encompasses the educational activities undertaken by persons who are under the supervision of the judiciary. Hence, the correctional centre context is unique and imposes restrictions and constraints not experienced elsewhere in education. Offenders constitute a vulnerable group whose academic self-efficacy may be influenced by previous negative experiences in the formal school environment. Equally, factors related to their sentence, such as sentence length and portion of sentence served may also have an impact on their academic self-efficacy (Roth et al., 2016).

The next section discusses issues that are specific to the correctional centre as a learning environment. These entails, amongst others, the constraints that offenders encounter during their stay within the correctional centre and how these influences their learning experiences.

1.2.1 A correctional centre as a learning environment

According to Adebayo and Babalola (2019), the correctional centre's welfare services include the educational experience. The authors maintain that education is a means of emancipating people from abuse, unemployment and poverty and that is the reason why democratic countries provide basic education for all citizens, even 'law breakers. However, offenders face a range of barriers to access learning, and these barriers are both institutional (that is, associated with their incarceration) and dispositional (that is, linked to their personal circumstances) (Brosens *et al.*, 2015). Moreover, the correctional centre's culture and environment have an important influence on the take-up of education and training by inmates, including the actual surroundings in which education and training take place as well as the staff involved (Kabeta, 2017). Hence, the correctional centre's physical infrastructure is constantly under severe strain and inevitably, the housing conditions of offenders deteriorate systematically (The Judicial Inspectors for Correctional Services, 2018).

Zerem and Akkoyunlu (2015) have found that learning differences exist among students and that the only way for learning to take place in the proper sense is to understand individuals learning styles and arrange their learning environment accordingly. No matter the learning environment, students' learning styles should be taken into consideration while designing the learning process. According to Johnson (2015), in South African correctional centres most educators teach in places that were never intended for teaching and learning; for example they teach without chalkboards and desks, and sometimes in kitchens. Educational programmes in a correctional institution, therefore, are programmes too often deficient in staff, resources, methods and facilities. This is a problem because learners studying inside such correctional centres, having no access to resources, will have limited learning experiences (Crowley, 2019; Kabeta, 2017).

As such, the correctional centre's environment presents an educational challenge to offenders during their incarceration, and obtaining an education, which is valuable and necessary to their needs within the correction centre is not easy (The Judicial Inspectors of Correctional Services, 2018). Offenders may also be locked up in cells for a significant proportion of the time and find themselves unable to access regular face-to-face tutoring. Similarly, at any stage offenders can be transferred to another correctional centre or be released to a community based facility, which leads to the interruption of their learning (Kabeta, 2017). The correctional centre environment is unique as the focus is on lock-downs and headcounts, which make teaching and learning difficult. Moreover, there is lots of noise and free movement of sound as offenders talk, sing and express themselves sometimes for 24 hours, while correctional officials issue orders and instructions throughout the day and public address systems disturb routinely; security gates ring; and televisions blare continuously (Johnson, 2015).

Steyn and Hall (2015) maintain that incarceration is considered a highly stressful experience that has effects on the well-being of offenders This is because of the correctional centre environment and its nature, which often produce psychological effects such as depression and anxiety that are not conducive to the goals of rehabilitation and reduction of re-offending (Crowley, 2019; Steyn & Hall, 2015). Overcrowding is another huge problem (The Judicial Inspectors for Correctional

Services, 2018). It is particularly challenging to provide suitable learning opportunities in an overcrowded correctional centre. For example, arguments between women are a consistent feature and tension exists throughout where the slightest issue can spark a major altercation (Runell, 2016). According to the Department of Correctional Services (2019) report state that the total number of inmates in South African prisons was 162 875 on 31 March 2019 and furthermore, that the continuous growth in offender populations creates challenges, pressure and demands in the corrections' operating environment (DCS, 2019). Johnson (2015) also points out that two decades into democracy, there are still many issues of importance happening within the correctional discourse in South Africa. Some of these issues include overcrowding, gangsterism, violence and drug abuse, which negatively affect programmes aimed at rehabilitation and reintegration of offenders, and further impede aspects of learning.

Outside of the correctional centre environment, studies on learning environments focus on behaviour management, classroom rules and discipline, motivation of students, teaching methods, the setup of classroom tools and events in the classroom, which are all learner-centred (Özerem & Akkoyunlu, 2015). The current view about learner-centred education is that materials should be designed according to students' different learning styles, and that this supports an effective learning environment (Rao, 2018). Such a learning environment is crucial to promote lifelong learning. The current generation of learners do not just want to sit the entire day listening to their teachers doing most of the talking in the classroom (Malacapay, 2019). Therefore, designing the learning environment is a complicated process, which includes different variables such as the learners, teachers, classroom environment and teaching tools. Unless a learning environment is designed in advance, it will not only be inadequate in the attainment of learning goals but will also become an environment without the necessary control (Mei, 2018; Özerem & Akkoyunlu, 2015).

Johnson (2015) writes that unless inmates regard themselves as 'hustlers' and accept their challenging environment, they will not be able to achieve their long-term goals of learning. This is mainly because life in the correctional centres is often not conducive to teaching and learning. Offenders report difficulties with concentration

and lack of support and encouragement from correctional centre officials (Crowley, 2019).

The next section focuses on female offenders and their learning experiences inside the correctional centre environment.

1.2.2 Female offenders and their learning experiences inside the correctional centre

Female offenders represent a small but increasing proportion of offenders worldwide (Crowley, 2019). They face specific barriers in accessing programmes and services in the correctional centre and there are often limited rehabilitation opportunities for them. Programmes that do exist are often heavily gendered and do not cater for females' particular backgrounds and rehabilitation needs.

Steyn and Hall (2015) reported that there are roughly 10 million offenders incarcerated around the world and the number of female offenders globally is around half a million or between two and nine percent of the total population of offenders. South Africa ranks seventh in the world with respect to the number of incarcerated offenders. On 31 March 2018, the population of South African offenders stood at 164,129 inmates (The Judicial Inspectors for Correctional Services , 2018). Although the number of female offenders in South Africa is lower than in other countries, such as the United States of America (USA) or the United Kingdom (UK), the number appears to be on the increase (Steyn & Hall, 2015). The total number of sentenced female offenders in South African correctional centres on 31 March 2019 was about 3% of the total population (DCS, 2019).

Crowley (2019) stated that most correctional centres were designed for men and fail to meet the basic needs of women offenders. Therefore, correctional centre education should take into consideration the special needs of women because the educational requirements of women are different from those of men (Crowley, 2019). Kabeta (2017) is of the opinion that there is a lack of research on the relevance of educational provision for women but that the few existing research studies that have been conducted show that most penal institutions are not serious about addressing

the special educational needs of female offenders. This view is supported by Adebayo and Babalola (2019) who indicate that few known studies have been carried out on the learning experiences of female offenders in Nigeria. Female offenders do face barriers when it comes to participation in vocational programmes due to the lack of available staff and resources, long waiting lists and getting no answer to their applications and lack of information about the available opportunities of vocational education in the correctional centre (Brosens et al., 2015; Crowley, 2019).

The mental and psychological effects of life in correctional centres affects offenders and may be detrimental to learning (Crowley, 2019). Steyn and Hall (2015) found that the nature of mental illnesses suffered in the correctional environment may also play a role in the female offender's attitude towards learning. (2015) The authors maintain that incarcerated females present a higher level of major depressive disorder (MDD) and post-traumatic stress disorder (PTSD) than the general public, and that the prison environment may worsen existing problems in women. This notion was also supported by the international study of mental illnesses, which indicated a prevalence of MDD in female correctional centres being at 14.1% (Steyn & Hall, 2015). However, through education, female offenders may achieve mental freedom, which may reduce the propensity to commit crime through participation in organised learning activities in the correctional centre (Adebayo & Babalola, 2019).

The next section discusses the learning style preferences of female offenders.

1.2.3 Learning style preferences of female offenders

Without sufficient knowledge about students' learning style preferences, teachers are not likely to provide the required instructional variety to match the diversity that exists among students in a class (Malacapay, 2019). Thus, an understanding of the students' learning styles can help educators adjust their teaching styles to address the needs of the students. Rehabilitation or treatment programs and interventions have been shown to be effective in the correctional centre (Mbatha et al., 2019). However, their effectiveness is dependent on the way in which they are delivered and the skills of the staff who deliver such programs (Jaleel et al., 2019; Trotter,

Flynn & Flynn, 2016). Trotter et al. (2016) found that women perceived correctional centre programs as helpful if they liked the attitude of the facilitator and seemed to respond to facilitators with good relationship skills and those who are collaborative and help them with their problems.

However, Brosens et al. (2015) found that female offenders are more likely to participate in vocational education. But the greatest problem they reported is overcrowding in the correctional centres, lack of available staff and resources for certain women, and this can lead to negative effects. Thus, for learning to be effective in the correctional centres in South Africa, attention needs to be paid to female offenders with respect to their learning styles preferences.

1.2.4 The role of an educator/facilitator in the provision of education inside a correctional centre

Correctional centre educators and trainers should be fully qualified and supported professionally and systemically to ensure that provision of education is commensurate with that in the external community (Crowley, 2019; Hawley et al., 2013). Johnson (2015) reports that there are challenges facing most African countries in this regard, for example, lack of qualified adult educators able to execute teaching and learning activities in correctional facilities. In some countries on the continent, lack of clear policies, funding, facilities and a shortage of qualified teaching staff and use of unqualified volunteers are major challenges facing penal institutions. The use of qualified teachers in correctional centres is a priority that the Department of Correctional Services (DCS) in South Africa needs to address seriously in order to reduce attrition and recidivism rates. In addition, for teaching and learning to happen, resources and services must be available (DCS, 2019; Johnson, 2015; The Judicial Inspectors for Correctional Services, 2018).

The traditional perception of teaching has for a long time centred on how much content has been learnt by a student, resulting in the lecture method as the main teaching method (Gulnaz et al., 2018; Masvosve & Muller, 2015). This method of teaching is progressively being replaced by one that focuses on “how well” the content has been learnt.

1.2.5 Offenders' motives for participating in educational programmes

According to Johnson (2015) offenders participate in educational programs offered by correctional centres for different reasons and motives. There could be a positive perception like a desire for education that some of these offenders may not have had before their incarceration. Other positive perceptions are hope and perceived opportunities that may be anticipated after incarceration. On the contrary, there could also be negative perceptions about participating or not participating in learning. Some negative perceptions could include lack of support from families and correctional centre officials, previous bad experiences with school, low self-esteem, apathy or lack of empowerment (Crowley, 2019; Johnson, 2015).

In addition, offenders who express regret for their misdeeds are influenced into participating in correctional education mostly by external forces like judges, parole boards, and correctional officers (Johnson, 2015), thereby feeling obligated to study as part of their rehabilitation. Education in the correctional centre is expected to generate learning experiences which deter a recurrence of criminal behaviour by transforming offenders through correctional activities (Adebayo & Babalola, 2019). For those who have previously missed out on educational opportunities, life in the correctional centre can provide offenders with the opportunity to acquire basic literacy or numeracy skills or expand their existing knowledge (Crowley, 2019).

There are several factors that influence offenders' propensity to drop out of educational programmes inside the correctional centre. For example, female offenders may drop out of school or training programs to seek a job in the correctional centre that pays the most in order to send money home to their children or families (Crowley, 2019; Johnson, 2015). However, participation in education programmes to obtain a qualification is not an immediate priority for offenders who have to go through the traumatic effects of being incarcerated, such as isolation, separation from family and friends, bullying, and court appearances (Crowley, 2019). As a result, the majority of school going offenders dislike school, have difficulty in attending classes, and have disobedient social behaviour. Another factor that results in non-attendance of classes is that some offenders are at the same attending behaviour management courses to deal with the effects of not being able to control

angry bursts (Crowley, 2019; Mkosi, 2013; Picciano, 2017). In view of the reasons and motives for participation or nonparticipation in educational programmes highlighted above it is imperative for training designers and facilitators inside correctional centres to understand these and the different learning styles of offenders in order to enhance their learning experiences.

1.3 PROBLEM STATEMENT

Learning styles of learners influence teaching strategies directly or indirectly, and identifying the learning styles of learners in school is considered a teacher's responsibility (Malacapay, 2019). For Monteiro et al. (2016), learning styles are an important element for teachers and teacher educators to consider in any learning environment. Thus, students' motivation and performance improve when instruction is adapted to their learning preferences and styles. The primary objective of this study is to examine the learning style preferences of offenders at the Johannesburg Female Correctional Centre. Different theorists and educationists believe that learning styles is an important concept worthy of study (Gulnaz et al., 2018; Malacapay, 2019). The focus has shifted from traditional teacher-centred to learner-centred approaches, and the focus of researchers and methodologist therefore, is to pay attention to the development of teaching styles and strategies that correspond to the dominant learning style of a learner (Gulnaz et al., 2018). Research confirms that the alignment of teaching strategies and learning styles has a positive impact on the academic achievement of students (Fayombo, 2015). This finding is supported by Gulnaz et al. (2018), who indicate that learners who know their learning styles make their learning happen and can better exploit learning opportunities in the classroom.

Therefore, it is vital for facilitators or teachers to be aware of their learners' needs, capacities, potential and learning style preferences in order to facilitate effective classroom teaching and learning (Mei 2018; Seyal & Rahman, 2015). In order to increase motivation and improve students' performance as well as to address their learning styles, it is important to update and adapt teaching methods and evaluate their efficacy (Malacapay, 2019). By determining a student's preferred learning style, the teachers are able to identify possible challenges the student may be experiencing in a particular course or courses. Offenders need education and

training programmes that not only teach them to read and write but also provide them with the necessary skills that will promote a positive transition to society when they are released (Mbatha et al., 2019). Therefore, efforts to consider their learning styles would help promote better participation in all correctional education programmes and go along way to help them in the rehabilitation processes.

According to Malacapay (2019), learning is more effective when related to real life situations. The danger of not being aware of the importance of learning styles is that the educator may not understand that everyone has a unique learning style and that even though learners learn in the same environment, over the same duration, and may be internalising the same facts and events, their learning approaches can be different (Jaleel & Thomas, 2019). Thus, variety in instructional approaches can be used to address student diversity, and addressing the preferred learning styles of the students acknowledges the uniqueness and differences of such students (Mei, 2018). Consequently, both low and average achievers could achieve high scores if they were instructed according to their preferred learning styles (Gulnaz et al., 2018).

From the foregoing discussion, it is evident that learning is of importance to both the offender and the correctional centre; the former being for rehabilitation purposes and the latter being to reintegrate offenders back into society. The review of literature does not point to existing studies that have focused on the learning style preferences of offenders in the South African correctional context. However, it is clear that understanding learning style preferences is important in any learning environment, including correctional centres. Yet correctional centres are all too often reported as a negative learning environment with the risk that the correctional sentence among other factors, could aggravate factors associated with reoffending (Crowley, 2019). Moreover, due to growing populations in the correctional centres, there is a risk that education could drop down the list of priorities of the correctional regime due to the strain on resources and funding (Crowley, 2019; Hawley et al., 2013).

The aim of the modern correctional centre is to protect the public first, then to rehabilitate (Adebayo & Babalola, 2019). The correctional centre is primarily a place of punishment with access to rehabilitation. However, a correctional centre must be a centre of information and not only of punishment (Adebayo & Babalola, 2019). A

secure containment and rehabilitation environment are what is expected from correctional centre management. Punitive approaches to offenders, regardless of their gender or offences, do not lead to positive outcomes (Adebayo & Babalola, 2019). Tough love programs of various types also do badly. What works are the interventions and programs which are generally defined as rehabilitation or treatment because these are successful in reducing recidivism (Johnson, 2015; Mbatha et al, 2019). Providing learning opportunities in the correctional centre is one of the important interventions that can help in reducing reoffending (Adebayo & Babalola, 2019). According to Mkosi (2013, p. 3), "Literature find that offenders engaged in activities, such as education are less likely to be riotous, plot escape, or attempt to destabilise the system than offenders who are locked up in a cell the whole day with very little to do except give vent to their grievances against the system which put them there and the correctional staff who are then responsible for their containment". Therefore, with the increased number of offenders crowding correctional centres, and security being the main focus that supports the traditional view of locking offenders up and throwing away the key, there is a need to reconsider learning as a priority (Adebayo & Babalola, 2019; Crowley, 2019; Mbatha et al., 2019).

This study seeks to contribute towards the understanding of the learning style preferences of offenders at the Johannesburg Female Correctional Centre. This centre is one of the nine correctional facilities out of a total of 243 correctional facilities across South Africa that are designated only for female offenders. A review of the current literature on the learning styles revealed the following challenges which impact on learning experiences and which are prevalent in most South African correctional centres (Crowley, 2019; Johnson, 2015):

- There are high numbers of offenders dropping out of school and correctional programmes.
- There is overcrowding in the correctional centres and this is impacting on learning.
- There is a lack of qualified teachers and trainers in the correctional centre.

This study seeks to contribute towards a solution by way of examining the learning style preferences of offenders at the Johannesburg Female Correctional Centre and establish how these preferences influence offenders' learning experiences. It is hoped that the outcomes of this study may shed light towards understanding the circumstances related to female offenders' susceptibility to drop out from correctional and educational programmes at the Johannesburg Female Correctional Centre.

1.4 RESEARCH QUESTIONS AND OBJECTIVES

1.4.1 Central research question

The following central research question was formulated for this study:

What are the learning style preferences of offenders at the Johannesburg Female Correctional Centre and how do these preferences influence offenders' learning experiences?

1.4.2 Research sub-questions

The following research sub-questions were operationalised from the central research question:

- **Sub-question 1:** What instructional methods are used at the Johannesburg Female Correctional Centre and how do these influence offenders' learning experiences?
- **Sub-question 2:** How do offenders at the Johannesburg Female Correctional Centre prefer to learn and how do these preferences influence their learning experience?
- **Sub-question 3:** What instructional medium are used at the Johannesburg Female Correctional Centre and what do offenders prefer?
- **Sub-question 4:** What are the practical recommendations that could be made to ensure that Johannesburg Female Correctional Centre considers the diverse learning styles of offenders in order to optimise their learning experiences?

1.4.3 Primary objective of the study

The primary objective of this study is to examine the learning style preferences of offenders at the Johannesburg Female Correctional Centre and to establish how these preferences influence offenders' learning experiences.

1.4.4 Secondary objective of the study

The following secondary objectives were formulated from the primary objective:

- **Research objective 1:** To investigate the instructional methods used at the Johannesburg Female Correctional Centre and to establish if these influence offenders' learning experiences.
- **Research objective 2:** To determine how offenders at the Johannesburg Female Correctional Centre prefer to learn and how these preferences influence their learning experiences.
- **Research objective 3:** To investigate the instructional medium used at the Johannesburg Female Correctional Centre and to establish the preference of offenders.
- **Research objective 4:** To propose practical recommendations which would ensure that the Johannesburg Female Correctional Centre integrates the diverse learning styles of offenders in order to optimise their learning experiences.

1.5 CONTEXT OF THE STUDY

The study took place at the Johannesburg Female Correctional Centre, which is a very high security and sensitive environment. The Johannesburg Female Correctional Centre is one of 243 correctional centres in South Africa under the control of the Department of Correctional Services. It is one of 9 female designated correctional centres nationally (DCS, 2019). The outcome of this study may assist the Department of Correctional Services to improve the efficacy of interventions which are made available to offenders. The study has no intention of exposing any

information that may create a security risk at the Johannesburg Female Correctional Centre. Since the research was conducted in the correctional centre, the researcher had to abide by the policies and protocols laid down by the Department of Correctional Services. These include having an internal guide at all times while collecting data in the facility; adhering to the general ethical principles when conducting research in the centre; and adhering to the code of conduct of the centre.

1.6 SIGNIFICANCE OF THE STUDY

This study examines the learning style preferences of offenders at the Johannesburg Female Correctional Centre. The investigation was conducted in order to establish the learning styles that female offenders prefer while engaged in learning at the Johannesburg Female Correctional Centre. The findings may benefit offenders at this target correctional centre to know their preferred learning style(s) in order to optimize their learning experiences. Furthermore, the findings of this study may also assist learning designers, facilitators and assessors within the correctional centre to make evidence-based decisions when they design learning programmes and activities; when they facilitate lessons and when they conduct assessments. Learning makes a difference to offenders when they are released from the correctional centre and is a means of helping them to reintegrate into society. It also provides meaningful activities for offenders during their incarceration and it enhances their life experiences during their stay within the correctional centres (Kabeta, 2017).

The Department of Correctional Services (DCS), the Johannesburg Female Correctional Centre and the training service providers may benefit from the findings of this study, which seeks to support a fit for purpose educational provision for offenders. If the Johannesburg Female Correctional Centre and the training service provider acknowledge the different learning styles that offenders prefer in their learning and implement them where necessary, this may lead to the achievement of learning and programme outcomes. The community may also benefit from this study because when learned offenders are reintegrated into the community, there may be long-term sustainable change in attitude and behaviour as indicated by Mkosi (2013). Overall, the benefits of this study may be significant at general community level, at the level of the Department of Correctional Services, the Johannesburg

Female Correctional Centre, the training service providers, and at the level of individual offenders.

1.7 DESCRIPTION OF KEY TERMS

The following definitions clarify the terms used in this study:

Incarceration: Refers to confinement to a correctional institution after being sentenced by a court and placed under the jurisdiction of a Department of Corrections (Leflore, 2016).

Correctional centre: Republic of South Africa (2012) define correctional centre as any place established as a place for the reception, detention, confinement, training or treatment of persons liable for detention in custody or placement under protective custody. It refers to all land, outbuildings and premises adjacent to any such place and used in connection therewith and all land, branches, outstations, camps, buildings, premises or places to which any such persons have been sent for the purpose of incarceration, detention, protection, labour, treatment or otherwise, and to all quarters of correctional officials used in connection with any such correctional centre, and for the purpose of sections 115 and 117 includes every place used as a police cell or lock-up.

Correctional Programmes: Programmes that are designed to enhance the life and vocational skills which help to transform critical the thinking skills of offenders (Leflore, 2016).

Vocational education: Programs focused on training adults to perform a specific task (plumbing, auto mechanic, carpentry, cosmology) in preparation for performing the task on job site (Zhao et al., 2019).

Learning: Learning is a complex lifelong education process of how a human being absorbs information and experiences, memorizes and processes them to be further transformed into knowledge, skills, behaviour and attitudes (Alzaghoul, 2015).

Learning styles: Learning styles is a preferred method of using one's abilities. Developed from the experiential learning theory, it is composed of several categories including accommodator, diverger, converger and assimilator (Dean, 2018). Each style incorporates two of four learning sub-categories, including active and reflective, sensitive and intuitive, visual and verbal and sequential and global.

1.8 ASSUMPTIONS OF THE STUDY

Researchers should be able to understand and articulate beliefs about the nature of reality, what can be known about it and how should such knowledge be attained (Rehman & Alharthi, 2016). This study is underpinned by the following assumptions:

1.8.1 Ontology

According to Kivunja et al. (2017) ontology is the philosophical study of the nature of existence or reality, of being or becoming, as well the basic categories of things that exist and their relations. This research examined the learning style preferences of offenders at the Johannesburg Female Correctional Centre, and the researcher was guided by a positivist philosophy, which considers the world to be external and objective. The researcher believes in the single reality pertaining to the phenomenon under investigation, and that it can be understood, identified and measured.

1.8.2 Epistemology

According to Saunders (2009) epistemology concerns assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how people can communicate knowledge to others. The data collected from this study was used to generate findings that make theoretical contributions towards understanding how female offenders inside a correctional centre prefer to learn. This study followed a scientific process that was underpinned by a rigorous methodology.

1.8.3 Axiology

Axiology refers to the role of values and ethics within the research process. This incorporates questions about how researchers deal with both own values and those of participants (Saunders, 2009). The researcher was guided by personal values as well as the Department of Correctional Services, and UNISA ethical guidelines and values through all the processes of this study.

1.8.4 Methodology

Methodology is an articulated, theoretically informed approach to the production of data; and it refers to the study and critical analysis of data production techniques (Rehman & Alharthi, 2016). This study followed a rigorous methodology that was underpinned by a positivist philosophy. The research approach, research design, research methods, and data analysis techniques were all aligned to the positivist philosophy and were connected to the research questions of the study. Furthermore, the researcher had to ensure that all safeguards as per the methodological framework and ethical protocols are adhered to in order to ensure that the study and its findings are valid and reliable.

1.9 RESEARCH PHILOSOPHY

This study was underpinned by a positivist philosophy. Aliyu et al. (2014) found that the idea of positivism came into being as a truth-seeking paradigm in the latter part of the 19th century through Auguste Comte's denunciation of metaphysics and his contention that technical and scientific facts can barely disclose the reality concerning truth.

Kivunja et al. (2017) concluded that the positivism paradigm is characterised by the belief that theory is universal and that law-like generalisations can be made across contexts, as well as the assumption that context is not important. Kivunja further noted that positivism also believes that the truth or knowledge is out there to be discovered by research. Therefore, positivism assumes that reality exists independently of humans; is not mediated by human senses and is governed by

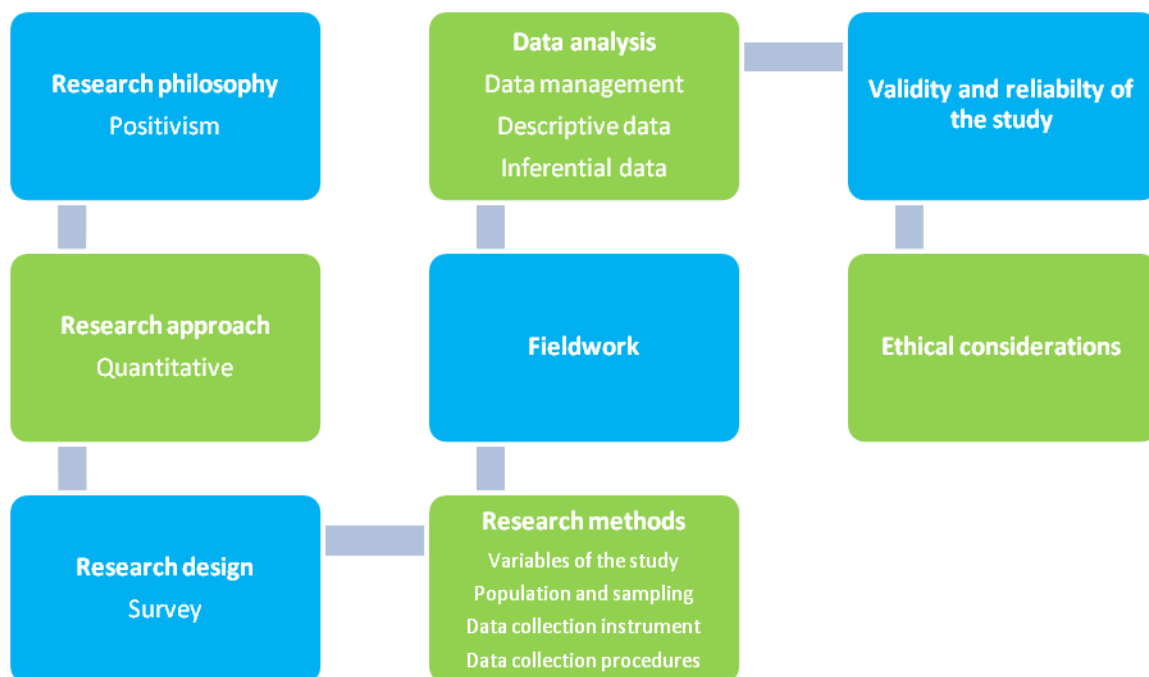
immutable laws (Rehman & Alharthi, 2016). However, the positivist paradigm is often validated by applying four criteria namely, internal validity, external validity, reliability, and objectivity. A detailed discussion about this research philosophy is presented in Chapter 3 (Research methodology).

1.10 RESEARCH METHODOLOGY

Research is a systematic investigation that aims to generate knowledge about a particular phenomenon (Wilbraham, 2006). Therefore, it is a way to find out, learn more and understand situations or any areas of interest in the most accurate and complete way possible. Some study objectives seek to make standardised and systematic comparison, others seek to study a phenomenon or situation in detail. These different intentions require different approaches and methods, which are typically categorised as either quantitative, qualitative or mixed methods (Wilbraham, 2006). The research methodology which guided the empirical part of this study is summarized in Figure 1.1 below:

Figure 1.1

Methodological framework applied in this study



Source: Author's own compilation

A detailed discussion of the elements of the methodological framework presented in Figure 1.1 is presented in Chapter 3 (Research methodology).

1.11 ETHICAL CONSIDERATIONS

As a concept, research ethics refers to a complex set of values, standards and institutional schemes that help constitute and regulate scientific activity (Kaleberg, 2006). These may include honesty, objectivity, and respect for intellectual property, social responsibility, confidentiality and non-discrimination. The researcher had to abide by the Unisa Policy on Research Ethics and the Policies and Ethical Guidelines of the Department of Correctional Services (DCS) in the conduct of this research. The researcher also observed the ethical considerations that apply to social science research as stated by Kaleberg (Fleming, 2018; Kaleberg, 2006). A detailed discussion of actions that the researcher implemented in this study to ensure ethical compliance is presented in Chapter 3 (Research methodology).

1.12. THE DIVISION OF CHAPTERS

This dissertation consists of the following chapters:

Chapter 1: Scientific orientation of the study

The chapter provides the background to this study. The chapter presents the problem statement, research questions and objectives. The chapter also outlines the context and significance of the study. An overview of the research methodology and ethical considerations is also presented. The chapter presents a structural outline of the dissertation and ends with a summary.

Chapter 2: Learning and learning styles within a correctional context

The chapter conceptualizes learning and learning theories. The chapter further discusses aspects pertaining to learning within a correctional environment. Furthermore, the chapter discusses aspects pertaining to women experiences of

learning within correctional environments and the importance of learning styles in a correctional environment. The chapter ends with a summary.

Chapter 3: Research methodology

The chapter presents a detailed discussion of the methodological framework used in this study. This includes a discussion of the research philosophy, the research approach, the research design and the research methods. Furthermore, the chapter discusses the data analysis framework adopted for the study, aspects pertaining to validity and reliability, as well as aspects pertaining to ethical considerations. The chapter concludes with a summary of problems encountered in the conduct of the study.

Chapter 4: Presentation, analysis and interpretation of results

The chapter focuses on the presentation, analysis and interpretation of results. The chapter also presents findings that are formulated from the results of the study. The chapter ends with a summary of key findings.

Chapter 5: Conclusions, limitations and recommendations

This chapter presents the conclusions of this study which are aligned to the research objectives. The chapter also presents the limitations of the study, the practical implications and recommendations for further studies. The chapter ends with a conclusion that summarises the dissertation.

1.13 SUMMARY

This chapter discussed the background to this study. The chapter also presented the problem statement, research questions and objectives of the study. Furthermore, the chapter outlined the context and significance of the study. Furthermore, the chapter provided an overview of the research methodology and ethical considerations and a structural outline of the dissertation. The next chapter (Chapter 2) discusses literature pertaining to learning and learning styles within a correctional context.

CHAPTER 2: LEARNING AND LEARNING STYLES WITHIN A CORRECTIONAL CONTEXT

2.1 INTRODUCTION

This chapter focuses on learning and learning styles within a correctional context. The discussion begins with the conceptualisation of learning and learning theories. Thereafter, the discussion focuses on the evolution of learning theories, importance of learning theories and their implications for education. Furthermore, the chapter discusses aspects of learning within a correctional environment, women experiences of learning within correctional environments, and the importance of learning styles in a learning environment. The chapter also discusses the different learning style methods and concludes with a summary.

2.2 CONCEPTUALISING LEARNING

Learning is a complex lifelong educational process which has to do with how humans absorb information and experiences, how they memorise and process them to be further transformed into knowledge, skills, behaviours and attitudes (Alzaghoul, 2015). According to Bosman (2015) learning is the act of actively constructing knowledge, which can involve new knowledge or the revision of prior mental constructs. Imenda (2018) views learning as an encompassing acquisition of new knowledge, skills, values and attitudes as a result of instruction, study experience or intuition, leading to modified understanding or action. Learning is shaped by interactions among the environmental factors, relationships, and learning opportunities experienced both in and out of school (Darling-Hammond et al., 2020).

Therefore, learning is connected to the brain. The brain is composed of the right and left hemispheres, which work together in order for an individual to understand the world (Bosman, 2015). Accordingly, when a person is involved in a learning task, such as learning to speak an additional language, learning the music or lyrics of a song or drawing a mind map, both hemispheres in the brain are used. Learning is enhanced by challenge and inhibited by threat, and the human brain processes parts

and wholes simultaneously (Riznar, 2016). Darling–Hammond et al. (2020) assert that the development of the brain is an experience-dependent process which activates neural pathways that permit new kinds of thinking and performance. Riznar (2016) also states that the brain depends on interactions with other people to make sense of social situations, and that feedback is important to learning. Hence, learning relies on memory and attention, and the brain remembers best when facts and skills are embedded in natural contexts. Emotions and social contexts shape neural connections, which contribute to attention, concentration and memory, and to knowledge transfer and application (Darling-Hadmmmond et al., 2020). Therefore, understanding how developmental processes unfold over time in different contexts can contribute to more supportive designs of learning environments.

The next section discusses aspects of learning within a correctional environment.

2.3 LEARNING WITHIN A CORRECTIONAL ENVIRONMENT

RSA (2012) Correctional Services Amendment Act No. 32 of 2012. Pretoria. states that the purpose of a correctional system is to maintain and is it not promote a just, peaceful and safe society by enforcing sentences of the courts; detain all inmates in safe custody whilst ensuring their human dignity; and promote the social responsibility and human development of all sentenced offenders. Therefore, learning in the correctional environment may be considered the human development of sentenced offenders. Patrie (2017) observed that education in the correctional centres straddles justice and the education system; systems that are often in conflict over philosophy, policy and practice. Patrie is also of the view that for correctional educators this could involve overcoming the initial culture shock of correctional environment life while addressing personal knowledge and skills gaps in areas such as alternative education, security and law. Novek (2017) refers to the correctional environment as an environment that stifles hope, triggers violence, and teaches cynicism, suspicion and manipulation as tactics for survival. For that reason, learning should be grounded in principles of human connection rather than in rules, performance standards and evaluation. Different countries' perspectives regarding learning in the correctional environment are discussed next.

2.3.1 Global perspectives related to learning in the correctional centre environment

Szifris et al. (2018) report that every correctional centre in England and Wales, and most prisons in Western countries, have a dedicated prison education department. Each department offers a range of courses and qualifications. In recent years, the focus has been on basic skills with literacy, numeracy and applied skills for the job market taking precedence. Szifris et al. (2018) further report that, in England and Wales, there has been a renewed focus on the role of education with attention paid to the importance of more holistic education and the role of unaccredited programmes. Markmiller (2018) asserts that within Europe, prison education means different things to different people. Furthermore, Markmiller noted that in the correctional centre context it is very important to clarify the difference between education and training because so much of what is deemed education in the correctional centres is in fact training or workplace training. This is essential because education and training have different aims, objectives and methodologies. Novek (2017) observed that participating in educational activities reduces recidivism and offenders' return to crime and that it also increases the likelihood of finding work (Novek, 2017; Szifris et al., 2018). Many individuals incarcerated in United States correctional centres are disadvantaged in terms of low educational attainment, which when they get released, makes it challenging for them to find employment that provides a living wage (Davis, 2020).

However, education can act as a refuge, with the education department representing a different 'emotional climate' to that which prevails in the wider correctional centre community (Novek, 2017). Furthermore, Szifris et al. (2018) noted that educational activities relieve the boredom of prison, helping offenders to cope with the pains and deprivations of prison life and providing a space for pro-social modelling, mutual support and positive socialisation. For example, cognitive skills like speaking, writing, reading and quantitative reasoning may help offenders benefit more from drug treatment, anger management and other pro-social interventions that they encounter in correctional environments. However, offenders in the U.S. who receive general education and vocational training are significantly less likely to return to prison after

release and are more likely to find employment than peers who do not receive such opportunities (James & Crabbe, 2016).

2.3.2 African perspectives related to learning and teaching in the correctional environment

Kabeta (2017) found that in Africa, the African Charter on Human and Peoples Rights, in line with the Universal Declaration of Human Rights, respects the rights of individuals to be treated as humans and recognises the legal status of individuals. The Charter asserts that every individual shall have the right to respect based on the dignity inherent in them as human beings and recognition of their legal status as humans (Kabeta, 2017). All forms of exploitation and degradation of humans, particularly slavery and the slave trade, torture, cruel, inhuman or degrading punishment and treatment shall be prohibited. Martin and Jefferson (2016) write that correctional centres across Africa vary both in terms of use and conditions. Yet there are also some similarities. For example, the role of the history of colonialism and the role and power of the discourse on human rights, good governance and democracy were found to have similarities. Martin and Jefferson further indicated that there is a conception that correctional centres in Africa are places of squalor, degradation, ill-health, poor hygiene and illegitimate violence. This has resulted in the perception that correctional centres are a failing institution, embodying deviant behaviour in need of rehabilitation (Adebayo & Babalola, 2019).

However, an alternative body of knowledge has emerged which attempts to take correctional centres in Africa seriously as objects of descriptive, empirical scrutiny. For example, in a field work-based and ethnographic orientation study in African correctional centres, a careful documentation of the texture and grain of everyday dynamics and relations was undertaken (Martin & Jefferson, 2016). Adebayo and Babalola (2019) found that the prison structure in south-western Nigeria changed from being a deterrent prison system to a correctional facility wherein the welfare services include the educational experience. Similarly, rehabilitation and reformation of offenders is one of the core functions of the Kenya Correctional Centre (Mbatha et al., 2019). Kabeta (2017) found that education plays a key role in development in both developed and developing countries and that education provision for citizens is

seen as an instrument by which among other major means, development can be sustained. Kabeta further observed that besides its role as a crucial weapon for human and national development, the fact that education is a human right puts pressure on both national and international communities to consider it seriously.

However, the primary task of prison education is to increase the chances of employment by ex-convicts and reduce recidivism (Adebayo & Babalola, 2019). Hence, Clement et al. (2018) highlight the issue of mental illness among people in the correctional centres. There is a lack of improvement despite numerous inquiries into the management of mentally affected people in the correctional centres. Although it is widely acknowledged that most detainees experience weakened mental health, mental disorders seem to be the most frequent pathologies experienced by offenders (Clement et al., 2018).

2.3.3 South African perspectives on learning/education inside the correctional facilities

DCS (2019) indicates that the Department of Correctional Services are responsible for policy development, programme design and direct delivery of corrections across the country. Thus, the delivery of correctional services is a labour intensive enterprise that survives and thrives through the officials who ensure that correctional centres are manned seven days a week for 24 hours every day. Vandala (2019) found that all incarcerated individuals are given access to education and training programmes as a basic right in compliance with section 29 (1) of the Constitution of the Republic of South Africa. Vandala further states that correctional education is utilised in rehabilitation programmes to transform offenders into law abiding and productive citizens. South Africa's 243 correctional centres accommodate more than 160,000 inmates, including more than 16,000 who are serving life sentences (The Judicial Inspectors for Correctional Services, 2018)

On the other hand, Johnson (2015) found that correctional centres should be separated according to gender and age, namely males, females and the youth. Regarding the accommodation rule, the standard minimum rule for treatment of offenders' protocol stipulates that as far as possible, a cell should have a maximum

of four offenders with each having their own bed, chair, and desk to read and work from and that a cell must have a flush toilet for proper sanitation. However, Johnson observed that in the South African correctional facilities, overcrowding is a serious problem and that this rule does not work. The high offender population at the correctional centres has been identified as a key challenge, which negatively affects the ability of the Department of Correctional Services to guarantee the rights of inmates and to create an environment that is conducive for rehabilitation (DCS, 2019). Moreover, the Department of Correctional Services reported that the dramatic increase in the inmate population, from 95 070 during 1991/92 to 185 501 during 2004/05 (a 95% increase) compelled them to revisit their strategy to alleviate overcrowding. Consequently, DCS (2019) stated that a multipronged strategy was developed and implemented from 2006 to combat the risk of overcrowding. In order to prevent fragmented management of the various dimensions within the multipronged strategy, it was decided to establish a National Overcrowding Task Team, Regional Overcrowding Task Teams (ROTTs) and Management Area Overcrowding Task Teams (MOTTs) to facilitate and monitor progress in this regard (DCS, 2019).

The population of Remand Detainees (RDs) remains a major contributor to overcrowding (DCS, 2019). The White Paper on Remand Detention was developed as a cluster policy to guide the detention management of remand detainees. Several operational policies were developed to give effect to the proposals made in the White Paper, such as the policy procedures on disciplinary processes and privilege system. Vandal (2019) reported that correctional education is perceived to have the potential of reducing offending behaviour and that improving offenders' educational qualifications may have a positive impact on their self-esteem and confidence. Therefore, there is a need for the Department of Correctional Services to give effective attention to reformation and rehabilitation of the offenders and the reduction of the crime rate in society (Mbatha et al., 2019).

The foregoing discussion revealed that learning within a correctional environment has many challenges worldwide. There are some common challenges like overcrowding and lack of resources, and the correctional environment itself that is not conducive for learning. The literature also revealed that regardless of the challenges faced by the correctional centres worldwide, learning is of importance.

When offenders attend schools in correctional facilities, they are exposed to well-structured correctional education programmes to prepare them for successful lives as law abiding and productive citizens on release (Vandala, 2019). Therefore, this study seeks to contribute to the improvement of the learning experiences of offenders by examining their learning style preferences at the Johannesburg Female Correctional Centre.

2.4 OFFENDERS' NEEDS AND LEARNING EXPERIENCES WITHIN CORRECTIONAL CENTRES

Crowley (2019) stated that the United Nations Standard Minimum Rules for the treatment of offenders were first approved in 1957 and revised in 2015. The revised rules are known as Nelson Mandela Rules. Accordingly, the rules reiterate that the purpose of imprisonment is to protect society against crime and to reduce recidivism. Therefore, it is expected that a correctional centre's administration should offer education, vocational training and work, as well as other forms of assistance that are appropriate and available, including those of a remedial, moral, spiritual, social and health and sport-based nature (Crowley, 2019). The rules also stipulate that all rehabilitation programmes, activities and services should be delivered in line with the individual treatment needs of offenders. Kabeta (2017) observed that correctional centre education has been the subject of debate among scholars. Hence, the adoption of the Universal Declaration of Human Rights which guaranteed education to be a right for everyone, and which made its provision elsewhere necessary.

The Department of Correctional Services (DCS, 2019) reported that the implementation of rehabilitation-focused correctional services requires the provision of needs-based interventions that are specific to each offender. Crowley (2019) indicated that offenders should be held in facilities near their families and communities, as this aids offenders' rehabilitation and allows for longer family visits. However, due to the small number of female facilities in many countries, women are more likely to be located far from their families and the logistical difficulties and financial costs of visits to the correctional facilities can be very heavy.

Zhao et al. (2019) found that offenders with a generally healthy and frequent contact with the outside world, through visitors and phone calls, are more likely to participate in rehabilitation programs. The authors further state that it is possible that visits and phone calls to offenders' act as a pull factor for offenders' participation because such opportunities provide offenders with information, encouragement, emotional support and a sense of duty to others. However, Adebayo and Babalola (2019) found that there is a lack of educational learning experience in adult literacy, basic/ primary education, secondary and tertiary education in Ondo, Osun and Oyo correctional centres in Nigeria. The authors further indicate that though there are available vocational learning experiences such as hairdressing, tailoring, home economics, etc, the predominant learning experience was religious activity and correctional/counselling learning experience.

According to Crowley (2019), women face significant and complex educational challenges owing to a range of environmental, social, organisational and individual factors. Women offenders generally have less economic independence and also face more economic barriers when they should access fee-paying higher education opportunities whilst in the correctional facilities. Offenders are mere recipients of learning experiences, which are limited to what is available in the correctional facilities and their rights in planning and designing learning experiences are curtailed (Adebayo & Babalola, 2019). However, education within the correctional environment can take many forms and where possible, offenders should be allowed to participate in education outside correctional facilities (Crowley, 2019).

The next section discusses the importance of learning styles within a learning environment.

2.5 IMPORTANCE OF LEARNING STYLES WITHIN A LEARNING ENVIRONMENT

Kempen and Kruger (2019) found that the concept of learning styles emerged when higher education institutions started using integrated, interactive and active teaching strategies, rather than traditional methods. Preziosi et al. (2009) stated that several

classifications of learning styles and related concepts have been developed over the years. The classifications include Solomon's Inventory of Learning Styles, the Myers-Briggs Type Indicator, Howard Gardner's Multiple Intelligences, McCarthy's 4-Mat Systems, and Honey and Mumford's Social Approach to Learning, etc. Therefore, identifying the learning styles of students enables the adoption of a more student-centred teaching approach and the development of lifelong learners who possess the skills necessary for self-learning. Kempen and Kruger (2019) noted that the skill of recognising and reacting to different styles of learning maximises learning, regardless of the environment.

Carulla and Hipona (2018) are of the view that the acknowledgement of the learning styles of learners aids in the preparation of suitable approaches to students' education. Thus, learning styles denote to the learners the capability to understand and accept the information in the classroom. Learning style is viewed as the way in which individuals begin to concentrate on process and to internalize and retain new and difficult information (Bosman & Schulze, 2018). However, knowing learners learning styles makes it easy for the teacher to determine the appropriate teaching strategies to be applied in the learning process. Different learning style and methods are discussed next.

2.5.1 Different learning styles methods

There is a variety of learning styles that can be adopted for different learning environments. According to Montero et al. (2016), a learning style is defined as the characteristics, strengths and preferences in how people receive and process information or the way of learning that enables individuals to learn best by attending to a given modality. It is also the way people prefer to learn or way that is best for them to learn. Learning styles can also refer to a learner's unique way of grasping, processing and internalising academic information (Gulnaz et al., 2018). Hence, for the learner to reach their ultimate potential in learning it is best to take cognizance of their learning styles in order to motivate them and help them to develop into independent thinkers.

Furthermore, Saad (2017) states that learning styles are the manner in which and conditions under which learners most efficiently and effectively perceive, process, store and recall what they are attempting to learn. Jaleel and Thomas (2019) indicate that pupils learn differently and differ in the way of learning. This dissimilarity is because learners prefer different learning styles, have different motivation and differ from each other in self-confidence. Therefore, learning styles classify different ways pupils learn and how they approach information; like acting and reflecting, visioning and auditioning, and memorising and visualising logically and intuitively (Jaleel & Thomas, 2019). However, one of the major characteristics of a learning style is that it affects how students perceive information, construct it in their mind and make sense of their environment accordingly (Kanadli, 2016). Another major characteristic of a learning style is that it develops based on experiences and not genetic traits. In other words, the preferred learning style may change over time rather than remain stable, and is independent of both students' abilities and content (Kanadli, 2016).

Filiz Kayalar and Kayalar (2017) concluded that the various learning styles are an indication that every individual has a unique preference. Even though individuals may be learning in the same environment, for the same duration, and internalizing the same facts and events, their approaches can be different (Özerem & Akkoyunlu, 2015). A central implication for educators is that an integrated and dynamic development system is optimally supported when all aspects of the educational environment support all of the dimensions of a learner's development (Darling-Hadmond et al., 2020). It has been found that teaching methods have an effect on the students' ability to more successfully store and structure information, and that learning styles have an impact only on their ability to effectively structure information (Akademik & Etkisi, 2015).

Therefore, when teachers recognise that students have different learning styles, they start to become more sensitive to the students' individual differences and needs in the classroom (Bosman, 2015). This could ultimately enhance the teacher's teaching practices. When the students' learning styles and the teacher's learning styles do not match, the students are likely to become uncomfortable, bored and inattentive in class, do poorly in tests and ultimately become demotivated (Bosman, 2015). However, the mismatches of learning styles may be helpful to students as they may

be able to stretch their learning experiences by adopting their non-preferred learning styles (Mei, 2018).

Despite a low correlation between learning style and general academic success, there is a meaningful relation between learning styles and performance at an individual level. Being knowledgeable about students' learning styles is helpful for teachers to provide suitable support for the students and a more effective teaching experience while selecting their teaching strategies (Akademik & Etkisi, 2015). Bosman and Schulze (2018) indicate that learners poor performance may be related to the teaching style of the teacher because prolonged mismatches between the teaching style in the classroom and the learning styles of most learners can contribute to poor academic achievement and also to a negative perception of a subject. Bosman and Schulze further state that when the learners are taught in accordance with their learning styles, and when learners consider their own styles while studying, their academic achievement seems to improve.

Learning can take place by using different learning styles, depending on the environment and preference of the learner (Darling-Hammond et al., 2020). Some learning style methods focus on relatively narrow aspects such as preferences for visual input. Others are far more elaborate and focus on factors associated with personality issues. Some approaches attempt to identify how individuals process information in terms of cognitive style and others emphasise the body's role in learning (Bosman, 2015; Kempen & Kruger, 2019).

Some of the learning style models or methods that can be adopted are the Dunn and Dunn learning style method, Kolb's learning style method, Grasha and Reichmann learning style method, the 4MAT learning style method and VARK learning style method. These methods are discussed next.

2.5.1.1 The Dunn and Dunn learning style method

The Dunn and Dunn learning style model was developed by Rita and Kenneth Dunn in 1978 (Dunn, 1983). The Dunns posed a model that included 18 environmental, emotional, sociological, and physical student characteristics that they had learned to

respond to in New York classrooms with 30-37 students. In 1979 the Dunns added elements of cognitive style to their model and the paradigm was revised to include hemispheric preferences. In 1983 the left and right cognitive styles were incorporated under simultaneous and successive processing (Dunn, 1990). Therefore, the Dunn and Dunn learning style model observes the distinct differences in the ways students respond to instructional materials presented (Jaleel & Thomas, 2019). The Dunn and Dunn learning style model is based on the theory that a large portion of individuals can learn in different learning environments, with resources and approaches that cater for different learning styles (Dunn, 1983). Proponents of this method believe that every person has strengths and that individuals' learning preferences exist and can be measured in a reliable fashion (Akademik & Etkisi, 2015; Dunn & Honigsfeld, 2013; Gulnaz et al., 2018). Thus, some students learn through listening, some through experiencing and some primarily through watching (Jaleel & Thomas, 2019). The important thing is that the teacher has to determine the ways in which the student learns in the process. The Dunn and Dunn learning style method is represented through five stimuli, which are environmental, emotional, sociological, physiological, and psychological, and each stimulus contains individual elements, which contribute to the mastering of academic skills (Dunn, 1990). The five basic stimulants are discussed next.

(a) Environmental stimulants

Environmental stimulants include preferences pertaining to sound, light, temperature and furniture/seating arrangements (Dunn, 1983). Learners respond differently toward their environment. For example, when it comes to sound, some students need complete silence when they contemplate something and for other students it may be the opposite (Dunn, 1990). Furthermore, students may respond differently to light. Some students need much light to think better while others prefer less illumination (Gulnaz et al., 2018). Some learners are more comfortable when they are in an informal physical environment and other learners can learn more efficiently in a formal environment (Bhat, 2014). An example may be of a student who is seated in a hard chair (like the traditional wood or steel school desk). The resulting stress of sitting on such an uncomfortable chair is fatigue, discomfort and frequent postural

changes for which students are scolded often. More formal or comfortable seating can improve students' attitudes and increase their attention span (Bosman, 2015).

(b) Emotional stimulants

Emotional stimulants include the strength and preference of motivation, patience and a sense of responsibility of a student (Dunn, 1983). Klitmoller (2016) refers to emotional stimuli as the element of motivation, responsibility/conformity, task persistence, and structure. Therefore, emotions are also important in learning as they determine the level of motivation, patience and responsibility of the learner (Akademik & Etkisi, 2015).

(c) Sociological stimulants

Sociological stimulants are students preferences pertaining to working alone, in pairs, or in peer groups (Akademik & Etkisi, 2015; Dunn, 1983). Bhat (2014) states that it should always be taken into consideration that students may prefer a range of tasks while learning. Understanding such stimulation for the learner can help in ensuring an environment that is suitable for optimal learning (Dunn, 1990; Klitmoller, 2016).

(d) Physiological stimulants

Physiological stimulants are perceptual strengths (visual, auditory or kinaesthetic), level of energy during the day, alimentary needs and mobility during learning (Akademik & Etkisi, 2015). Some students like to eat and drink something during the learning process while others do not prefer this. Sometimes the time of the day when learners' energy is at the highest has an impact on student learning, and students who desire mobility need to move from place to place while dealing with a task (Bhat, 2014). Therefore, Dunn and Dunn's focal arguments are that, attitude towards instruction and better discipline are observed if the learners are taught using their preferred learning styles (Dunn, 1983).

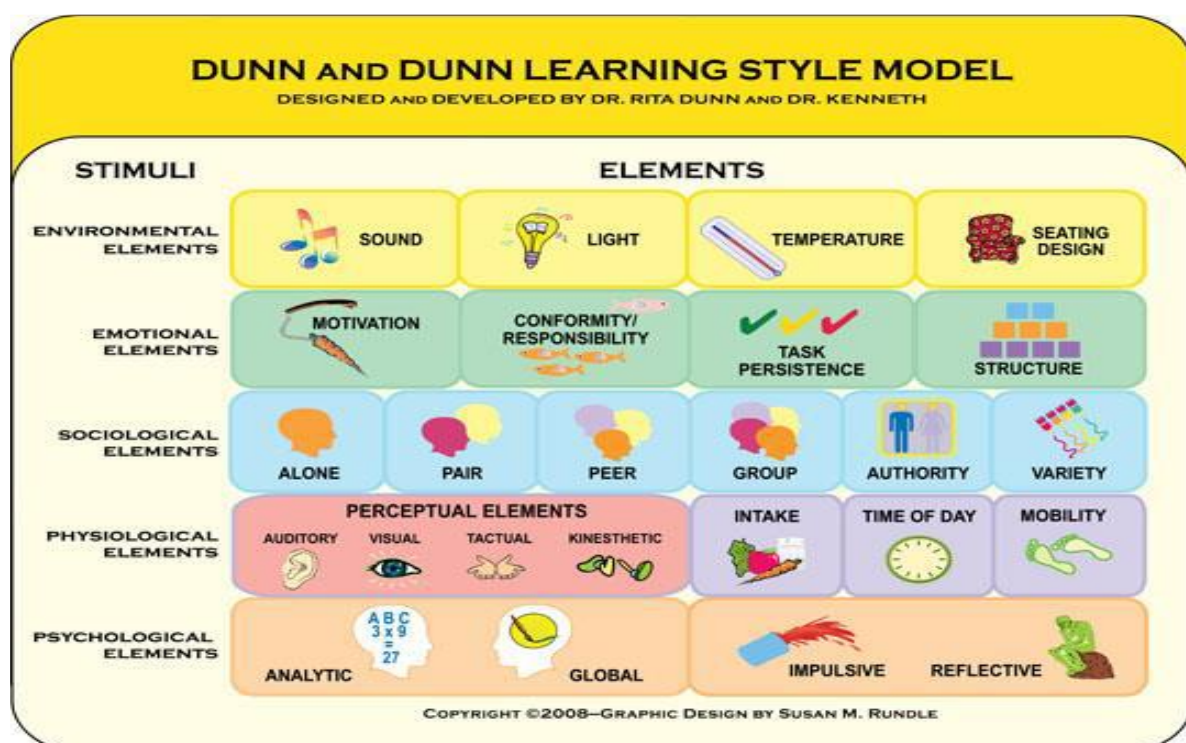
(e) Psychological stimulants

Dunn (1983) refers to psychological stimulants as the dominance of brain hemispheres processing information (i.e., whether holistic or analytical and holistic versus reflective preferences). Bhat (2014) found that global and analytic elements are inside psychological stimuli and that global learners learn better when they focus on the overall topic. In order to understand the whole picture, these learners have to learn all parts of the information by bringing little pieces together. Left and right brain supremacy is related to the hemisphericity element. Thus, analytic learners have left brain supremacy, whereas global learners possess right brain supremacy (Bhat, 2014).

The Dunn and Dunn Model has five learning style stimuli and several elements with each stimulus are illustrated in Figure 2.1 below.

Figure 2.1

Dunn and Dunn learning style model



Source: Dunn: (1983, p. 11)

2.5.1.2 Grasha and Riechmann's learning styles method

The Grasha-Riechmann Student Learning Style Scales (GRSLSS), was developed to assess six student learning styles (Riechmann & Grasha, 1974). In this method, a learning style is defined as different roles where students interact with class mates, teachers and the course content (Mehdinezhad, 2016). This definition is supported by Cimermanova (2018) who states that Grasha and Riechman's learning style method identifies the preferences of learners in interaction with other learners, peers and teachers. It reflects the learners' abilities and preferences to work independently, preferences to cooperate or to compete, to become a participant or avoidant in a virtual learning environment. Moreover, Riechmann and Grasha (1974) also perceive the teaching style as a specific model of the beliefs and behaviours that the teacher presents, and emphasize the facilitative role for teachers. Riechmann and Grasha have formulated the following types of learning styles:

- **Competitive style:** These learners compete with other learners and prefer teacher-centred classrooms with activities.
- **Cooperation style:** These learners share their opinions with others and prefer to work in small groups.
- **Avoiding style:** These learners seem uninterested and do not participate in activities, they tend to be invisible in class.
- **Participatory style:** These learners are interested in participating in activities and prefer lectures with discussion.
- **Dependent style:** These learners subject themselves to strong individuals and tend to require clear and unambiguous instructions.
- **Independent style:** These learners think independently, participate in independent projects and tend to determine their goals and learning process.

Riechmann and Grasha (1974) recommend flexibility of learning style and effective communication by teachers with students (Mehdinezhad, 2016). Bhat (2014) found that Grasha and Riechmann's learning styles method is based on the social interaction approach. This type of learning style method examines learners'

responses to classroom activities, instead of evaluating learners' personality and cognitive characteristics. In to this learning styles method, six learning styles presented above are classified into three categories (Riechmann & Grasha, 1974). Therefore, each of the six response styles is defined around three classroom dimensions: namely student attitudes toward learning, view of teachers and/or peers, and reactions to classroom procedures. The resulting three categories of learning styles are:

(a) Competitive-Cooperative

Competitive learners need to be rewarded to enable them to compete with their peers as they prefer to perform well above their classmates (Riechmann & Grasha, 1974). Some of their general classroom preferences are being leader in a group and in discussions, teacher-centred instruction and activities which enable them to show that they are superior to their peers (Bhat, 2014). On the other hand, cooperative learners learn through cooperating with their peers and teachers and prefer to learn by sharing (Cimermanova, 2018).

(b) Avoidant-Participant

Riechmann and Grasha (1974) defined avoidant learners as those not interested in learning course content in the traditional classroom, as not participating much in classroom activities, and as overwhelmed by or uninterested in what occurs in the classroom. Such learners do not want to communicate either with their peers or with the teachers (Cimermanova, 2018). They are not curious about what is going on in class either, pass and sometimes fail the grading systems and tests are not within their general learning classroom preferences. Unlike avoidant learners, participant learners like to attend courses and classroom activities as much as possible (Riechmann & Grasha, 1974). They are also enthusiastic about fulfilling both the necessary and optional requirements of the course (Bhat, 2014).

(c) Dependent-Independent

Learners with a dependent learning style want an authority such as a teacher or peer because they need clear instructions and guidelines to do something (Riechmann & Grasha, 1974). Learners who have independent learning styles prefer to study on their own, rely on their learning abilities and like independent assignments rather than group projects (Bhat, 2014). Cimermanova (2018) found that these types of learners are characterised by learning what they have to and what they are told to.

The next section discusses the 4MAT system learning styles method.

2.5.1.3 The 4MAT system learning styles method

The 4MAT (4 mode application techniques) was developed by Bernice McCarthy in the 1970 and it is a method which changes learning style concepts into educational strategies. The 4MAT system honours the distinctive style that each learner brings to the classroom, while helping each learner grow by mastering the entire cycle of learning styles (McCarthy, 1997). The method flows from the experiential learning theory based on two theoretical constructs and Kolb's model of learning styles and the concept of brain hemisphericity. The 4MAT system is a strategy for dealing with individual differences in order to develop and modify the events of instruction so that individual differences can be specifically addressed (McCarthy, 1997). This method assumes the existence of factors responsible for the generation of learning styles. The 4MAT system is an eight-step cycle of instruction that capitalizes on individual learning styles and preferences and that the method identifies four major types of learners (McCarthy, 1997). The four major types of learners are discussed next.

(a) Linda: the type 1 learner

Linda is a type 1 learner and a highly imaginative student who favours feeling and reflecting (McCarthy, 1997). These types of learners perceive information concretely and process it reflectively. Thus, they value their own experiences, seek meaning and clarity, work for harmony, and need to be personally involved but find school to be fragmented and disconnected (Chan & Denner, 2014). Therefore, understanding

the core meaning of the things they have learned and reflecting on these is important for them (Riechmann & Grasha, 1974). They would like to find an answer to the question, “Why?” (Inel, 2018).

(b) Marcus: the type 2 learner

McCarthy (1997) describes Marcus as a type 2 learner, one who is analytic and favours reflecting and thinking. These type of learners perceive information abstractly and process it reflectively. They need continuity, coherence, certainty, detail, and structure. They want to know what an expert thinks and they are comfortable with school because it is designed for this type of learner (Chan & Denner, 2014). They experience difficulty in noisy, high-activity environments, ambiguous situations and working in groups. They also have trouble with open-ended assignments, as well as with presentations, role playing, and nonsequential instructions. They have difficulty talking about feelings as well (Riechmann & Grasha, 1974). For this reason, the classical classroom environment is very suitable for this type of learners. They would like to find an answer to the question, “What?” (Inel, 2018).

(c) Jimmy: the type 3 learner

McCarthy (1997) writes that Jimmy is a type 3 learner, the common-sense learner who favours thinking and doing. McCarthy further says that these type of learners are great problem solvers and are drawn to how things work. They are at home with tasks and deadlines, are productive and committed to making the world work better and believe in their ability to get the job done. They are also active and need opportunities to move around. However, they try to apply theories in real-life settings and learn through testing the theories and applying common sense to them. They find school to be frustrating because of the lack of an immediate real world application (Chan & Denner, 2014). Inel (2018) indicated that they do not like it when the solution to a problem is provided in advance. They would rather work on it themselves. The question to be asked for these learners is, “How”?

(d) Leah: the type 4 learner

McCarthy (1997) indicated that Leah is a type 4 learner, the dynamic learner who favours creating and acting. McCarthy indicated that these type of learners are proud of their subjectivity, at home with ambiguity and are change agents and great risk takers and entrepreneurial. They act to extend and enrich their experiences and to challenge the boundaries of their worlds for the sake of growth and renewal, and they believe in their ability to influence what happens. They initiate learning by looking for unique aspects of the information to learn and sustain learning through trial and error. They usually find the structure of school to be very disappointing because they need diverse ways in their learning (Chan & Denner, 2014). Therefore, these dynamic learners are willing to find answer to the question, "What?" (Inel, 2018).

McCarthy (1997) states that in any classroom, Linda, Marcus, Jimmy, Leah, and their many shades and varieties sit before the teacher challenging and waiting to be challenged. The frustrating question is why some learners are honoured in our schools and others ignored, discouraged, or even frowned upon? Why did Marcus fare so well while Linda, Jimmy, and Leah struggled to be accepted? McCarthy finds that the learner makes meaning by moving through a natural cycle and movement from feeling to reflecting to thinking and, finally, to acting. Thus, the cycle results from the interplay of two separate dimensions, perceiving and processing.

The next section discusses the VARK learning styles method.

2.5.1.4 VARK learning styles method

Fleming and Mills (1992) reported that the literature from both psychology and education has supported the proposition that learners of all ages have different yet consistent ways of responding to learning situations. Therefore, these behaviours or predispositions to behave in a particular fashion have been termed learning styles. Fleming and Mills (1992) concluded that the most realistic approach to the accommodation of learning styles in teaching programs should involve empowering learners through knowledge of their own learning styles to enable them to adjust

their learning behaviour to the learning programs they encounter. Thus, teachers should not consider learning styles when developing and delivering instructional program but assist learners to know themselves and to operate in a metacognitive fashion to make adjustments in their learning.

The acronym VARK stands for visual, auditory/aural, read/write and kinesthetic sensory modes that are used for learning information. The VARK learning style is an individual's learning style model (Sintia et al., 2019). This learning model or technique was designed to promote reflection on sensory modality and was characterized by its brevity, simplicity, and ability to encourage students to describe their behaviour in a manner they could identify with and accept (Fleming & Mills, 1992). Thus, if students could be intimately involved in the process that produced a description of their own sensory modality preferences, they might be more likely to use it in subsequent learning (Fleming & Baume, 2006). Fleming and Mills (1992) designed the questionnaire and the questions were prompted by discussions of how some people can navigate learning better than others. Other questions came from reflecting on the ways people chose to remember or ignore different sensory cues such as shopping lists or verbal instructions. Therefore, the questions were designed primarily to stimulate reflection and discussion.

In the Fleming and Mills (1992) model the questionnaire was divided into two perceptual modes:

- (i) Visual (V) - preference for graphical and symbolic ways of representing information
- (ii) Read/Write (R) - preferences for information printed as words
- (iii) The third perceptual mode, aural (A), describes a preference for "heard" information. Students who prefer aural forms of information dissemination report that they learn best from lectures, tutorials, and discussions with other students and faculty.
- (iv) The fourth perceptual mode, kinesthetic (K), presents some difficulties because it is multi-modal and because of the different ways in which the word kinesthetic is used. For the questionnaire it was defined as the perceptual preference related to the use of experience and practice (simulated or real). In

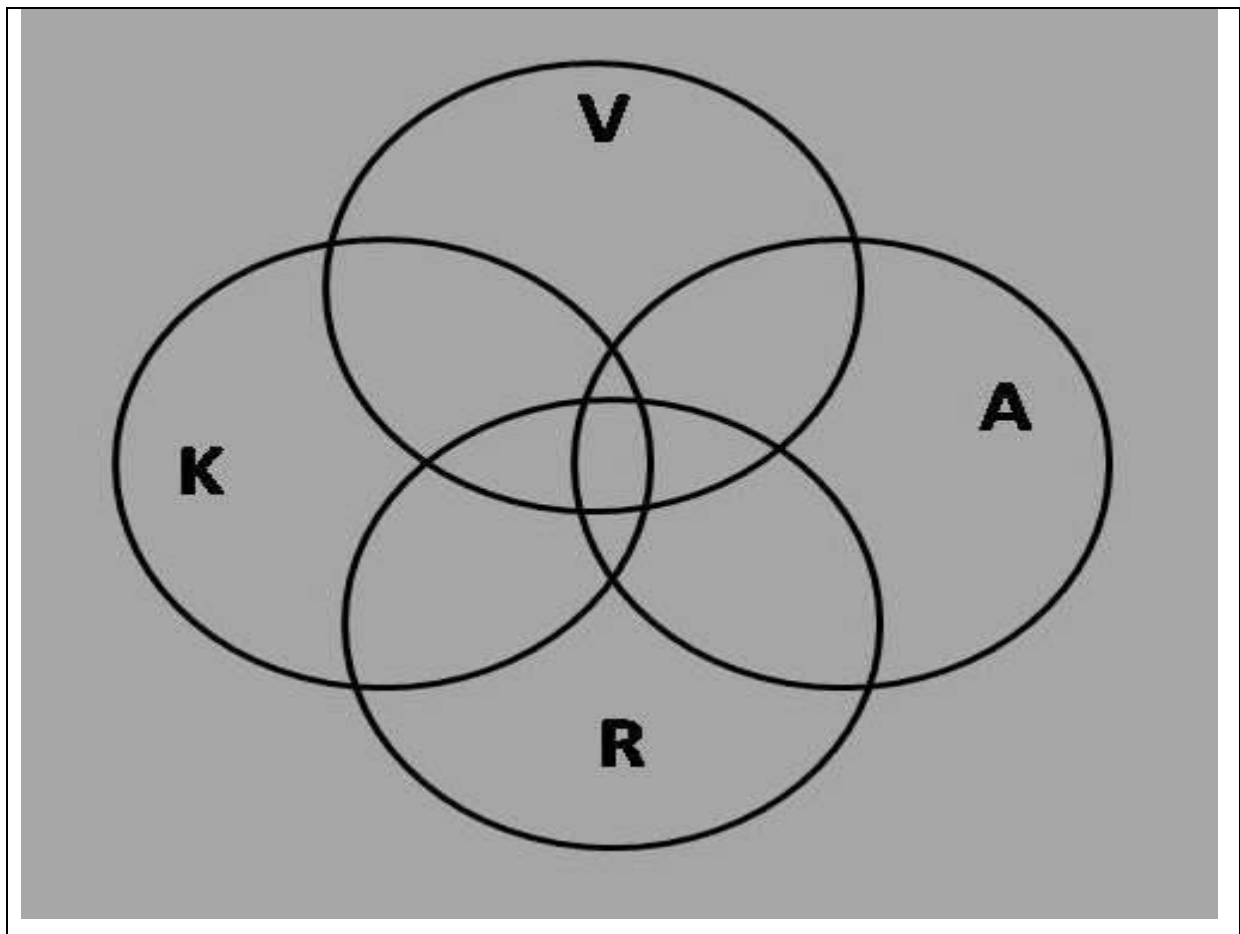
that sense it is not a single mode because experience and practice may be expressed or taken in using all perceptual modes, sight, touch taste, smell, and hearing.

Mozaffari et al. (2020) writes that VARK is a self-administered questionnaire which comprises 16 questions with four options each. Higher scores in each learning style indicate the respondents' greater desire for that style. If an individual gets equal scores in two or more styles, that individual's learning style is considered "multimodal". Total score in each item ranges from zero to 16 (Soundariya et al., 2017). However, there are cases where there will be mixtures because learning is multi-dimensional. Therefore, VARK caters for those who prefer many modes of learning and those who are context specific. Mozaffari et al. (2020) concluded that learners perceive information concretely and process it actively. Thereafter, they integrate experience and application and learn through trial and error. Learners are considered to be risk takers, adaptable, flexible, and enthusiastic about new things. Thus, learners usually find the structure of school to be very stifling because they need diverse ways in their learning (Chan & Denner, 2014; Sintia et al., 2019).

The VARK learning styles method can be applied by completing the questionnaire online or on paper. A profile of four scores is given, one for each modality. The questions are kept short in order to prevent student survey fatigue and the method also tries to encourage respondents to reflect and answer based on their experiences, rather than from hypothetical situations (Fleming & Baume, 2006). Bosman (2015) found that students may be categorised as unimodal (e.g. singly V, A, R or K), bimodal (e.g. VA, VR), trimodal (e.g. VAR, ARK) or quadmodal/multimodal with all four learning preferences (e.g., VARK). The multi/quadmodal student is shown at the intersection of all four modes as depicted in Figure 2.2.

Figure 2.2

Components of VARK modalities



Source: Bosman (2015, p. 62)

The suggested four categories that seem to reflect the experiences of learners are described as follows:

(a) Visual (V)

Mozaffari et al. (2020) found that learning through the visual mode includes the depiction of information in maps, spider diagrams, charts, graphs, flow charts, labelled diagrams, and all the symbolic arrows, circles, hierarchies and other devices that instructors use to present what could have been presented in words. This method does not use movies, videos or PowerPoint but includes designs, whitespaces, patterns, shapes and the different formats that are used to highlight and convey information (Fleming, 2006; Mozaffari et al., 2020). Visual (V) learners

have a strong sense of colour and prefer flow charts, diagrams and visualisation (Bosman, 2015; Sintia et al., 2019).

According to Bosman (2015) visual learners need to see the teacher's body language and facial expression in order to fully understand the content of a lesson. Therefore, they like to sit at the front of the classroom and may think in pictures, as they need to see mental modes in the learning material. learners with visual preference can be assisted by a teacher who uses the whiteboard to draw diagrams with meaningful symbols (and not just words) showing relationships between different things (Fleming, 2006).

(b) Aural/Auditory (A)

This category describes a preference for information that is heard or spoken. Learners who prefer this modality report that they learn best from lectures, tutorials, by imitation, group discussions, emails, using mobile phones, speaking, web chats and talking things through. This category includes talking out loud as well as talking to oneself and often learners using this method prefer to sort things out by speaking, rather than in other ways (Fleming & Baume, 2006; Mozaffari et al., 2020). Filiz Akayalar and Akayalar (2017) write that the characteristics of auditory learners include getting information by listening, preferring listening to reading or writing, having difficulty in communicating through body language and facial expressions. Bosman (2015) found that auditory inclined learners may repeat what has already been said, or ask an obvious and previously answered question. Therefore, auditory learners often need to say it themselves as they learn through saying it their way. However, they are sensitive to sound and music and often speak harmoniously, musically, beautifully, etc and are good at foreign language learning.

(c) Read/write (R)

This category is for learners who prefer information that is displayed as words. Learning through this option is based on text-based input and output-reading and writing in all its forms. People who prefer this method are often addicted to PowerPoint, the internet, lists, filofaxes, dictionaries, thesauri, quotations and words

(Fleming & Baume, 2006; Mozaffari et al., 2020). These types of learners usually catch every word from their teachers and they never miss out on hand outs and references (Bosman, 2015).

(d) Kinesthetic (K)

This category is for learners whose perceptual preference is experience and practice (Sintia *et al.*, 2019). Learners who prefer this method are connected to reality through concrete personal experiences. This includes demonstrations, simulations, videos and movies of real things, as well as case studies, practice and applications (Fleming & Baume, 2006). Therefore, the types of learners who fall in this category are quite active and cannot stand still in their places in the class. They always want to be the ones who do the tasks in the class, such as cleaning the board, opening or closing windows, and bringing the chalk (Bosman, 2015). Kinesthetics are generally affected negatively by the schooling system and might be labelled as naughty, lazy and unintelligent. Moreover, Sintia et al. (2019) observed that kinesthetic learners like to acquire information through experience and practice and prefer to learn information that has a connection to reality. Thus, this additional multimodal category encompasses students who fall into more than one sensory modality of any combination.

However, Dunlosky et al. (2013) observed that learning conditions pertain to aspects of the context in which learners are interacting with the study materials. Conditions include aspects of the learning environment itself (e.g., noise vs. quietness in a classroom). Thus, knowing the learning style of each student, especially their culture, is a fundamental preparation for facilitating, structuring and authenticating successful learning for all learners.

2.5.1.5 KOLB'S learning style method

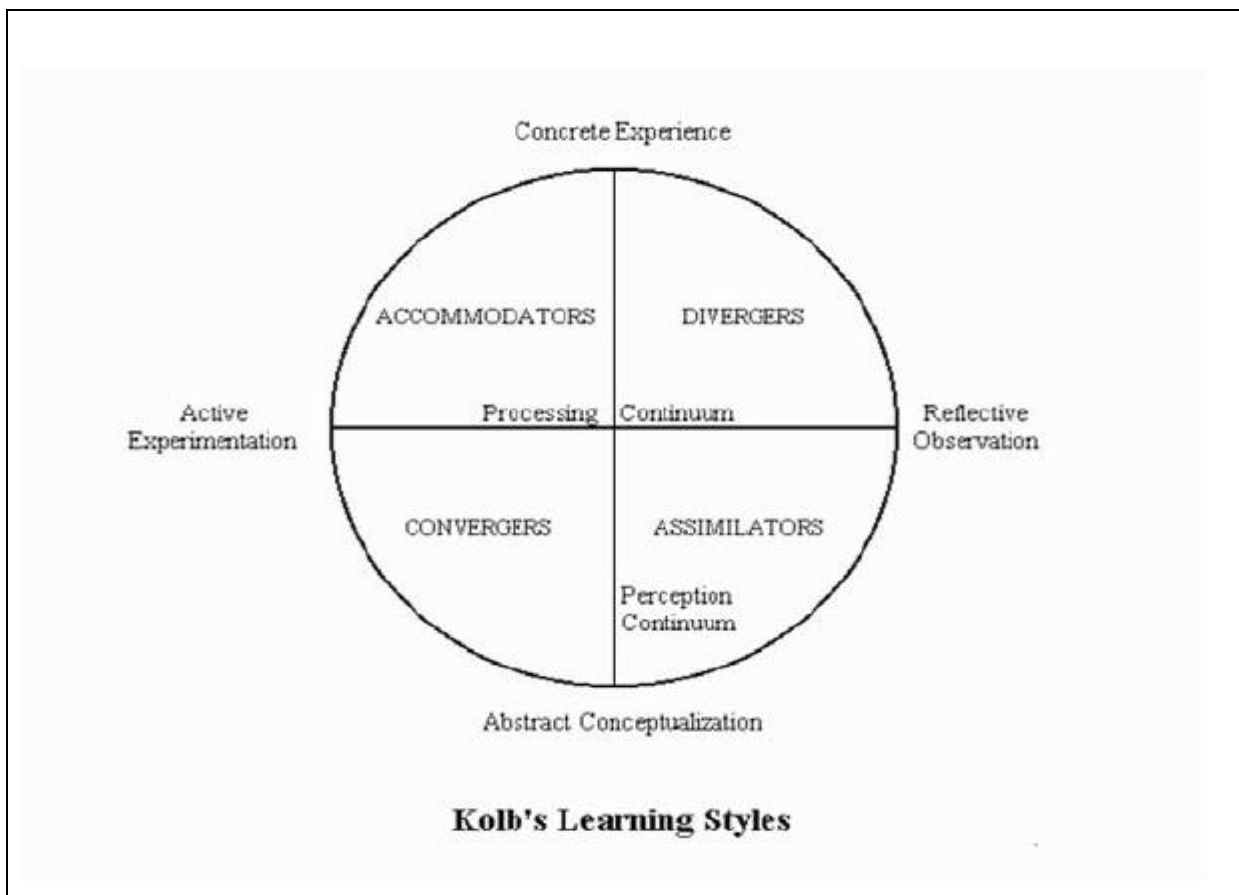
A. Kolb and Kolb (2013) determined that Kolb's learning styles inventory 4.0 is based on experiential learning theory and is designed to help individuals identify the way they learn from experience. Such individuals perceive information through thinking and feeling (abstract conceptualisation and concrete experience) and process it

through doing and watching (active experimentation and reflective observation) (Kanadli, 2016). Moreover, A. Kolb and Kolb (2019) indicate that Kolb's learning styles also have the experiential cycle, which is an adaptable template for the creation of educational programs that actively engage learners in the learning process, providing an alternative to the overused and ineffective traditional information transmission model. Therefore, the Kolb's Learning Style Inventory (KLSI) was developed as a psychometric instrument to define the kinds of learning style modalities most often used by an individual (Akinyode & Khan, 2016; Kozlova, 2018). Akinyode and Khan (2016) found that the experiential learning theory offers an outline of the learning procedure compatible with the way individuals ponder, grow and advance academically, mentally and physiologically. Abstract conceptualisation and concrete experience describe how information is perceived by individuals, while reflective observation and active experimentation examine how individuals process or internalise information. Abstract learners are very analytical and logical, concrete learners learn through examples, and reflective learners prefer to observe before making judgments and tend to be introverts (Preziosi et al., 2009).

According to A. Kolb and Kolb (2013), the Kolb's learning style inventory (KLSI) is one of the most widely distributed instruments used to assess learning styles and claims to provide a valuable framework for the design and management of learning activities. Bosman (2015) found that it is essentially used to describe the way an individual learns and deals with ideas and daily situations. Bosman also supports the notion that the KLSI is based on a bipolar view of two learning continuums, namely perception and programming. The illustration shows that the vertical axis looks at how the student takes information in through either concrete experimentation (CE) or abstract conceptualisation (AC). The horizontal axis measures how students interact with information, which can be either through active experimentation (AE), or reflective observation (RO). The combination of learning models forms four quadrants reflecting four learning styles, namely Diverger, Assimilator, Accommodator, and Converger. This learning style method includes four different learning styles, which are based on a four-stage learning cycle (Bhat, 2014; Kozlova, 2018), and these are presented in Figure 2.3 below.

Figure 2.3

Kolb's learning style model



Source: A. Kolb and Kolb (2013, p. 9)

A. Kolb and Kolb (2019) report that in a typical application of the experiential cycle the educator provides a direct concrete experiencing event, such as a field trip, a lab experiment, or a role play, and then organises personal or group reflections on the experience. The conceptualisation phase focuses on understanding the meaning of the experience, often with the addition of related subject matter, lectures or a reading. Learners are then asked to apply what they have learned in their own life and work context. The four Kolb's learning styles are presented hereunder:

(a) Divergers

The divergers learning style represents learning through feeling and watching (A. Kolb & Kolb, 2013). The word diverge means to break up or differ from something.

These type of learners prefer to watch rather than do. They are best at viewing concrete situations from numerous different viewpoints. They prefer working in groups, receiving personal feedback, collecting information and making use of imagination to solve problems (Bhat, 2014; Kozlova, 2018). According to Kolb and Kolb (2013), these types of learners' relish experiences and think deeply about them; they diverge from single experiences to multiple possibilities. Divergers are personalities related in the Concrete-Experiencing (CE) and Reflective-Observational (RO) dimensions. Divergers absorb information best through precise samples and are inclined to lean upon fresh evidence. These personalities take evidence from concrete experience and convert it through reflective observation (Akinyode & Khan, 2016).

(b) Assimilators

Kozlova (2018) found that the assimilators learning style combines watching and thinking as ways to learn. The word assimilate means absorbing and translating. Assimilators are personalities connected in the Abstract-Conceptualising (AC) and Reflective-Observational (RO) dimensions. They study best in an atmosphere that highlights organised analysis and tend to lean upon fresh evidence (Akinyode & Khan, 2016). They prefer clear explanations rather than opportunities for practical exercises. Therefore, they like readings, lectures and exploring analytical models (Bhat, 2014; Kozlova, 2018). A. Kolb and Kolb (2013) found that these types of learners have the most cognitive approach and that they prefer to think than to act. When they learn they will ask, 'What is there I can know?' They like organised and structured understanding. Lectures are their preference, with demonstrations where possible, and they respect the knowledge of the experts.

(c) Convergers

The convergers learning style involves learning by doing and thinking. The word converge means to get closer to something. Convergers are personalities associated with the Abstract-Conceptualizing (AC) and Active-Experimenting (AE) dimensions. Thus, this group of learners absorbs best in an atmosphere that stresses organised analysis and depend profoundly on experimentation. They derive facts by abstract

conceptualisation and process facts by active experimentation (Akinyode & Khan, 2016). Therefore, these types of learners prefer to find solutions for realistic issues and technical tasks. They are less concerned with people and social or interpersonal issues but like to experiment with new ideas (Bhat, 2014; Kozlova, 2018). Kolb et al. (2013) found that convergers think about things and then try out their ideas to see if they work in practice and that they prefer to work alone and independently.

(d) Accommodators

This learning style is prevalent within the general population (Kozlova, 2018). The accommodators learning style combines doing and feeling as a way to learning. Accommodators are personalities associated with the Concrete-Experiencing (CE) and the Active-Experimenting (AE) dimensions. Accommodators acquire knowledge best through precise samples and depend profoundly on experimentation. Therefore, these personalities derive evidence from concrete experiences and process it by active experimentation (Akinyode & Khan, 2016). However, learners who prefer an accommodators learning style like to do things concretely and rely on intuition rather than logic. They prefer to work in teams to complete tasks (Bhat, 2014; Kozlova, 2018). Accommodators have the most hands-on approach, with a strong preference for doing rather than thinking. However, they do not like routine and will take creative risks to see what happens when they do (A. Kolb & Kolb, 2013).

There are over thirty commonly used learning styles that are grouped into cognitive, learning and personality and aptitude-based, however, not all have been empirically validated (Seyal & Rahman, 2015). For the purpose of this study, only five different methods of learning styles were discussed. It should be noted that there is no learning style which is superior to another. However, one reason for the differences may be that processing information, remembering and responding to questions immediately or later varies among the different learners.

For the purposes of providing a theoretical anchor for this study, the Kolb's Learning Styles method was found to be the most suitable framework to guide the researcher's investigation concerning the research problem of this study. This is due to the fact that the Kolb's learning style inventory (KLSI) is one of the most widely

distributed instruments used to assess learning styles and claims to provide a valuable framework for the design and management of learning activities. This learning style is effective in describing the way people learn and it deals with day to day situations. Kolb Learning Style is an applicable approach in this study since the learning style preferences of offenders at the Johannesburg Female Correctional Centre is a notion that can be studied in day to day situations and cannot be measured through a laboratory experiment.

Kolb's learning styles method with its four learning styles and learner personality types was found to be relevant in examining learning style preferences of offenders at the Johannesburg Female Correctional Centre. The four learner personalities are categorised as Pragmatist (Feel), Reflector (Watch), Theorist (Think) and Activist (Do). The two different learner personalities can be combined, such as Pragmatist and Reflector (Feel + Watch) to become Divergers. Reflector and Theorist (Watch + Think) can be combined to become Assimilator, and Theorist and Activist (Think + Do) combine to become Convergers while Activist and Pragmatist (Do + Feel) can combine to become Accommodators. According to A. Kolb and Kolb (2013), learning takes place when one or more of the four modes of the experiential learning theory (ELT) are utilised to resolve a learning problem and when an individual develops a preference for two of the four modes.

2.5.1.6 Summary of different learning styles

Table 2.1 below summarises the key aspects of each learning style methods discussed above.

Table 2.1

Summary of learning styles methods

Method	Details of the method	Measurement	References
Dunn and Dunn	An individual's strength and preferences are identified across a full spectrum of	Activist, Reflector, Theorist, Pragmatist	Dunn (1983)

	elements.		
Grasha and Riechmann	Learning is based on interaction approach	Six learning styles classified into three categories: Competitive-Cooperative, Avoidant – Participant, Dependent – Independent	Grasha and Riechmann (1974)
4 Mode Application Technique (4MAT)	Learning theory based on Kolb's model and the concept of brain hemisphericity	Type 1-Imaginative, Type 2- Analytic, Type 3- Common-sense, Type 4-Dynamic.	McCarthy (1997)
Visual Auditory Read/write and Kinesthetic (VARK)	Is based on sensory/perception method	Visual, auditory, read/write and kinesthetic	Fleming and Mills (1992)
Kolb's learning style inventory (LSI)	The learning process consists of the following four modes: Concrete/ Experience, Abstract/ Conceptualisation, Reflective/ Observation and Active/ Experimentation.	Accommodator Converger Diverger and Assimilator	A. Kolb and Kolb (2013)

Source: Author's own compilation

The section below focuses on the discussion about learning styles within a correctional service environment.

2.5.2 Learning styles within a correctional service environment

The Department of Correctional Services is the state's agency for rendering the tertiary and final levels of correction to offenders within correctional centres (Mkosi, 2013). The department also offers non-formal and informal educational programmes to offenders, where their identity as human beings, and as part of the broader society, is promoted through some of the main educational activities (Johnson, 2015). Diseth et al. (2008) indicated that learning in the correctional centre is important both as a means of preparing offenders for life after their sentences and providing meaningful activities for the offenders during incarceration. Offenders who attend rehabilitation programmes while they are incarcerated are less likely to return to the correctional centres following their release. Diseth et al. (2008) further say that learning in the correctional centre may also change offenders' attitudes toward life in general, lead to improved self-esteem, confidence, and self-awareness, and help them find a good job upon release and resist committing further offences.

Monteiro et al. (2016) are of the view that learning styles are important elements for teachers and teacher educators to consider for any learning environment. Hence, it is a professional necessity for teachers to formulate the best teaching strategies in the different correctional programmes, for learners to effectively comprehend the subject or topics taught in line with the curriculum (Patrie, 2017).

Monteiro (2016) conducted a study in a Portuguese Correctional Centre which aimed at analysing offenders' approach to learning. The data were collected by the revised two-factor study process questionnaire (R-SPQ-2F) and the Lifelong Learning Questionnaire. The VAK (Visual-Auditory-Kinesthetic) test was also applied in order to identify the main senses mobilized for learning and classifies them as visual, auditory or tactile / kinesthetic. Monteiro found that there was a deep approach to learning characterising some learners throughout their life, especially concerning the establishing of goals and the self-direction of learning. On the other hand, the superficial approach to learning is mainly associated with the adaptation of learning strategies. The VAK test indicated that the tactile/kinesthetic was the most preferred learning style. Diseth et al. (2008) stated that appropriate learning styles may be

considered as important outcome factors which signify high education quality, partly owing to experience and motivation.

Johnson (2015) concluded that knowing the offenders' learning style can contribute to pedagogical differentiation and increase participation in digital learning. Moreover, Chiu (2019) stated that general education is to understand how everything that is taught in the arts and sciences relates to the lives of the learners and to the world that the learners will confront after learning. Diseth et al. (2008) indicated that a large-scale evaluation of educational quality in the correctional centres context presents several challenges because offenders take a variety of educational programmes at different academic levels, for example, lower/upper secondary school, craft or journeyman's certificate, single course/degree programme at university. They also write that there are individual differences with respect to learning abilities, learning problems (such as reading and writing), and information processing capabilities. Thus, for teaching and learning to happen, resources and services must be available and offenders' teaching and learning require qualified educators and practitioners grounded in the epistemological theories and principles of adult education (Johnson, 2015) .

The foregoing discussion shows that there is a lack of research regarding learning styles within the correctional service environment even though literature broadly reveals that determining a learner's learning style is quite valuable in order to realize a positive and successful learning experience. Thus, researching about learning styles in this study could provide deeper insights into the preference of offenders in terms of how they want to learn inside the correctional centre environment. It is important to understand how students learn and how they provides answers to questions (Nursen et al., 2018).

2.6 CHAPTER SUMMARY

This chapter conceptualised learning and learning styles. The chapter also discussed issues pertaining to learning within the correctional environments from the global, African and South African perspectives. Furthermore, the chapter discussed

various learning style methods. The chapter concludes with a discussion of learning styles within the correctional service environment and a chapter summary.

The next chapter (chapter 3) focuses on the research methodology that was adopted for this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the methodology that was adopted in the study. The research methodology outlines the logic in the development of the process used to generate theory or the procedural framework within which the research is conducted (Mohajan, 2018). Igwenagu (2017) refers to research methodology as a set of systematic techniques used in research or a guide to research and how research is conducted. The research philosophy, research approach, research design and research methods that were applied in the study are discussed in this chapter. Furthermore, the chapter discusses the measures that were implemented to ensure the validity and reliability of the study. The chapter ends with a discussion of the problems encountered when conducting the study.

The various elements of the methodological framework adopted in this study are presented next.

3.2 RESEARCH PHILOSOPHY

According to Kaushik and Walsh (2019) many philosophical paradigms exist today as a result of advancements in human ways of thinking and the different ways of explaining the occurrence and implications of diverse phenomena that occur in the world. Kaushik and Walsh write that in social research, the term paradigm is used to refer to the philosophical assumptions or basic set of belief that guide and define the actions and worldview of the researcher. According to Nguyen (2019) a paradigm reflects the shared assumptions and principles that frame how a researcher sees the world and interprets and acts within that world. Through that conceptual lens, the researcher examines the methodological aspects of his or her research project in order to determine the research methods that are relevant and useful, including the data analysis techniques to be applied. Kaushik and Walsh (2019) on the other hand are of the view that paradigms are conceptual and practical “tools” that are used to solve specific research problems. Nguyen (2019) also found that in qualitative research, paradigms may be described as human constructions or the process by

which researchers make meaning of their data through their personal experiences of the real life and informed by their interactions with participants. There are four elements that distinguish research philosophies and cover their basic assumptions, beliefs, norms and values. These are, namely, ontology, epistemology, axiology and methodology. These elements are discussed in the next section.

3.2.1 Elements of a research philosophy

A discussion of the four elements of a research philosophy is presented hereunder:

3.2.1.1 Ontology

Ontology refers to assumptions about the nature of reality (Saunders, 2009). According to Kivunja et al. (2017) it is the philosophical study of the nature of existence or reality, of being or becoming, and of the things that exist and their relations. It examines the underlying belief system of the researcher and the nature of being and existence. Therefore, ontological assumptions shape the way in which the researcher sees and studies research objects (Saunders, 2009). These assumptions, concepts or propositions help to orientate the researcher's thinking about the research problem, its significance, and how the researcher might approach it in order to answer the research question, understand the problem being investigated and contribute to its solution (Kivunja et al., 2017). Nguyen (2019) states that ontology is crucial to a paradigm because it seeks to determine the real nature or the foundational concepts which constitute themes that researchers analyse to make sense of the meaning embedded in the research data.

3.2.1.2 Epistemology

According to Saunders (2009), epistemology concerns assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge and how people can communicate knowledge to others. Whereas ontology may initially seem rather abstract, the relevance of epistemology is more obvious. However, Kivunja et al. (2017) found that in research, epistemology is used to describe how people come to know something, how they know the truth or reality. Epistemology therefore, is

concerned with the basis of knowledge, its nature and forms, how it can be acquired, and how it can be communicated to other human beings. It focuses on the nature of human knowledge and comprehension that the researcher as the investigator or knower may possibly acquire in order to extend understanding in the chosen field of research (Kivunja et al., 2017). Epistemology helps researchers to establish the faith they put in their data, and affects how they will go about uncovering knowledge in research settings (Nguyen, 2019). It is important to understand the implications of different epistemological assumptions in relation to a researcher's choice of method(s) and the strengths and limitations of subsequent research findings. Therefore, it is the researcher's own epistemological assumptions that will govern what the researcher considers legitimate for the research (Saunders, 2009).

3.2.1.3 Axiology

Axiology refers to the role of values and ethics within the research process. This incorporates questions about how researchers deal with both their own values and those of participants (Saunders, 2009). Kivunja et al. (2017) found that axiology addresses the question, "What is the nature of ethics or ethical behaviour?" It is important for the researcher to consider the human value of everyone that will be involved or participate in the research project. In addition, Kivunja et al. point out that the researcher should demonstrate the best ethical conduct by showing an understanding of what is right or wrong behaviour when conducting research.

3.2.1.4 Methodology

Kivunja et al. (2017) regard methodology as the broad term used to refer to the research design, methods, approaches and procedures used in an investigation. For example, data gathering, participants, the instruments used and data analysis are all parts of the broad field of methodology. Therefore, methodology is a research strategy that translates ontological and epistemological principles into guidelines that show how research is to be conducted as well as the principles, procedures, and practices that govern research (Antwi & Kasim, 2015).

Moreover, from its philosophical assumptions about the nature of social reality, ways of knowing and ethics and value systems, a paradigm leads researchers into research questions, selection of participants, instruments and data collection procedure as well as data analysis (Nguyen, 2019).

Below is a discussion of the different philosophical schools of thought.

3.2.2 Philosophical schools of thought

There are different philosophical schools of thought that guide research activities. Some of these schools of thought are discussed hereunder:

3.2.2.1 Positivism

According to Saunders (2009), positivism relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalisations (Saunders, 2009). Therefore, the positivist paradigm defines a worldview of research which is grounded in what is known, in the field of research methods, as the scientific method of investigation (Kivunja et al., 2017; Nguyen, 2019). However, experimentation, observation and reason based on experience ought to be the basis for understanding human behaviour, and the only legitimate means of extending knowledge and human understanding. Thus, the scientific method involves a process of experimentation that is used to explore observations and answer questions. According to Aliyu et al. (2014), a positivist believes that the universe conforms to permanent and unchanging laws and rules of causation and happenings; that there exists an intricacy and complexity that could be overcome by reductionism, with the intention of giving emphasis to impartiality, measurement, objectivity and repeatability.

Kivunja et al. (2017) indicated that research located in positivism relies on deductive logic, formulation of hypotheses, testing of those hypotheses, offering operational definitions and mathematical equations, calculations, extrapolations and expressions to derive conclusion. The aim is to provide an explanation and make predictions based on measurable outcomes. Kivunja et al. found that the measurable outcomes

are undergirded by four assumptions, namely determination, empiricism, parsimony and generalizability. The assumption of determination means that the events people observe are caused by other factors. Therefore, if people are to understand causal relationships among other factors, they need to be able to make predictions and to control potential impacts of the explanatory factors on the dependent factors (Kivunja et al., 2017; Nguyen, 2019).

Kivunja et al. (2017) stated that the assumption of empiricism means that for the researcher to be able to investigate a research problem, there is a need to collect verifiable empirical data, which supports the theoretical framework chosen for the research and enables the researcher to test the hypotheses formulated. Kivunja et al. further indicated that parsimony refers to the researcher's attempts to explain the phenomena under study in the most economical way possible. Generalisability assumes that the results obtained from a research project guided by the positivist philosophy should be applicable to other situations by induction (Aliyu et al., 2014). This means that the positivist researcher should be able to observe occurrences of the particular phenomenon being studied and be able to generalize about what can be expected elsewhere in the world under the same conditions.

Therefore, a positivist researcher advocates the use of the quantitative research methods as the bedrock enabling precision in the description of the parameters and coefficients in the data that is gathered, analysed and interpreted (Kivunja et al., 2017; Nguyen, 2019). The positivist researcher views inquiry as a series of logically related steps, and makes claims of knowledge based on objectivity, standardisation, deductive reasoning, and control within the research process (Kaushik & Walsh, 2019).

3.2.2.2 Constructivism

Adom et al. (2016) describes constructivism as an approach that asserts that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. The mind constructions are connected to physical or tangible entities, which could emerge to contain some reality independent of the construction (Aliyu et al., 2014). For example, there is instant complexity in the

thought that reality or truth is a construction inside an individual psyche. Thus, the constructivism philosophy promotes the idea that learning does not just happen through the traditional method of teachers standing in front of the class and lecturing. Instead, learning occurs when the learner discovers knowledge through experimentation and doing (Adom et al., 2016; Suhedi & Purwano, 2018).

Adom et al. (2016) concluded that there are two processes through which knowledge is constructed, namely, accommodation and assimilation. The accommodation process involves the framing of one's mental representation of the external world to fit the new experiences that the learner has gained. Thus, the learner gives room to new experiences that the learner has gained in the mental faculties where the old experiences are already located. With the assimilation process, however the learner incorporates the new experience into an already existing framework of the old experiences without changing that framework.

For example, a PhD student may feel that attending an educational workshop is not very important because of past experience from a previously attended educational workshop. His or her perception of educational workshops may however change when he or she acquires a new experience of an educational workshop which proved very helpful and relevant. The old experience and the new experience will both co-exist in his or her mental faculties, but his or her perceptions of the world may or may not change based on the new experience. Since his or her experiences contradict with his or her internal representations, he or she is likely to change his or her perceptions of the experience to fit his or her new internal representations.

Moreover, Adom et al. (2016) state that the old and the new experiences are meant to exist concurrently in the mental framework of the individual. Aliyu et al. (2014) are of the view that constructivism fails in the acknowledgement of the empirical understanding that learners grasp by acquaintance, by gathering and by experienced participation in the attendance of what is present. Aliyu et al. further claim that researchers could not be acquainted with the real world and not visualise it, because individuals cannot imagine or envisage something existing with no notions of freedom and time. Therefore, space and time are a priori structures that the psyche imposes on truth or reality, but have nothing to do with truth or reality itself

3.2.2.3 Transformative philosophy

Transformative philosophy situates its research in social justice and seeks to address the political, social and economic issues which lead to social oppression, conflict, struggle and poor structures at whatever levels these might occur (Kivunja et al., 2017). This notion is supported by Mertens (2007) who noted that the transformative paradigm provides a framework and cultural complexity throughout the research process. Therefore, the transformative paradigm's central tenet is that power is an issue that must be addressed at each stage of the research process (Romm, 2015). However, this should not detract from the fact that researchers turn to scholarly literature to identify a research problem. Mertens (2007) reported that in transformative mixed method research, a researcher might make use of a variety of quantitative and qualitative methods to determine the focus of research, with specific concern for power issues. However, important ways of gathering insights under the transformative paradigm include methods of involving community members in the initial discussion of the research focus. This can be done in many ways, such as focus groups, interviews, surveys and threaded discussions (Mertens, 2007).

3.2.2.4 Pragmatism

Pragmatism is a paradigm that claims to bridge the gap between the scientific method involving the structuralism orientation of older approaches and the naturalistic method and freewheeling orientation of newer approaches (Kaushik & Walsh, 2019). Therefore, pragmatism is based on the proposition that researchers should use the philosophical and methodological approach that works best for the particular research problem that is being investigated. It is often associated with the mixed method, where the focus is more on the consequences of research and research question than on the methods (Kaushik & Walsh, 2019). Therefore, a pragmatic researcher advocates that relationships in research are best determined by what the researcher deems appropriate for that particular study. There is no single reality in this approach because all individuals have their own unique interpretations of reality. Therefore, a combination of quantitative and qualitative research methods in conducting research benefits all the people in this regard (Kivunja et al., 2017; Nguyen, 2019). However, pragmatism as a research paradigm

refuses to get involved in contentious metaphysical concepts such as truth and reality. Instead it accepts that there can be single or multiple realities that are open to empirical inquiry (Kaushik & Walsh, 2019).

Therefore, pragmatism is reflected in the appropriateness of the methods in the research question without prior limitations being imposed (Revez & Borges, 2018). Thus, in pragmatism knowledge and reality are based on beliefs and habits that are socially constructed. However, knowledge claims cannot be totally abstracted from contingent beliefs, habits, and experiences. For pragmatists, reality is true in so far as it helps us to get into satisfactory relations with other parts of experience (Kaushik & Walsh, 2019). According to the pragmatism paradigm, research should be designed and conducted in the best way that serves to answer the research question, regardless of its underlying philosophy (Maarouf, 2019).

Nevertheless, pragmatism does not only justify the mixed method research approach but also opens up all methodological choices in front of a researcher, where the mixed method research approach becomes one way of applying the pragmatic philosophy. Pragmatic research has the option to conduct quantitative, qualitative or mixed research, based on what best serves the research purpose (Maarouf, 2019). According to Kaushik and Walsh (2019), a pragmatist would not define the object based on what it is or what it is being used for, but rather on how it would help the pragmatist achieve the purpose aimed at. It promotes the view that people are free to believe anything that they want, although some beliefs are more likely than others to meet goals and needs.

3.2.2.5 Justification for adopting positivism as a research philosophy

In view of the foregoing discussion, a positivism philosophy was chosen as the basis for this study and this choice was informed by the nature of the research problem and the research objectives to be achieved. The researcher believes the phenomenon under investigation in this study must be examined objectively with precision and for that to be realized, numerical data must source from participants through a standardized instrument and be analysed statistically to offer a scientific explanation of the phenomenon. The researcher believes that theory is universal and

that law-like generalisations can be made across contexts; the results of this enquiry can be quantified and this research ought to follow the established scientific methods of investigations. Therefore, positivism was found to be more appropriate for the purpose of the study which is to examine the learning style preferences of offenders at the Johannesburg Female Correctional Centre.

The study adopted the quantitative approach, which the positivist paradigm advocates because its use gives the researcher the ability to be precise in description of the parameters and coefficients in the data that is gathered, analysed and interpreted as stated by Creswell (2003). Thus, positivism guided the researcher in selecting the appropriate research approach, research design and research methods, which in turn enabled the collection of data using a scientifically valid and reliable instrument. Consequently, this enabled the researcher to apply appropriate statistical procedures in order to provide answers to the research questions in this study.

3.3 RESEARCH APPROACH

Williams (2007) defines research as the process of collecting, analysing and interpreting data in order to understand a phenomenon. Williams further states that the research process is systematic in defining the objective, managing the data, and communicating the findings within established frameworks and in accordance with existing guidelines. The frameworks and guidelines provide researchers with an indication of what to include in the research, how to conduct research, and what types of inferences are probable based on the data collected. Moreover, Apuke (2017) found that research also involves creativity, which is applied in a systematic way in order to improve knowledge, which consists of human knowledge, culture, and society. This implies that research is utilized to investigate facts, reconfirm the results of previous experiments, provide solutions for existing or new issues, support theories, as well as propound new theories.

There three common approaches that are applied in research are discussed next.

3.3.1 Quantitative research approach

According to Apuke (2017) a quantitative research approach deals with quantifying and analysing variables in order to get results. Thus, it involves the utilization and analysis of numerical data using specific statistical techniques to answer questions like who, how much, what, where, when, how many, and how. Williams (2007) reported that what constitutes quantitative research involves a numerical or statistical approach in the research design. Therefore, quantitative research is specific in surveying and experimenting and builds on existing theories. According to Rahi (2017) quantitative research typically explores specific and clearly defined questions that examine the relationship between two events or occurrences, where the second event is a consequence of the first event. Therefore, this approach focuses on fresh data collection from large populations in accordance with the problem and analysis of the data but ignores an individual's emotions and feelings or context. Quantitative data is often gathered through surveys and questionnaires that are carefully developed and structured to provide numerical data that can be explored statistically and yield a result that can be generalised to some larger populations (Rahi, 2017). This approach is aligned to the research philosophy that underpins the current study, and the justification for adopting it is presented below.

3.3.2 Qualitative research approach

Aspers and Corte (2019) define qualitative research as an iterative process in which improved understanding by the scientific community is achieved by making new, significant distinctions resulting from getting closer to the phenomenon being studied. Qualitative researchers are interested in exploring and/or explaining phenomenon as they occur in the natural setting (Boru, 2018). Goundar (2012) states that qualitative research is concerned with phenomena involving quality, hence it is non-numerical, descriptive, applies reasoning and uses words. Goundar further indicates that the main aim of qualitative research is to obtain meaning, feeling and describe the situation.

Therefore, what constitutes qualitative research involves the purposeful description, explanation and interpretation of collected data (Williams, 2007). Qualitative

research is designed to look beyond the percentages to gain an understanding of feelings, impressions and viewpoints. Daniel (2016) states that qualitative data instruments such as observation, open-ended questions, in-depth interviews (audio or video) and field notes are used to collect decision-making from participants in their natural settings. The methods employed in data collection give full description of the research with respect to the participants involved, their feelings and their context. This research approach is not compatible with the research philosophy chosen for the current study and therefore was found not to be suitable.

3.3.3 Mixed methods approach

In the mixed methods approach, researchers incorporate research design, research methods and data analysis techniques from both the quantitative and qualitative research approaches in a single research study (Hafsa, 2019; Williams, 2007). Hafsa (2019) indicates that qualitative data is derived from open ended sources, usually without pre-designed replies whereas quantitative data comes from close ended data sources like tests, questionnaires or psychological instruments. In order to address the research questions defined for a particular mixed method study, researchers collect or analyse not only numerical data, which is customary in quantitative research, but also narrative data, which is the norm for qualitative research.

Williams (2007) explains the mixed method approach to research as an extension of, rather than a replacement for the quantitative and qualitative approaches, and that researchers are to test and build theories. However, various concepts are used in contemporary writings to describe this approach, for example, integrating, synthesis, quantitative and qualitative methods, multimethod, and mixed methodology (Hafsa, 2019). Campbell et al. (2016) report that a commonly described purpose of mixing research methods is to come to a more complete description of the phenomenon of interest. Moreover, the goal for researchers using the mixed method approach is to draw from the strengths of each and minimise the weaknesses of the quantitative and qualitative research approaches (Williams, 2007). This approach was not found to be suitable for the current study based on the research philosophy adopted and the nature of the research problem under investigation.

3.3.4 Justification for adopting a quantitative research approach

In this study, a quantitative research approach was followed. In making this decision, the researcher was guided by the research philosophy adopted for this study. As already explained above, quantitative research involves the utilization and analysis of numerical data using specific statistical techniques to answer questions like who, how much, what, where, when, how many, and how (Apuke, 2017). It is also described as the approach of explaining an issue or phenomenon through gathering data in numerical form. Therefore, the quantitative research approach was found to be suitable in examining the learning style preferences of offenders at the Johannesburg Female Correctional Centre, as it enabled the empirical examination of the relationship between learning styles preference and learning experience. This approach made it possible for the researcher to plan for, collect, process and analyse numerical data in order to draw findings and make conclusions.

3.4 RESEARCH DESIGN

A research design is a conceptual structure within which the research is conducted and it constitutes the blueprint for the collection, measurement and analysis of data (Mohajan, 2018; Walliman, 2011). It can also be referred to as a plan of the proposed research work (Akhtar, 2016). Thus, the research design enables the researcher to sail through various research procedures with a minimum expenditure of effort, time and money. Kumar (2011) states that a research design helps the investigator to organise information in a shape whereby it will be possible to look for errors and shortages.

There are different types of research designs that are appropriate for the different types of research projects. Williams (2011) reported that the choice of which design to apply depends on the nature of the research problem and aims or objectives. Therefore, each type of research design informs a range of research methods that are commonly used to collect and analyse the type of data that was generated by the investigations. Quantitative research designs are discussed below:

3.4.1 Quantitative research designs

According to Boru (2018) a quantitative research design explains phenomenon by collecting numerical data that is analysed using statistical approaches. Several research designs exist to conduct quantitative research, such as experimental, quasi-experimental, survey and correlational.

3.4.1.1 Experimental design

Fischer et al. (2014) explain that experimental designs are those set-ups in which at least one group is "treated" in a particular manner and the expected outcomes are compared to data and measures collected from a control group which receives a different treatment. Therefore, according to Cash et al. (2016), effective experimentation forms a core part of elucidating specific variables, developing and testing relationships and hypotheses, and comparing the predictive power of competing theories.

Boettger et al. (2013) note that when using the experimental design it is important to consider how the variable(s) will be measured, as well as which designs would be most appropriate to answer the research question. Hence, the statistical analysis has to be taken into account. Boettger et al. (2013) also point out that the researcher should consider what the expectations of the study are as well as how to analyse the outcome. The researcher must also think of the practical limitations, including the availability of data sets or experimental set-ups that are representative of real situations. Fischer et al. (2014) observe that when using the experimental design the control group is often taken as it appears in the field. This design was not found to be suitable for the current study because the study focus is not on experimentation.

3.4.1.2 Quasi-experimental design

White and Sabarwal (2014) explain that the quasi-experimental research design tests the causal hypotheses. Here researchers must establish between group equality before introducing a treatment and offer a hypothesis to account for an ineffective treatment and threats to internal validity (Boettger et al., 2013). In both

experimental and quasi-experimental designs, the programme or policy is viewed as an intervention in which a treatment, comprising the elements of the programme or policy being evaluated, is tested for how well it achieves its objectives, as measured by a pre-specified set of indicators. Moreover, White and Sabarwal (2014) are of the view that quasi-experiments consist of already established groups and occur in natural settings, such as a classroom or a workplace. Thus, a quasi-experimental design by definition lacks random assignment. Therefore, assignment to conditions is by means of self-selection or administrator selection or both of these routes (White & Sabarwal, 2014). This design was not found to be suitable for the current study because the focus is not on specified groups and there is no intervention or treatment required.

3.4.1.3 Correlational design

Williams (2007) indicated that the correlational research design examines the differences between two characteristics of a study group. According to Tan (2014) the purpose of a correlational design is to establish whether two or more variables are related. Thus, findings from a correlational design enable researchers to determine whether or not, and the degree to which two variables change together. In a positive correlation, two variables change together in the same direction. For example, the weather temperature may be positively correlated to the sale of ice cream so that as the temperature increases, so does the number of ice creams sold. Tan also explains that in a negative correlation, two variables change together in the opposite direction. For example, the amount of time one spends practicing on a musical instrument may be negatively correlated to the amount of time one spends watching television or playing sports. Two variables may also have no relationship to each other, therefore, they may be said to have zero correlation (Tan, 2014).

Williams (2007) states that correlation design is referred to as a statistical test to establish patterns for two variables. Therefore, a statistical analysis of the research question can be conducted through a progression or sequence of analyses using a standard test for correlation that produces a result called "r." The r coefficient is reported with a decimal numeral in a process known as the Pearson Correlation

Coefficient. This design was not found to be suitable for this study because the focus of the study is not on differences between characteristics of the target population.

3.4.1.4 Survey design

Ponto (2015) refers to survey design as procedures in quantitative research in which investigators administer a survey to a sample or entire population of people to describe the attitudes opinions, behaviours, or characteristics of the population. Therefore, survey researchers collect quantitative, numbered data using questionnaires or interviews and statistically analyse the data to describe trends about responses to questions and to test research questions or hypotheses. Glasow (2005) found that there are two types of survey designs, namely cross-sectional and longitudinal survey design.

(a) Cross-sectional survey design

In cross sectional survey design, the researcher collects data at one point in time. For example, when middle school children complete a survey about teasing, they are recording data about the present views. This design has the advantage of measuring current attitudes or practices (Glasow, 2005). It also provides information in a short amount of time, such as the time required for administering the survey and collecting the information (Ponto, 2015).

(b) Longitudinal survey design

A longitudinal survey design involves the survey procedures of collecting data about trends within the same population, changes in cohort group or sub populations, or changes in a panel group of the same individual over time (Mathiyazhagan & Nandan, 2010). Therefore, in longitudinal design the participants may be different or the same people. For example, a longitudinal design could be a follow-up with graduates from a program or school to learn their views about their educational experiences.

- **Trend studies:** Trend studies are longitudinal survey designs that involve identifying a population and examining changes within that population over time.
- **Cohort studies:** A cohort study is a longitudinal survey design in which a researcher identifies a subpopulation based on some specific characteristics and then studies that subpopulation over time.
- **Panel studies:** A panel study is a longitudinal survey design in which the researcher examines the same people over time. The disadvantage of a panel design is that individuals may be difficult to locate. The advantage is that the individuals studied will be the same each time, allowing the researcher to determine the actual changes in specific individuals.

This study followed a cross-sectional survey design, and this was informed by the research objectives, the research philosophy and the research approach adopted for this study. The primary objective of this study was to examine the learning style preferences of offenders at the Johannesburg Female Correctional Centre. A cross-sectional survey design was considered appropriate because it enabled the researcher to collect data at one point in time. This type of design provides information in a short space of time, such as the time required for administering the survey and collecting the information (Mathiyazhagan & Nandan, 2010). Surveys are inclusive in the types and number of variables that can be studied, require minimal investment to develop and administer, and are relatively easy for making generalizations. A survey design provides a means of measuring a population's characteristics, self-reported and observed behaviour, awareness of programs, attitudes or opinions and needs (Muhammad & Kabir, 2016).

3.5 RESEARCH METHODS

The methods below were applied in this study to ensure that the correct data were collected and analysed.

3.5.1 Unit of analysis

Li et al. (2017) define unit analysis as the entity that is being analyzed in a scientific research study. According to Li et al. the units of analysis of studies may be classified into fewer categories or levels:

- **Individual level:** Individuals are the most common units of analysis in social sciences. For example, students, employees, union members, registered voters, citizens, political party members, managers, teachers, faculty members, officers, customers and sales representatives.
- **Group level:** Sometimes, groups, which consist of multiple individuals, are the focus of a study. For example, study groups, work teams, departments, families, divisions, project teams, residents of an apartment building/a block of flats or apartments/a neighbourhood. In studies where the unit of analysis is specified as groups instead of the individual attributes of the members of the group, the attributes of the group as a whole are of interest (such as group size), although they might be operationalized as the sum or mean of individuals' scores (e.g., the success of a class can be defined as the average score of the students in that class). These types of data are called aggregated data.
- **Organisational level:** Examples of the organisational level may be found in sociology, managerial sciences and other social science disciplines where investigations are done into units that are wider than groups and which usually involve multiple groups within themselves. This may include studies that analyse business corporations, not-for-profit organizations, unions, army divisions, schools and universities. An even wider social entity may be the unit of analysis of scientific studies, such as those in which societies, cities, and nations are investigated.

The unit of analysis for this study comprised individuals. Data were collected from individual sentenced offenders at the Johannesburg Female Correctional Centre.

3.5.2 Research variables

Shukla (2018) refers to research variables as a characteristic under study, of which an identity or value changes or is possible to change per unit. According to Shukla types of variables are:

- **Independent Variable:** A variable, the value of which affects the value of another variable is known as an independent variable. Such a variable is not affected by the change in the value of another variable but affects the value of another variable. For example, in a comparative study of the Computer Aptitude (CA) of undergraduate students of different faculties, 'faculty' will be considered an independent variable, because in such a study the researcher will check the impact of faculty on the computer aptitude of the students. Faculty may have different levels like Arts, Commerce and Science. Here, the researcher assumes that the CA of students may differ from faculty to faculty.
- **Dependent Variable:** It is a variable, the value of which may change due to change in the value of other variable. For example, in a comparative study of mathematical reasoning ability (MRA) of students in the context of their Intelligence, MRA will be a dependent variable and Intelligence will be considered an independent variable because in such a study, the impact of Intelligence on MRA is to be evaluated.

In this study, the independent variable was learning styles and the dependent variable was learning experience.

3.5.3 Research population

Verma et al. (2017) found that the term population means all members that meet a set of specifications or a specified criterion. For example, the population of India is defined as all people residing in the Republic of India. However, a population of inanimate objects can also exist, for example, all BMW cars manufactured in Bavaria (Germany) in the year 2003 can be regarded as a population for research purposes. Therefore, the population of this study comprises all sentenced offenders at the

Johannesburg Female Correctional Centre. There were 571 sentenced offenders at this centre in 2019 when data was collected.

3.5.4 Sampling

Barreiro and Albandoz (2001) describe sampling as the process of selecting a segment of the population for investigation. Therefore, in quantitative studies, a sample should be representative of the study population to enable the researcher to make generalised remarks or conclusions that are relevant to the population (Verma, Gautam, Pandey, Mishra, & Shukla, 2017). According to Rahi (2017), sampling is done for the following reasons, namely, it is more economical; it lowers the cost of conducting research, it increases the speed of data collection and it could increase the accuracy of the results (Rahi, 2017). The sampling strategies that are available to researchers include the following: probability sampling, non-probability sampling and enumeration technique.

3.5.4.1 Probability sampling

Probability sampling is a sampling approach in which any particular member of the population has an equal chance or probability of being selected into a sample (Rahi, 2017; Taherdoost, 2016a). This sampling strategy is also known as random sampling (Etikan & Bala, 2017). Thus, non-systematic and random rules determine the sample, and the possibility that the sample will truly represent the population is increased (Rahi, 2017). Probability or random sampling has the greatest freedom from bias but may represent the most costly sample in terms of time and energy for given levels of sampling error (Verma et al., 2017).

3.5.4.2 Non-probability sampling

Non-probability sampling is a sampling strategy in which the chance or probability of each unit to be selected is not known or confirmed (Rahi, 2017). Personal judgment plays an important role in this sampling strategy. Therefore, this makes particular members of a population not to have an equal and independent chance of being selected. However, Verma et al. (2017) found that non-probability sampling is a good

method to use when conducting a pilot study. A good example of this is when a researcher is attempting to question groups who may have sensitivities to the questions being asked and may not want to answer those questions honestly. This approach may also be used for those situations where ethical concerns may keep the researcher from speaking to every member of a specific group.

3.5.4.3 Enumeration sampling

Enumeration or census study occurs if the entire population is very small or it is reasonable to include the entire population in the study. It is called census sampling because data is gathered on every member of the population (Parker, 2011). According to Lavrakas (2018) enumeration or census is an attempt to list all elements in a group and measure one or more characteristics of those elements. The group is often an actual national population, but it can also be all houses, businesses, farms, books in a library, cars from an assembly line, and so on. Therefore, the decision to take a census versus a sample survey if not mandated by statute is often based on an assessment of the coverage, cost, errors in the data, and other qualitative factors. Everyone has an opportunity to participate and some may still choose not to participate (Kish, 1979).

The enumeration technique or census survey is easier to administer because it includes the whole population. The volume of survey that needs to be distributed may increase and figuring out who received the survey is clear (Parker, 2011). The content of a census form can range from a few basic questions to many detailed questions, and alternative or combination approaches can be used to solicit or collect data (Martínez-mesa & González-chica, 2016). Censuses are susceptible to the non-sampling errors found in sample surveys and non-sampling errors may arise in various ways, for example, respondents may misinterpret questions on the census form, especially if the questions are vague or too complex (Lavrakas, 2018). To address non-sampling errors, statistical procedures are sometimes applied. For example, to treat unit or item non-response a missing item might be replaced by the item's values from a respondent whose characteristics are similar to those of the non-respondent. However, sample and census surveys both provide value, and when implemented properly they produce valid results (Parker, 2011).

This study used an enumeration sampling technique because it allowed all members of the population to be included in the survey. The population of this study was too small for sampling to be carried out ($N = 571$), hence all members of the population were included in the survey. The other significant reason was that the participants in this study were in a highly controlled environment, and accessible, as they have limited movement. There were no additional costs to be incurred in collecting data from the whole population.

3.5.5 Data collection instrument

Accurate and systematic data collection is critical in conducting scientific research (Abawi, 2014). Data collection allows researchers to gather information that they want about or from their study objects. Chaleunvong (2009) also states that data collection techniques allow researchers to systematically collect information about objects of study. Therefore, in the collection of data, the researcher has to be systematic because if data is collected haphazardly, it will be difficult to answer the research questions of the study in a conclusive way. Depending on the research objectives, the research approach and the research design adopted, methods of data collection include documents review, observation, questionnaire, interviews, focus groups, or a combination of different methods (Abawi, 2014). Below is a brief discussion of some of these data collection techniques:

3.5.5.1 Observation

Observation is a technique that involves systematically selecting, watching and recording behaviour and characteristics of living beings, objects or phenomena using various tools (Chaleunvong, 2009). Examples of tools are eyes, other senses, pen, paper, watch, scales and microscopes. Simester (2017) found that there are different types of observation, namely structured or direct observation, expert observation and participatory exercises. Simester (2017) explains these types as follows: structured or direct is a process in which observations are recorded against an agreed checklist. Expert observation is usually carried out by someone with specific expertise in an area of work, and involves the expert observing and recording of information on a subject. A participatory exercise is where the intended beneficiaries

of a project or programme are involved in planning an observation exercise, observing, and discussing findings.

3.5.3.2 Interview

An interview is a data collection technique that involves the oral questioning of respondent(s), either individually or as part of a group (Chaleunvong, 2009). Examples of tools are interview guides, checklists, questionnaires and a tape recorder. Interviews may be administered formally or informally (Simester, 2017). Moreover, they can be carried out face-to-face or through remote media such as a telephone or Skype. Interviews may also be conducted through written questions via letters or email. Types of interview are structured, unstructured, semi-structured or open-ended. Structured interviews are based around a core set of questions that are always asked in the same order. Semi-structured interviews also contain a core set of questions, but allow the interviewer to ask supplementary questions, or change the order in which questions are asked. Unstructured interviews are interviews in which neither the question nor the answer categories are predetermined (Abawi, 2014; Simester, 2017).

3.5.3.4 Questionnaires

Abawi (2014) defines a questionnaire as a data collection instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. A questionnaire can be administered in different ways. Sending questionnaires by mail with clear instructions on how to answer the questions and asking for mailed responses is one method of doing it. The researcher can also gather all or part of the respondents in one place at one time. Giving oral or written instructions, and letting the respondents fill out the questionnaires or to hand-deliver questionnaires to respondents and collect them later are other ways of administering questionnaires (Chaleunvong, 2009; Muhammad & Kabir, 2016). Questionnaires have advantages over other types of data collection instruments in that they are cheap, do not require as much effort from the questioner, and often have standardised answers that make it simple to integrate data (Muhammad & Kabir, 2016).

3.5.3.5 Focus group discussions

Focus group discussions are facilitated discussions, held with a small group of people who have specialist knowledge or interest in a particular topic (Simester, 2017). Thus, it allows a group of 8-12 participants to freely discuss a certain subject with the guidance of a facilitator or reporter (Chaleunvong, 2009). Focus group discussions are often used to solicit the views of those who would not be willing or able to speak up at larger group meetings (Simester, 2017).

In this study, the data collection instrument used a self-administered questionnaire. The questionnaire was chosen because of the nature of the data required to answer the research questions, the research philosophy, the research approach and the research design adopted. Furthermore, data was collected in a correctional facility, which is considered a high security environment that has many strict regulations. The researcher was also comfortable that questionnaires could be distributed to offenders at their specific sections without requiring any movements. The offenders were able to respond to the questionnaire on their own without feeling intimidated or pressured.

An adapted version of Kolb's Learning Styles questionnaire was administered to collect data in this study. The questionnaire was adapted to ensure that it aligned with the objectives of the study. The questionnaire for this study had two sections, A and B. Section A had 18 items, which included demographic and context relevant information, and of which 16 were close-ended questions and the other two questions open-ended. Participants were expected to circle the answer which was relevant to them on all close-ended questions.

Section B had 80 closed-ended questions linked to Kolb Learning Styles Inventory (KLSI). Participants were expected to make a tick in a box next to the question if they agreed with the statement. Where they disagreed, participants were expected to put a cross in a box. Sample items included "I thrive on the challenge of tackling something new and difference" and "I listen to other people's points of view before putting my own view forward".

A Kolb and Kolb (2005) asserted that the Kolb Learning Style Inventory differs from other tests of learning style and personality used in education by being based on a comprehensive theory of learning and development. Kolb and Kolb stated that experiential learning theory (ELT) defines learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience. The ELT model portrays two dialectically related modes of grasping experience - Concrete Experience (CE) and Abstract Conceptualization (AC)-and two dialectically related modes of transforming experience - Reflective Observation (RO) and Active Experimentation (AE). Moreover, experiential learning is a process of constructing knowledge that involves a creative tension among the four learning modes that is responsive to contextual demands. This process is portrayed as an idealized learning cycle or spiral where the learner touches all the bases - experiencing, reflecting, thinking, and acting-in a recursive process that is responsive to the learning situation and what is being learned. However, this idealized learning cycle may vary by individuals' learning style and learning context.

Kolb and Kolb (2013) report that the Kolb Learning Style Inventory version 4.0 (KLSI 4.0) maintains the high scale reliability of the KLSI 3.1 with an average scale reliability on the Cronbach Alpha of .81 (4.0) vs. .80 (3.1). According to A. Kolb and Kolb a Cronbach alpha in the range of 0.70 - 0.90 is considered to be acceptable and that an alpha exceeding 0.90 may indicate redundancy. The researcher found the instrument to be reliable to the offenders at the Johannesburg Female Correctional Centre because learning style is situational, varying in response to environmental demands. Changes in style may be the result of discontinuous intervening experiences between test and retest or individuals' ability to adapt their style to changing environmental demands (A. Y. Kolb & Kolb, 2013).

Kolb's LSI has been identified as the most influential learning style model as it is based on the theories of how humans learn, with a view that learning based on experience is a fundamental part of development (Kempen & Kruger, 2019). A. Kolb and Kolb (2013) report that there have been six versions of the Learning Style Inventory published over the years, in particular between 1969 and 2011. The Kolb Learning Style Inventory version 4.0 (KLSI 4.0) revised in 2011, is the latest revision

of the original Learning Style Inventory developed by David A. Kolb. The KLSI 4.0 is based on experiential learning theory and is designed to help individuals identify the way they learn from experience. The instrument maintains the external validity, which is that the average correlation between the 3.1 and 4.0 scales equals .92. A. Kolb and Kolb (2013) report that the Kolb Learning Style Inventory 4.0 (KLSI 4.0) maintains the high scale reliability of the KLSI 3.1 with an average scale reliability (Cronbach alpha) of = .81 (4.0) vs. .80 for the (3.1). Therefore, Kolb's questionnaire was reliable and yielded a high reliability coefficient in this study.

3.5.6 Procedure for data collection

Application for permission to conduct this study was sent to the Johannesburg Female Correctional Centre's Education Office. The Education Office referred the application to the Ethics Committee of the Department of Correctional Services (DCS) for approval. After receiving and perusing all the required documents the DCS's Ethics Committee granted permission for the researcher to collect data at the Johannesburg Female Correctional Centre. The permission had a validity period of 24 months. The DCS's Ethics Committee appointed the Manager: Education and Training for the Johannesburg Area as a gatekeeper who assisted the researcher during data collection. This was done to ensure that the DCS policies and procedures, which apply at the Johannesburg Female Correctional Centre, were adhered to throughout the data collection stage.

The Manager: Education and Training designated the Education and Training Coordinator at the Johannesburg Female Correctional Centre to assist with the fieldwork. The researcher guided the Education and Training Coordinator regarding how the questionnaires and consent forms should be completed. The researcher also provided guidance to Educational Facilitators within the Correctional Centre on how to present the information sheet to the participants. Before the data was collected, the Education and Training Coordinator held a briefing meeting with all cell representatives to provide guidance regarding the whole process of data collection. The Education and Training Coordinator distributed questionnaires to offenders per section and per cell in line with DCS security protocols. Marked boxes were made available at each section to enable the return of completed questionnaires. In each

cell, the Education and Training Coordinator identified cell representatives who assisted in collecting back the completed consent forms and questionnaires and place them in the boxes provided. A total of 548 questionnaires were distributed, of which 411 were returned, yielding a response rate of 75%.

The Education and Training Coordinator at the JHB Female Correctional Centre returned the completed consent forms and questionnaires to the researcher in separate boxes in order to protect the identities of the participants.

3.6 DATA ANALYSIS

In preparation for data analysis, the researcher perused all the returned questionnaires to check if they were completed correctly. About 402 of the 411 questionnaires were found to have been properly completed. Nine questionnaires were incomplete and were therefore excluded from the study. The researcher also discovered that 60 participants wrote their names on the questionnaires. The researcher erased the names of the participants with correction fluid to protect the identities of the participants. Data from 402 questionnaires were captured on a spreadsheet and then later exported to the Statistical Package for Social Sciences (SPSS) software (IBM SPSS statistics version 26 was used) (IBM, 2019).

From the SPSS data set, several statistical techniques were computed within the broad categories of both descriptive and inferential statistics. The specific statistical techniques that were computed to analyse the data in this study are presented below.

3.6.1 Descriptive statistics

Descriptive statistics describe the relationship between variables in a sample or population (All & Bhaakar, 2016). This involves the description of data in terms of frequencies, proportions, mean, median, quartiles, standard deviation and inter-quartiles range (All & Bhaakar, 2016; Hussain, 2014; Lani, 2010; Smith, 2018). Thus, descriptive analysis is used to describe the basic features of the data in the

study. It provides simple summaries about the sample and the measures. Descriptive statistics has the advantage that it enables the collection and summarising of vast amounts of data and information in a manageable and organized manner (Mathur & Kaushik, 2014). The following statistical measures of descriptive data were computed in the analysis:

3.6.1.1 Frequency distribution

Bonett and Wright (2014) define frequency distribution as an organized tabulation or graphical representation of the number of individuals in each category on the scale of measurement. Therefore, it allows the researcher to have a glance at the entire data conveniently. These authors further state that frequency distribution shows whether the observations are high or low and whether they are concentrated in one area or spread out across the entire scale. Thus, frequency distribution presents a picture of how the individual observations are distributed on the measurement scale (Mathur & Kaushik, 2014).

In this study, frequency of responses and percentages have been examined in order to translate numerical facts into more concrete and understandable information. This helped the researcher to determine the number of occurrences of distinct values distributed within each applicable question asked. Therefore, these statistical measures (frequencies and percentages) were examined as part of data analysis. Descriptive statistics provides a fairly straightforward process that can be easily translated into results in a distribution of frequency, percent's and overall averages, and establishes the standard deviation (Mathur & Kaushik, 2014).

3.6.1.2 Cross tabulations

Loeb et al. (2017) report that the most basic type of cross-tabulation (crosstabs) is used to analyse the relationship between two or more variables. The simplest type of cross-tabulation is bivariate analysis, an analysis of two variables. However, the analysis can be expanded beyond that to include multiple variables. In this study, cross-tabulation was used to analyse the relationship between two or more variables.

3.6.2 Inferential statistics

According to Mathur and Kaushik (2014) inferential statistics involve techniques for making inferences about the whole population on the basis of observations obtained from samples. Therefore, inferential statistics includes methods to generalise data findings to the related populations with certain levels of confidence and assurance of significance of results (Hussain, 2014). The following inferential tests were computed in this study.

3.6.2.1 Chi-square test

Ugoni and Walker (1995) define the Chi square test as a non-parametric statistical test which measures the association between two categorical variables. The chi-square test was run to establish if there is a relationship between various categorical variables in this study. The test has a null hypothesis which assumes that there is no relationship between the two categorical variables, they are independent. If the Asymptotic significance (2-sided) is greater than 0.1, this study will reject the null hypotheses and conclude that there is no significant relationship between the categorical variables in question.

3.6.2.2 Kruskal Wallis test

Ghoodjani (2016) states that the Kruskal-Wallis test is used to determine whether the medians of two or more groups differ when the data is not symmetric, such as skewed data. Therefore, the Kruskal-Wallis test is a nonparametric alternative to a one-way analysis of variance (ANOVA). According to Ghoodjani, the test does not require the data to be normal, but instead uses the rank of the data values as opposed to the actual data values for the analysis. The Kruskal-Wallis test does not make assumptions about normality (Ostertagová et al., 2014). However, it assumes that the observations in each group come from populations with the same shape of distribution and that the samples are random and independent. A Kruskal Wallis test was computed to determine if there was a statistically significant difference between two or more groups of an independent variable on a continuous or ordinal dependent variable.

3.6.2.3 Correlation coefficient (Pearson correlation coefficient)

Schober and Boer (2018) define correlation as a measure of a monotonic association between 2 variables. A monotonic relationship between 2 variables is one in which either, (1) as the value of 1 variable increases, so does the value of the other variable; or (2) as the value of 1 variable increases, the other variable value decreases (Samuels, 2015). In correlated data, either the change in the magnitude of one variable is associated with a change in the magnitude of another variable, in the same or in the opposite direction. In other words, higher values of one variable tend to be associated with either higher (positive correlation) or lower (negative correlation) values of the other variable, and vice versa (Schober & Boer, 2018). A correlation test was computed to measure the statistical relationship between two continuous variables of this study.

3.6.3 Validity and reliability of the study

This study was carried out in a manner that ensures that its findings are valid and reliable. The following aspects were addressed:

3.6.3.1 Validity

Validity is defined as the extent to which a concept is accurately measured in a quantitative study (Heale & Twycross: 2015). There are three types of validity:

(a) Content validity

According to Taherdoost (2016) content validity is defined as the degree to which items in an instrument reflect the content universe to which the instrument will be generalized. Taherdoost stated that content validity involves evaluation of a new survey instrument in order to ensure that it includes all the items that are essential and eliminate under desirable items to a particular construct domain.

The Kolb's Learning Style Inventory (LSI) is well represented in literature and has been fairly used in different countries, for example the United Kingdom, Canada,

Australia, China and South Africa (Simelane-Mnisi & Mji, 2015). KLSI 4.0 is highly correlated with scores on the previous KLSI 3.1, making validity research with previous LSI versions applicable to the KLSI 4.0 and maintaining the external validity that the instrument has shown over the years. The average correlation between 3.1 and 4.0 scales equals .92 (A. Kolb & Kolb, 2013).

(b) Construct validity

Construct validity refers to how well a researcher translated or transformed a concept, idea or behaviour that is a construct into a functioning and operating reality, the operationalization (Taherdoost, 2016). Simelane and Mji found that the construct validity of the LSI 3.1 studies evaluated by A. Kolb and Kolb (2005) revealed that correlation coefficients and factor analyses were the most computed methods. Construct validity, on the other hand was determined through computing correlation coefficients of the different subscales of the LSI 3.1 as opposed to computing factor analysis. The LSI 4.0 increases construct validity by increasing the statistical independence of the grasping (AC-CE) and transforming (AE-RO) dimensions of the learning cycle. The independence of AC-CE and AE-RO dimensions has increased, reducing the negative correlation from -.27 in the 3.1 to -.09 in the 4.0. RO is unrelated with AC-CE as experiential learning theory (ELT) predicts, but correlation of AE with AC-CE is negative, with AC-CE at -.169.

Correlations of AC and CE with AE-RO are both very low, as they should be. As predicted, both AC and CE (-.369) and AE and RO (-.418) are highly correlated negatively. The cross dimensional scales, CE/AE, CE/RO and AC/RO have low correlations as predicted, but AC/AE has a higher negative correlation (-.407) than predicted. Overall, with the exception of the negative correlation between AC and AE, the scale's inter-correlations demonstrate construct validity by showing excellent correspondence with ELT predictions (Kolb & Kolb, 2013). Moreover, the scores on the KLSI 4.0 are highly correlated with scores on the previous KLSI 3.1 (A. Kolb & Kolb, 2013).

(c) Criterion validity

According to Mohajan (2017) criterion validity is the extent to which a measure is related to an outcome. It measures how well one measure predict an outcome for another measure. Furthermore, Mohajan stated that criterion validity is used to predict future or current performance. Therefore, it correlates test results with another criterion of interest. Moreover, it deals with the relationship between scale scores, and some specific measurable criterion. It tests how the scale differentiates individuals on the criterion it is expected to predict. Relationships have been empirically examined in two ways: through a first order correlation matrix of the six LSI scales and through factor analysis of the four primary LSI scales and/or inventory items. ELT proposes that the four primary modes of the learning cycle, namely CE, RO, AC and AE are composed of two independent dialectic (bi-polar) dimensions, that is a “grasping” dimension measured by the combination score AC-CE and a “transformation” dimension measured by the AE-RO combination score.

In this study the prediction was that AC-CE and AE-RO should be uncorrelated. In addition, that the CE and AC scales should not correlate with AE-RO and the AE and RO scales should not correlate with AC-CE. The dialectic poles of both combination dimensions should be negatively correlated, though not perfectly since the dialectic relationship predicts the possibility of developmental integration of the opposite poles. However, the cross dimensional scales—CE/RO, AC/AE, CE/AE and AC/RO should not be correlated as highly as within dimension scales (Kolb & Kolb, 2013). In this study all the correlations coefficients between the learning styles and demographic variables (age and educational achievement) are of low degree and very close to zero, with all correlations between age and learning styles on the negative. For educational achievement, all correlation coefficients with learning styles are positive but close to zero (0), with the exception of education and the accommodating/activist learning style, which is negative but statistically insignificant ($r = -0.117$).

(d) Internal validity

Slack and Draugalis (2001) refers internal validity to the degree of confidence that the casual relationship being tested is trustworthy and not influenced by other factors or variable. The findings of this study are considered legitimate because the researcher used enumeration sampling, which gave all the offenders a chance to participate in the study. The participants were informed in advance about the study and participation was voluntarily. The questionnaire was adapted in a way that even a simple person could understand and complete it. The data was recoded and analysed by a professional statistician. The study can be replicated in similar contexts.

(e) External validity

External validity refers to the extent to which results from a study can be applied (generalised) to other situations, groups and events (Slack & Draugalis, 2001). The same instrument used to collect data at the Johannesburg Female Correctional Centre could be used at other correctional centres with similar profile. Thus, the findings of this study can be generalized to other correctional centres with similar contexts and offenders' profile.

3.6.3.2 Reliability

Reliability relates to the consistency of a measure (Heale & Twycross, 2015). Cronbach's alpha coefficients were used to determine the internal consistency of Kolb's questionnaire. Cronbanch's Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale. It is expressed as a number between 0 and 1 (Tavakol & Dennick, 2011). Cronbach's alpha test establishes if a multiple question scale is reliable.

It has been proven to be valid and reliable in identifying learning style preferences (Simelane-Mnisi & Mji, 2015). For example, in two of the studies the researchers reported the results of the first study using an online sample of 5,023 participants, where the reported alpha values ranged between .77 and .84 for the four subscales

of the KLSI 3.1. The alpha values were .82 for abstractness over concreteness (AC-CE) and .82 for action over reflection (AE-RO). In the second, with a sample of 221 participants, alpha values ranged between .78 and .84 for the four subscales of the KLSI 3.1. On the other hand, the alpha values were .77 (AC-CE) and .84 (AE-RO) (Simelane-Mnisi & Mji, 2015).

3.7 ETHICAL CONSIDERATIONS

As a concept, research ethics refers to a complex set of values, standards and institutional schemes that help constitute and regulate scientific activity (Kaleberg, 2006). These may include honesty, objectivity, and respect for intellectual property, social responsibility, confidentiality and non-discrimination (Bassey & Owan, 2019). The researcher had to abide by the Unisa Policy on Research Ethics, and by the Department of Correctional Services (DCS) Policies and Ethical guidelines in the conduct of this research. The researcher also respected the rights of the participants. Participants were informed that the research was conducted for study purposes. It was explained to them that the participation is voluntarily, and they can withdraw at any stage without any consequence. Moreover, the participants have completed the questionnaire in their cells within their comfort and without any pressure. The field workers were their fellow offenders where they can ask questions freely. The researcher has also observed the ethical considerations that apply to social science research as stated by Kaleberg (2006). The ethical principles applicable to social science were adhered to as follows:

The value of research and research ethics: The researcher adhered to research ethics standards and was honest and unbiased throughout all the stages of the study. For example, the researcher clearly explained the risk and the purpose of the study to all participants. The participants were given an equal chance to participate in the study.

The social, cultural and linguistic roles of research: The researcher has adhered to the language that the DCS required for communication. For example, the researcher was instructed not to use the word 'prison' but to use Correctional Centre instead. The researcher was also instructed not to use the word 'prisoner' but

'offender' in accordance with the South African legislative prescripts. The researcher complied with the instructions of the DCS throughout the study.

The communication and enforcement of research ethics standards: The researcher developed and maintained good research practice by following all the procedures as required by the DCS and the University of South Africa. Therefore, the researcher applied for and received an ethical clearance certificate from the University of South Africa's (UNISA) College of Economic and Management Science's Research Ethics Review Committee. The DCS granted permission to collect data at the Johannesburg Female Correctional Centre. Thus, the DCS informed the Regional and Area Commissioner of the Johannesburg Female Correctional Centre about the research project. DSC also appointed an internal guide to assist in this research project.

The obligation to respect human dignity: The researcher worked on the basis of basic respect for human dignity. The topic chosen by the researcher had no intention to expose the correctional centre or offenders. Its sole aim was to examine the learning styles preferred by offenders at the Johannesburg Female Correctional Centre. The dignity of the participants and the attendant protocols of DCS were respected at all times during the conduct of this study.

The obligation to respect integrity, freedom and right to participate: The participation was voluntarily and all participants were free to withdraw at any stage without any consequence.

The obligation to prevent harm and suffering: The questionnaires were given to the participants at their different sections. There was no need for participants to move unnecessarily to be able to participate in the study. There is no harm to participants that was reported.

The obligation to inform research subjects: The researcher provided all participants with an information sheet that included all the information required to gain a reasonable understanding of the phenomenon under investigation, the importance of participating in the research project, and the purpose of the research.

The obligation to obtain free and informed consent: The researcher obtained consent from participants without any pressure or constraints on individual freedom of choice. The information about the research was given on a form that was understandable to the participants. The participants were also informed that they have the right to withdraw from participation at any time, without incurring any negative consequences for themselves.

The obligation to respect individuals' privacy and close relationships: The researcher showed due respect for participants' privacy. Participants were entitled to check whether confidential information about themselves is accessible to others. This was done in order to protect participants against unwanted interference and exposure.

The obligation to respect confidentiality: The researcher did not use any information that could harm participants; and the information received was anonymised as there were no identities disclosed. Where participants provided information that disclosed their identities, such information was erased before the questionnaires were processed. Strict requirements were applied to ensure that information that would make it possible to identify participants was stored and destroyed.

The obligation to strict re-use: The researcher undertook to ensure that identifiable data collected for this research purpose cannot automatically be used for any other research.

3.8 PROBLEMS ENCOUNTERED

The most notable challenge that the researcher encountered during the conduct of the study was that the Department of Correctional Services took considerable time to respond to the researcher's application for permission to conduct the research due to the stringent departmental protocols that must be complied with. This delay affected the project plan of the researcher, which eventually had to be amended. The other challenge related to data collection because on some days, field workers could not

collect questionnaires from offenders as planned when their plans were disrupted because of the early lockup of the centre.

The study was also constrained by a lack of resources. The researcher conducted the study while incarcerated (behind bars). Therefore, the researcher only relied on online resources but had very limited internet access. Communication with the supervisor and the university librarian was slow as the researcher could only access the internet at specific times during the day. The researcher was not allowed any movement due to incarceration, and therefore the researcher could not benefit from workshops offered by the university. Most of the online workshop sessions by the university were offered during the hours when the researcher could not access the internet.

The next chapter (Chapter 4) focuses on the presentation, analysis and interpretation of the results.

CHAPTER 4: PRESENTATION, ANALYSIS AND INTERPRETATION OF THE RESULTS

4.1 INTRODUCTION

In chapter 3 the methodology used in this study was discussed. In this chapter the data collected has been arranged in a meaningful order to enable analysis and interpretation. The chapter presents the demographic profile of the respondents, frequency analysis and cross tabulation of the contextual variables, reliability coefficient analysis of the learning styles scale, the chi-square, Kruskal-Wallis test and correlation coefficient results. The chapter presents the summary of key findings of the study and concludes with a chapter summary.

4.2 DEMOGRAPHIC PROFILE OF RESPONDENTS

This study involved 411 sentenced offenders from a population of 571 at the Johannesburg Female Correctional Centre, thus representing a response rate of 75%. This is owing to the fact that nine (9) of the 411 questionnaires received were incomplete and therefore not useful for further analysis. The study is therefore based on 402 questionnaires which were found to have been correctly completed. The profile of the respondents was measured across two demographic variables, namely, age and level of education. The decision to include only these two demographic variables was informed by the profile of the participants (who are in custody), the purpose and the context of the study.

4.2.1 Age of respondents

Respondents were asked to indicate their age range on the questionnaire. As depicted in Table 4.1, about 65% of the respondents were aged between 18 – 40 years. Only 4 respondents did not indicate their age category. It is clear from this that the majority of offenders at the Johannesburg Female Correctional Centre are young people who have not yet reached the mid-life stage.

Table 4.1

Age of respondents

Ages of respondents	Frequency	Percent
18-30 years	115	28,6
31-40 years	147	36,6
41-50 years	91	22,6
51 and above	45	11,2
No response	4	1,0
Total	402	100,0

4.2.2 Educational achievements of respondents

Respondents were asked to indicate their level of education. As depicted in Table 4.2, about 66% of the respondents have educational achievements that range between Grade 8 and Grade 12 ($n = 267$), with only 22% of the respondents ($n = 90$) holding at least a 3-year post school qualification. Evidence from this table clearly shows that the majority of offenders have educational achievements at Grade 12 (Matric Certificate) and below.

Table 4.2

Level of education

Level of education	Frequency	Percent
Grade R- Grade 7	37	9,2
Grade 8- Grade 11	137	34,1
Grade 12	130	32,3
A 3-year qualification (Degree/Diploma) and higher	90	22,4
No response	8	2,0
Total	402	100,0

4.3 FREQUENCY ANALYSIS OF CONTEXTUAL VARIABLES

This section presents the results of the frequency analysis of respondents' answers, based on questions asked pertaining to correctional centre activities.

4.3.1 Respondents' involvement in studies within the correctional centre

Respondents were asked to indicate if they were studying or not studying during their stay at the correctional centre. As depicted in Table 4.3 only 22% of the respondents ($n = 92$) were studying while 74% of the respondents ($n = 299$) were not studying. Studying in this context implied formal education, not rehabilitation and/or involvement in training programmes. Table 4.3 shows that the number of offenders who were studying was low. It can be expected that the number of those who were studying was low because most offenders focus on rehabilitation programmes, which they believe help them to qualify for parole.

Table 4.3

Respondents' involvement in studies

Involvement in studies	Frequency	Percent
Yes	92	22,9
No	299	74,4
No response	11	2,7
Total	402	100,0

4.3.2 Respondents' involvement in correctional centre rehabilitation programmes

Respondents were asked to indicate their involvement in rehabilitation programmes at the correctional centre. Table 4.4 shows that 67% of the respondents ($n = 271$) were involved in the correctional centre's rehabilitation programmes and that 28% ($n = 116$) were not involved in any rehabilitation programmes. This shows that the majority of offenders take part in rehabilitation programmes because this helps them to qualify for parole. This level of participation shows that the majority of the offenders want to be rehabilitated in order to re-integrate with their communities as changed and better people.

Table 4.4

Respondents' involvement in rehabilitation programmes

Rehabilitation programmes	Frequency	Percent
Yes	271	67,4
No	116	28,9
No response	15	3,7
Total	402	100,0

4.3.3 Instructional methods used in the correctional centre school

Respondents were asked to indicate the instructional methods that were used at their school. As depicted in Table 4.5 the instructional method that was used the most was classroom discussion, as indicated by 31% of the respondents ($n = 213$), while the least used method was debriefing, as indicated by only 7% of the respondents ($n = 47$). The total responses recorded were 671 because the respondents were allowed to indicate more than one answer. This shows that the Johannesburg Female Correctional Centre used different instructional methods but that the most common methods are classroom discussion and lecturing. This can be expected as correctional facilities are considered to be high security institutions that have strict regulations. Therefore, classroom discussions and lecturing may be considered the instructional methods that may not compromise security at the Johannesburg Female Correctional Centre.

Moreover, lecturing is associated with learners who fall in the personality category of assimilator. They study best in an atmosphere that highlights organised analysis and where fresh evidence is provided. They prefer clear explanations rather than practical opportunity. Lectures are their preference, with demonstrations where possible, and they respect the knowledge of the experts.

Table 4.5

Instructional methods used in the correctional centre

Instructional method	Responses	Percent
Lecturing	151	22,5
Demonstration	75	11,2
Classroom discussion	213	31,7
Debriefing	47	7,0
Classroom action research	67	10,0
None of the above	60	8,9
No response	58	8,6
Total	671	100,0

4.3.4 Instructional methods used in rehabilitation programmes

Respondents were asked to indicate the instructional methods that were used in their rehabilitation programmes. As indicated in Table 4.6 the Johannesburg Female Correctional Centre uses different instructional methods in rehabilitation programmes. The most common instructional method was classroom discussion as indicated by 33% of the respondents ($n = 227$) and the least used was debriefing, with only 7% of the respondents ($n = 48$). The total responses were 680 because the respondents were allowed to indicate more than one answer in this item. Considering the respondents' environment, it is expected that the Johannesburg Female Correctional Centre would use instructional methods that may not compromise the security of the facility. Correctional centres are more concerned about security than anything else. Therefore, classroom discussion and lecturing may be considered the instructional methods that may not compromise the security at the correctional centre. Moreover, through lecturing learners are asked to apply what they have learned in their own lives and work contexts. This is what is referred to as the conceptualisation phase in the Kolb learning style model.

Table 4.6

Instructional method used during the rehabilitation programmes

Programmes instructional method	Responses	Percent
Lecturing	151	22,2
Demonstration	85	12,5
Classroom discussion	227	33,4
Debriefing	48	7,1
Classroom action research	68	10,0
None of the above	55	8,1
No response	46	6,8
Total	680	100,0

4.3.5 Relevance of instructional methods to respondents' learning experiences

Respondents were asked to rate the relevance of the instructional methods used at their correctional centre in terms of relevance to their learning experience. As depicted in Table 4.7, about 79% of the respondents ($n = 172$) indicated that instructional methods used at the correctional centre were relevant to their learning experiences. Only 4% of the respondents ($n = 19$) indicated that the instructional methods were irrelevant. Therefore, it may be concluded that the respondents find the instructional methods used relevant to their learning experiences because they may have had previous exposure to similar instructional methods prior to their incarceration, for example, at school, college or university. Through these instructional methods, offenders are then asked to apply what they have learned in their own lives and work contexts.

Table 4.7

Respondents' opinion of the relevance of the instructional method

Instructional method	Responses	Percent
Missing value	8	2,0
Very relevant	152	37,8
Relevant	120	29,9
Somewhat relevant	55	13,7
Irrelevant	19	4,7
No response	48	11,9
Total	402	100,0

4.3.6 Instructional medium used in the correctional centre

The respondents were asked to identify the instructional medium that they use during learning at their correctional centre, and they had the option to choose more than one answer. Table 4.8 shows that different instructional mediums were used during learning at the Johannesburg Female Correctional Centre. The most used instructional medium was the teacher as indicated by 32% of the respondents ($n = 234$) followed by the chalkboard as indicated by 21% of the respondents ($n = 156$). This can be expected considering the environment, which is a correctional centre with normal protocols that have to be followed. A correctional facility is considered a high security institution with considerable strict regulations. The least used instructional medium was the projector, as indicated by only 5% of the respondents ($n = 42$). This also may not be surprising considering the environment of the respondents, which is a correctional centre that may be lacking in resources.

Table 4.8

Instructional medium used at the Johannesburg Female Correctional Centre

Instructional medium	Responses	Percent
Computer	74	10,2
Projector	42	5,8
Charts	75	10,3
Internet	18	2,5
Teacher	234	32,3
Chalk board	156	21,5
Other	41	5,7
No response	85	11,7
Total	725	100,0

4.3.7 Instructional medium usage during learning in the correctional centre

Respondents were asked to indicate the frequency at which they use specific instructional mediums during learning in the correctional centre. Table 4.9 indicates that 31% of the respondents ($n = 127$) always use the same instructional medium. It is possible that those respondents who indicated that they always used the same instructional medium do so because they take part in both school and rehabilitation programmes. The results also reveal that 19.2% of the respondents ($n = 77$) used instructional mediums sometimes while 18.2% ($n = 73$) indicated that they were not sure of the frequency of instructional medium usage. This may be due to a lack of understanding of the question as the majority of respondents had very low educational qualifications and some did not take part in school or rehabilitation programmes. Therefore, it is clear that the use of instructional mediums ranged from always to sometimes.

Table 4.9

Usage of instructional medium

Response	Frequency	Percent
Always	127	31.6
Very often	58	14.4
Not sure	73	18.2
Sometimes	77	19.2
Seldom	20	5.0
No response	47	11.7
Total	402	100

4.3.8 Learning preferences of respondents

Respondents were asked to indicate their learning style preferences. Table 4.10 shows that the majority of respondents preferred practical tasks and very little theory with 40% of the respondents ($n = 164$) indicating that they preferred practical tasks and very little theory and 33% ($n = 135$) indicating that they preferred handouts or something to take away and study. Only 4% of the respondents ($n = 19$) indicated that they preferred shortcuts and tips. These results, therefore, reveal that the majority of respondents preferred practical tasks and very little theory. This may be one of the reasons why most of the respondents did not attend formal school, but focused on other programmes within the correctional facility. The results also show that offenders at the Johannesburg Female Correctional Centre displayed evidence of the personality trait of accommodator. The accommodating learning style combines doing and feeling as a way to learning.

Table 4.10

Respondents' learning style preferences

Learning style preference	Frequency	Percent
I prefer practical tasks and very little theory	164	40,8
I prefer handouts, something to take away and study.	135	33,6
I prefer lots of breaks to go off, read, and discuss.	38	9,5
I prefer shortcut and tips.	19	4,7
No response	46	11,4
Total	402	100,0

4.3.9 Respondents' opinion about knowing their learning style

Respondents were asked to indicate their opinion about the necessity of knowing their preferred learning style in the correctional centre. As depicted in Table 4.11, about 78% of the respondents (n = 315) indicated that knowing their learning styles was essential. Only 2% of the respondents (n = 8) indicated that knowing their learning styles was unnecessary. It is evident from this that the majority of the respondents were interested in knowing their learning style preferences as individuals.

Table 4.11

Respondents' opinion about knowing their learning style preferences

Opinion about knowing learning styles preference	Frequency	Percent
Very necessary	199	49,5
Necessary	116	28,9
No opinion	38	9,5
Unnecessary	8	2,0
Very unnecessary	5	1,2
No response	36	9,0
Total	402	100,0

4.3.10 Influence of learning style on respondents' learning

Respondents were asked if they thought that learning styles had an influence on their learning. Table 4.12 shows that 79% of the respondents ($n = 321$) believe that learning styles influence their learning. Only 11% of the respondents ($n = 45$) indicated that they did not believe that learning styles influenced their learning. A positive response by the majority of the respondents should make a strong case for adoption of the recommendations of the current research, which sought to examine the learning styles preferences of offenders at the Johannesburg Female Correctional Centre.

Table 4.12

Learning style influence on learning

Influence of learning style	Frequency	Percent
Yes	321	79,9
No	45	11,2
No response	36	9,0
Total	402	100,0

4.3.11 Influence of learning style on respondents' learning experiences

Respondents were asked to indicate the extent to which they thought that learning styles affected their learning experience. Table 4.13 shows that 65% of the respondents ($n = 261$) indicated that learning styles affected their learning experience to a great extent. Only 2% of the respondents ($n = 8$) indicated that learning styles affected their learning experiences rarely. The 65% of the respondents who indicated that learning styles affected their learning to a great extent confirms that offenders are eager to know their learning style preferences.

Table 4.13

Learning styles and respondents' learning experiences

Influence on learning experience	Frequency	Percent
Great extent	262	65,2
Lesser extent	30	7,5
Not sure	48	11,9
Not often	15	3,7
Rarely	8	2,0
No response	39	9,7
Total	402	100,0

4.3.12 Teaching methods used in the rehabilitation programmes

Respondents were asked to indicate the teaching methods that are used in their rehabilitation training programmes. Table 4.14 shows that the teaching method often used was discussion with 65% of the respondents ($n = 264$) selecting it. Considering the respondents' environment, which is that of a correctional centre, the discussion method may be preferred because it does not compromise the security of the centre. Only 2% of the respondents ($n = 8$) indicated that they preferred the demonstration method. The reason may be that most of the programmes presented do not require the demonstration method. Moreover, it can be assumed that respondents had no choice but to prefer the discussion method since it was the dominant method the correctional centre used in rehabilitation programmes.

Table 4.14

Teaching methods used in the rehabilitation programmes

Teaching method	Frequency	Percent
Discussion method	264	65,7
Questioning method	23	5,7
Role playing method	16	4,0
Demonstration method	8	2,0
Other	20	5,0
No response	71	17,7
Total	402	100,0

4.3.13 Respondents' opinions about assessment at the end of the class or rehabilitation programme

Respondents were asked if they are exposed to assessment at the end of their classes or programmes. Table 4.15 indicated that 74% of the respondents ($n = 298$) indicated that they were assessed at the end of their classes or programmes. Only 14% of the respondents ($n = 60$) indicated that they did not have any form of assessment at the end of their classes or programmes. It may be concluded that assessment was done on most of the programmes. However, it may be that where respondents indicated that no assessment was conducted the class activities or programmes did not need to be assessed due to the learning design and outcomes of the programmes. At the end of such programmes, participants just receive certificates of attendance.

Table 4.15

Assessment at the end of class or rehabilitation programmes

Assessment is done	Frequency	Percent
Yes	298	74,1
No	60	14,9
No response	44	10,9
Total	402	100,0

Respondents were asked to indicate the assessment method that was used at the end of their classes or rehabilitation programmes. Table 4.16 shows that the Johannesburg Female Correctional Centre used different assessment methods, such as written tests, report writing, oral assessment and presentation of a task or project. The majority of the respondents (43%) indicated that they wrote a report, followed by those who wrote a test, representing 25% of the respondents ($n = 101$). If the majority of respondents wrote a test or report, it means that most of the classes or rehabilitation programmes are theory based. Therefore, offenders should be able to read and write. Only 2% of the respondents ($n = 8$) indicated that they presented a task or project. This shows that the numbers of practical programmes that require

offenders to present tasks (role plays) or projects in the correctional centre are limited.

Table 4.16

Assessment method used

Assessment method	Frequency	Percent
Write a test	101	25,1
Write report	174	43,3
Oral assessment	16	4,0
Present a task or project	8	2,0
Other	21	5,2
No response	82	20,4
Total	402	100,0

4.4 CROSS-TABULATION OF RESULTS OF CONTEXTUAL VARIABLES

This section presents the results of cross-tabulations of contextual variables in this study. The purpose is to examine relationships within the data that might not be readily apparent by analysing total responses. This enabled the researcher to establish how the specific contextual variables correlate to one another. The cross-tabulation results are presented next.

4.4.1 Cross-tabulation between instructional methods used at the correctional centre school and relevance to respondents' learning experiences

Table 4.17 depicts the results of instructional methods used at the correctional centre school and their relevance to the respondents' learning experiences. Results show that the majority of respondents ($n = 202$) indicated that classroom discussion was the instructional method used most at the correctional centre. However, in terms of relevance to learning experience 84,6% of the respondents ($n = 171$) indicated that classroom discussion was relevant to their learning experience. Only 1% of respondents ($n = 2$) indicated that classroom discussion was irrelevant to their learning experience. Lecturing was the second preferred instructional method of the

respondents ($n = 145$), with 82,3% ($n = 121$) indicating that it was relevant to their learning experiences. Only a paltry 1,4% of the respondents ($n = 2$) indicated that lecturing was irrelevant to their learning experiences. This can be expected, as classroom discussion is the most used instructional method in schools, while lecturing is the instructional method used most at colleges and universities. Therefore, the respondents may find classroom discussion and lecturing to be relevant to them because respondents may have had previous exposure to these types of instructional methods from schools, colleges and universities.

Moreover, learners who are assimilators prefer lecturing because they study best in an atmosphere that highlights organised analysis and that provides fresh evidence. The assimilating learning style combines watching and thinking as ways to learn. Furthermore, in Table 4.17, debriefing was the least preferred instructional method of the respondents ($n = 42$). Of those respondents who are exposed to debriefing as an instructional method, 83,4% indicated that the method was relevant to their learning experiences. However, given the low number of respondents who selected debriefing as an instructional method, it is clear that most of the tasks and programmes that respondents were involved in within the correctional centre did not use debriefing as an instructional method.

Table 4.17

Instructional methods used at the correctional centre school and their relevance to respondents' learning experiences

Instructional method		Relevance to learning experience				Total
		Very relevant	Relevant	Somewhat relevant	Irrelevant	
Lecturing	Count	62	59	24	2	147
	% within Instructional methods	42.2%	40.1%	16.3%	1.4%	
Demonstration	Count	29	33	9	1	72
	% within Instructional methods	40.3%	45.8%	12.5%	1.4%	
Classroom discussion	Count	93	78	29	2	202
	% within Instructional methods	46.0%	38.6%	14.4%	1.0%	
Debriefing	Count	17	18	6	1	42
	% within Instructional methods	40.5%	42.9%	14.3%	2.4%	
Classroom action research	Count	29	29	6	1	65
	% within Instructional methods	44.6%	44.6%	9.2%	1.5%	
None of the above	Count	28	9	5	13	55
	% within Instructional methods	50.9%	16.4%	9.1%	23.6%	
No response	Count	9	8	2	0	19
	% within Instructional methods	47.4%	42.1%	10.5%	0.0%	
Total	Count	267	234	81	20	602

Percentages and totals are based on responses

4.4.2 Cross-tabulation between instructional methods used during the correctional centre rehabilitation programmes and relevance to respondents' learning experiences

Table 4.18 presents the results of instructional methods used during the rehabilitation programmes and their relevance to the respondents' learning experiences. Results show that the majority of respondents ($n = 217$) indicated that classroom discussion was the dominant instructional method used in rehabilitation programmes. Of this number, 84,3% ($n = 183$) of the respondents indicated that classroom discussion was relevant to their learning experiences. A total of 0,9% ($n = 2$) of respondents indicated that classroom discussion was irrelevant to their learning experiences. Lecturing was the second preferred instructional method of the respondents ($n = 145$). A total of 118 respondents (81,3%) who were exposed to lecturing as an instructional method indicated that this method was relevant to their

learning experiences. Only a paltry 2.1% of the respondents ($n = 3$) indicated that lecturing was irrelevant to their learning experiences. This is to be expected, as classroom discussion is the instructional method used most at schools and lecturing the instructional method used most at colleges and universities. Therefore, the respondents may find classroom discussion and lecturing to be relevant to them because of previous exposure to these types of instructional media from schools, colleges and universities. In addition, these results show that the respondents displayed the assimilator personality learning style. Assimilators prefer clear explanations rather than opportunities for practical demonstration. Therefore, they like readings, lectures and exploring analytical models. Debriefing was the least preferred instructional method by the respondents ($n = 45$). Of this total, 42 respondents (93,3%) who were exposed to debriefing indicated that this method was relevant to their learning experiences. The explanation that bears relevance to these results is that most activities pertaining to rehabilitation programmes may not be compatible with debriefing as an instructional method.

Table 4.18

Instructional methods used in the rehabilitation programmes and their relevance to respondents' learning experiences

Instructional methods		Relevance to learning experience				Total
		Very relevant	Relevant	Somewhat relevant	Irrelevant	
Lecturing	Count	63	55	24	3	145
	% within Instructional methods	43.4%	37.9%	16.6%	2.1%	23,6%
Demonstrations	Count	34	39	9	1	83
	% within Instructional methods	41.0%	47.0%	10.8%	1.2%	13,5%
Classroom discussion	Count	95	88	32	2	217
	% within Instructional methods	43.8%	40.6%	14.7%	0.9%	35,3%
Debriefing	Count	23	19	3	0	45
	% within Instructional methods	51.1%	42.2%	6.7%	0.0%	7,3%
Classroom action research	Count	34	23	8	1	66
	% within Instructional methods	51.5%	34.8%	12.1%	1.5%	10,7%
None of the above	Count	23	10	5	13	51
	% within Instructional methods	45.1%	19.6%	9.8%	25.5%	8,3%
No response	Count	5	0	2	0	7
	% within Instructional methods	71.4%	0.0%	28.6%	0.0%	1,1%
Total	Count	277	234	83	20	614
		100%	100%	100%	100%	100%

Percentages and totals are based on responses

4.4.3 Cross-tabulation between learning styles and their effect on respondents' learning experiences

Table 4.19 depicts the results of learning styles and their effect on the respondents' learning experiences. A total of 361 of the respondents indicated the learning style they preferred. The divergence learning style was the most preferred with 299 ($n = 82,8\%$) respondents, followed by the assimilation learning style with 41 respondents ($n = 11,4\%$). The accommodation learning style was preferred by 12 respondents (n

= 3,3%) while the convergence learning style was preferred by 9 respondents ($n = 2,5\%$).

Of the respondents who indicated a preference for the divergence learning style, 72,6% indicated that the learning style had an effect on their learning experience to a great extent. For respondents who indicated a preference for the assimilation learning style ($n = 41$), about 75,6% ($n = 31$) indicated that the learning style had an effect on their learning style to a greater extent. In terms of the spread of responses for those respondents who indicated that learning styles had an effect on their learning experience to a great extent, 217 (83,1%) preferred the divergence learning style, followed by 31 respondents (11,9%) who prefer the assimilation learning style.

These results show clearly that the majority of the respondents prefer the divergence learning style, which means they prefer working in groups, receive personal feedback, collect information and make use of imagination to solve problems. In the same vein, the majority of respondents indicated that learning style had an effect on their learning experiences to a great extent. The majority of respondents therefore view concrete situations from numerous different viewpoints.

Table 4.19

Learning styles' effect on learning experience

Effect on learning experience		Learning styles				
		Accommodation	Divergence	Convergence	Assimilation	Total
Great extent	Count	9	217	4	31	261
	% within learning experience	3,4%	83,1%	1,5%	11,9%	100,0%
	% within learning styles	75,0%	72,6%	44,4%	75,6%	72,3%
Lesser extent	Count	1	27	1	1	30
	% within learning experience	3,3%	90,0%	3,3%	3,3%	100,0%
	% within learning styles	8,3%	9,0%	11,1%	2,4%	8,3%
Not sure	Count	0	40	3	4	47
	% within learning experience	0,0%	85,1%	6,4%	8,5%	100,0%
	% within learning styles	0,0%	13,4%	33,3%	9,8%	13,0%
Not often	Count	2	9	1	3	15
	% within learning experience	13,3%	60,0%	6,7%	20,0%	100,0%
	% within learning styles	16,7%	3,0%	11,1%	7,3%	4,2%
Rarely	Count	0	6	0	2	8
	% within learning experience	0,0%	75,0%	0,0%	25,0%	100,0%
	% within learning styles	0,0%	2,0%	0,0%	4,9%	2,2%
Total	Count	12	299	9	41	361
	% within learning experience	3,3%	82,8%	2,5%	11,4%	100,0%
	% within learning styles	100,0%	100,0%	100,0%	100,0%	100,0%

4.4.4 Cross-tabulation between instructional medium used in the correctional centre and frequency of usage of such medium

Table 4.20 shows that the teacher was the most frequently used instructional medium with total responses equalling 233. Of this number, 137 respondents (58,7%) indicated that the medium is used very often to always. On the contrary, 69 respondents (29,6%) indicated that the medium is used sometimes to seldom. The chalkboard was the second most used medium with 154 responses recorded. About 57,7% ($n = 89$) of the respondents who chose this medium indicated that the medium is used very often to always. However, about 33,1% ($n = 51$) of the respondents who

selected this medium indicated that it is used sometimes to seldom. The results reveal that the most frequently used instructional medium was the teacher and chalkboard. This can be expected as teacher and chalkboard have been used in schools for many years. Therefore, the Johannesburg Female Correctional Centre prefers the use of teacher and chalkboard as instructional mediums to avoid compromising the security in the facility. The internet was the least used instructional medium, with only 18 respondents indicating they used it, and 61% of these respondents ($n = 11$) indicating that internet use ranges from very often to always. It can be expected that the correctional centre will have the least usage of the internet as an instructional medium in order to avoid compromising security.

Table 4.20

Instructional medium used at the correctional centre and frequency of usage

Instructional media		Frequency of instructional media usage					Total
		Always	Very often	Not sure	Sometimes	Seldom	
Computer	Count	16	15	3	35	3	72
	% within Instructional media usage	6.7%	11.4%	3.4%	19.4%	7.7%	10,6%
Projector	Count	14	11	1	12	4	42
	% within Instructional media usage	5.9%	8.3%	1.1%	6.7%	10.3%	6,2%
Charts	Count	27	19	5	20	3	74
	% within Instructional media usage	11.3%	14.4%	5.7%	11.1%	7.7%	10,9%
Internet	Count	6	5	0	7	0	18
	% within Instructional media usage	2.5%	3.8%	0.0%	3.9%	0.0%	2,6%
Teacher	Count	97	40	27	54	15	233
	% within Instructional media usage	40.8%	30.3%	31.0%	30.0%	38.5%	34,4%
Chalkboard	Count	57	32	14	42	9	154
	% within Instructional media usage	23.9%	24.2%	16.1%	23.3%	23.1%	22,7%
Other	Count	19	7	5	9	1	41
	% within Instructional media usage	8.0%	5.3%	5.7%	5.0%	2.6%	6,0%
No response	Count	2	3	32	1	4	42
	% within Instructional media usage	0.8%	2.3%	36.8%	0.6%	10.3%	6,2%
Total	Count	238	132	87	180	39	676
		100%	100%	100%	100%	100%	100%

4.5 RELIABILITY COEFFICIENT ANALYSIS OF THE LEARNING STYLE QUESTIONNAIRE

Cronbach's alpha coefficients were used to determine the internal consistency of Kolb's questionnaire, which was adapted for this study. Cronbach's alpha coefficient is the most widely used test for reliability and normally the scores vary between 0

and 1. A Cronbach's alpha coefficient of .70 is considered a desirable reliability coefficient, although it may decrease to .60 in exploratory research (Heale & Twycross, 2015). The reliability coefficient was analysed for the complete questionnaire and for its sub-scales, which represent the different learning styles. The reliability coefficient analysis of the sub-scales focused on each item that makes up the sub-scale.

4.5.1 Reliability coefficient analysis of the Learning Styles Questionnaire

The questionnaire used in this study consisted of 80 items, which made up the four learning styles and these were in turn, demarcated into four sub-scales. Table 4.21 depicts Cronbach's reliability coefficient for the total measure of .86, while that of its sub-scales ranges from .73 to .83. All sub-scales of the learning styles questionnaire achieved a desirable reliability coefficient which was considered adequate to proceed with further statistical analysis. In this research the questionnaire and its sub-scales were found to be reliable.

Table 4.21

Cronbach' alpha coefficient of the learning styles questionnaire

Sub-scale	α	Number of items
Accommodating/Activist learning style	.80	20
Diverging/Reflector learning style	.83	20
Assimilating/Theorist learning style	.77	20
Converging/Pragmatist learning style	.73	20
Total scale	.81	80

4.5.2 Reliability coefficient analysis of accommodating/activist learning style sub-scale

Table 4.22 presents the Cronbach's alpha coefficients for the accommodation/activist learning style. In terms of item analysis, if an item is deleted, the Cronbach's coefficient alpha values will range between .784 and .799. These values indicate that the sub-scale achieved a desirable reliability coefficient, which was considered adequate to proceed with further statistical analysis.

Table 4.22

Cronbach's alpha coefficients for items of the accommodating/activist learning style sub-scale

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
When dealing with issues or engaging on matters, I often respond without considering the possible consequences.	11,90	16,002	0,376	.791
I believe that formal procedures and policies restrict people to do what they prefer.	11,62	16,420	0,317	.794
I often find that actions based on feelings are as sound as those based on careful thought and analysis.	11,72	15,919	0,418	.788
I actively seek out new experiences.	11,50	16,869	0,270	.796
I am attracted more to novel, unusual ideas than to practical ones.	11,86	16,486	0,250	.799
I thrive on the challenge of tackling something new and different.	11,56	16,821	0,234	.798
I enjoy fun-living spontaneous people.	11,50	16,465	0,415	.790
I tend to be open about how I am feeling.	11,56	16,780	0,245	.798
I am careful attention to detail before coming to a conclusion.	11,71	15,656	0,492	.784
Quiet, thoughtful people tend to make me feel uneasy.	11,90	16,207	0,323	.794
It is more important to enjoy the present moment than to think about the past or future.	11,58	16,249	0,395	.790
In discussions, I usually produce lots of spontaneous ideas.	11,66	15,885	0,451	.786
More often than not, I believe rules are there to be broken.	11,90	15,938	0,393	.790
On balance, I talk more that I listen.	11,96	16,053	0,371	.791
I enjoy being the one that talks a lot.	11,91	15,760	0,441	.787
When things go wrong, I am happy to shrug it off and put it down to experience,	11,74	16,240	0,326	.794
I find the formality of having specific objectives and plans stifling.	11,77	15,651	0,477	.784
I am usually one of the people who put life into a celebration.	11,63	15,918	0,457	.786
I quickly get bored with methodical, detailed activities.	11,89	16,062	0,359	.792
I enjoy the drama and excitement of a crisis situation.	11,95	16,411	0,275	.797
Total sub-scale				.800

4.5.3 Reliability coefficient analysis of diverging/reflector learning style subscale

Table 4.23 presents the Cronbach coefficient results for the divergence/reflector learning style. It is clear in the table that the items of divergence/reflector have reliability coefficient values ranging between .820 and .848, if items are deleted. These values were considered adequate to allow the researcher to perform further statistical analysis.

Table 4.23

Cronbach's Alpha coefficients for items of the diverging/reflector learning style sub-scale

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I like the sort of activities where I have time for thorough preparation and implementation.	15,00	13,890	0,436	.825
I take pride in doing a thorough task.	15,01	14,010	0,368	.827
I get on best with logical, analytical people and less well with spontaneous, irrational people.	15,06	13,697	0,423	.825
I take over how to interpret data and avoid jumping to conclusions.	14,99	13,676	0,542	.820
I pay careful attention to detail before coming to a conclusion.	14,96	13,896	0,508	.823
I am careful not to jump to conclusions too quickly.	15,04	13,490	0,525	.820
I prefer to have as many sources of information as possible- the more information to think over the better.	14,97	13,837	0,511	.822
I listen to other people's point of view before putting my own view forward.	14,97	14,111	0,381	.827
I like discussions, and I enjoy watching the plotting and scheming of the other participants.	15,22	14,913	-0,002	.848
It worries me if I have to rush activities to meet tight due dates.	15,15	13,402	0,459	.823
I often get irritated by people who want to rush things.	15,14	13,830	0,326	.830
I think that decisions based on a careful analysis of all the information are better than those based on intuition.	15,04	13,444	0,535	.820
I prefer to stand back from a situation and consider all the perspectives.	15,05	13,623	0,459	.823
I tend to discuss specific things with people rather than engaging in social discussion.	15,10	13,855	0,342	.829
If I have an activity to complete, I tend to produce lots of drafts before setting on the final version.	15,15	13,291	0,491	.821
I like to ponder many alternatives before making up my mind.	15,03	13,508	0,528	.820
In discussion, I am more likely to adopt a low profile than to take the lead and do most of the talking.	15,24	13,641	0,349	.829
I believe it is best to think carefully before taking action.	14,96	13,866	0,509	.822
On balance, I do the listening rather than the talking.	15,08	13,632	0,430	.824
I am always interested to find out what people think.	15,09	14,000	0,303	.831
Total sub-scale				.833

4.5.4 Reliability coefficient analysis of assimilating/theorist learning style sub-scale

Table 4.24 depicts Cronbach's alpha coefficients for the assimilating/theorist learning style sub-scale. In terms of item analysis if the item is deleted, Cronbach's alpha coefficient values range between .754 and .772. These values were considered adequate to perform further statistical analysis.

Table 4.24

Cronbach's alpha coefficients for items of the assimilating/theorist learning style sub-scale

Items	Scale Mean if Item Deleted	Scale Variance Item Deleted	Corrected Item-Total Correction	Cronbach's Alpha if Item Deleted
I have strong beliefs about what is right and wrong, good and bad in my own space.	13,40	13,133	0,434	.759
I tend to solve problems using a step-by-step approach.	13,51	12,854	0,366	.759
I regularly question people about their basic assumptions.	13,71	13,112	0,192	.772
I am keen on self-discipline such as watching my diet, taking regular exercise, sticking to a fixed routine, etc.	13,62	12,899	0,281	.765
I get on best with logical, analytical people and less well with spontaneous, irrational people.	13,61	12,608	0,382	.757
I do not like disorganised things and prefer to fit things into a coherent pattern.	13,48	12,993	0,345	.761
I like to relate my actions to general principle, standard or belief.	13,43	13,079	0,387	.759
I tend to have distant rather than formal relationships with people I interact with.	13,76	12,868	0,258	.767
I find it difficult to produce ideas on impulse.	13,80	12,652	0,318	.762
Flippant, superficial people who do not take things seriously enough usually irritate me.	13,59	12,841	0,314	.762
I tend to be a perfectionist.	13,65	12,692	0,335	.761
I often see inconsistencies and weaknesses in other people's arguments.	13,59	12,910	0,291	.764
I believe that rational, logical thinking should win the day.	13,52	12,889	0,344	.760
I am keen to try things out to see if they work in practice.	13,52	12,759	0,394	.757
In discussions with people, I often find I am the most dispassionate and objective.	13,92	12,898	0,252	.767
I like to be able to relate current actions to the longer term bigger picture.	13,51	12,689	0,431	.755
I tend to be tough on people who find it difficult to adopt a logical approach.	13,74	12,756	0,293	.764
I am keen on exploring the basic assumptions, principles and theories underpinning things and events.	13,58	12,519	0,431	.754
I like conversations to be run on methodical lines, sticking to laid down agendas.	13,61	12,463	0,428	.754
I steer clear of subjective (biased) or ambiguous (unclear) topics.	13,64	12,700	0,337	.761
Total sub-scale				.770

4.5.5 Reliability coefficient analysis of converging/pragmatist learning style sub-scale

Table 4.25 depicts Cronbach's alpha coefficients for the convergence/pragmatist learning style sub-scale. The coefficient values of the items of this sub-scale ranged between .709 and .749. These values were considered adequate and meeting the threshold to perform further statistical analysis.

Table 4.25

Cronbach's alpha coefficients for items of the converging/pragmatist learning style sub-scale

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I have a reputation for saying what I think, simply and directly.	14,03	10,351	0,251	.726
What matters most to me is whether something works in practice.	14,01	10,344	0,265	.725
When I hear about a new idea or approach, I immediately start working out how to apply it in practice.	14,08	10,123	0,300	.722
I accept and stick to laid down procedures and policies so long as I regard them as efficient ways of getting the task done.	14,00	10,384	0,257	.726
In discussions I like to get straight to the point.	13,96	10,415	0,303	.723
I believe in coming to the point immediately.	14,06	10,014	0,365	.717
I tend to be attracted to techniques such as flow charts, contingency, etc.	14,21	10,026	0,281	.725
I tend to judge people's ideas on their practical merits.	14,37	10,468	0,120	.741
In conversations, I put forward practical, realistic ideas.	14,00	9,985	0,445	.712
I often see better, more practical ways to get things done.	14,01	9,875	0,481	.709
I think written reports should be short and to the point.	14,00	10,249	0,323	.721
I like people who approach things realistically rather than engaging in social discussion.	13,99	10,209	0,362	.719
In discussions, I get impatient with irrelevant issues and digressions.	14,16	9,785	0,385	.715
I am keen to try things out to see if they work in practice.	14,00	10,032	0,420	.714
In discussions, I often find I am realist, keeping people to the point and avoiding wild speculations.	14,09	9,822	0,414	.712
I tend to reject wild, spontaneous ideas as being impractical.	14,26	9,849	0,329	.720
Most times I believe the end justifies the means.	14,08	10,034	0,339	.719
I do no mind hurting people's feelings so long as the task at hand gets done.	14,50	10,824	0,017	.749
I do whatever is practical to get the task completed.	14,01	10,037	0,404	.715
People often find me insensitive to their feelings.	14,39	10,492	0,113	.741
Total sub-scale				.733

4.6 LEARNING STYLE PREFERENCES OF RESPONDENTS

This section presents the results of respondents' learning style preferences, based on answers they provided to the 80 items that were part of the questionnaire. The questionnaire items were grouped into four types of learning styles. Table 4.26 shows the results of the learning style preferences of 402 respondents who participated in this study. It is clear from this table that the majority of respondents (83,1%) preferred the divergence/reflector learning style.

These results show that offenders at the Johannesburg Female Correctional Centre preferred to learn through feeling and watching. Thus, they have experiences and reflect deeply about them; and diverge from single experiences to multiple possibilities. Respondents' personalities are related with the Concrete-Experiencing (CE) dimension and the Reflective-Observational (RO) facet. Divergers absorb best through precise samples and incline to lean upon fresh evidence. Learners who prefer this learning style learn best when they are asked to produce reports that carefully analyse the situation or issues; where there is interaction with others without risks of strong feelings coming to the fore; and where they can finalize a view without being put under pressure. Only 2% of respondents ($n = 10$) preferred the convergence learning style. These results show that the number of offenders who prefer to learn by doing and thinking is low. Converger learners prefer to find solutions for realistic issues and technical tasks. They are less concerned with people and social or interpersonal issues but like to experiment with new ideas. Although insignificant, the second most preferred learning style was assimilating/theorist, with 44 respondents (10,9%).

Table 4.26

Learning style preferences of respondents

Learning styles	Frequency	Percent
Accommodation/Activist	14	3.5
Divergence/Reflector	334	83.1
Assimilation/Theorist	44	10.9
Convergence/Pragmatist	10	2.5
Total	402	100.0

4.6.1 Learning style preference and personality combinations across quadrants

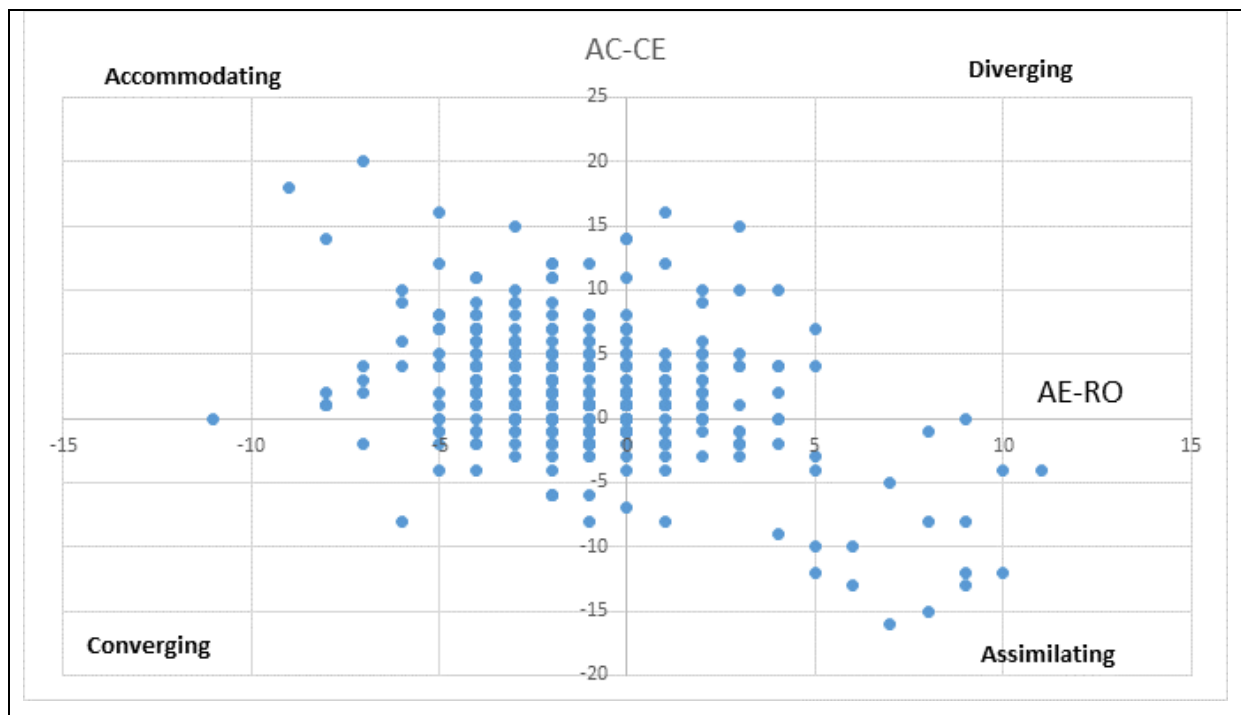
Figure 4.1 shows the quadrants of spread across Accommodating – Diverging; Diverging – Assimilating; Assimilating – Converging; and Converging – Accommodating learning styles and personality combinations. Accommodating (feel and do) is a combination of concrete experiences and active experiment (CE/AE). Diverging (feel and watch) is a combination of active experiment and reflective observation (AE/RO). Assimilating (think and watch) is a combination of abstract conceptualisation and reflective observation (AC/RO). Converging (think and do) is a combination of abstract conceptualisation and active experimentation (AC/AE).

Figure 4.1 shows that that the most preferred learning style was the divergence learning style followed by the assimilation style. The results show that the respondents have strong combinations of AE-RO personalities and learning styles. Therefore, it is clear that respondents prefer to learn by feeling and doing, and by feeling and watching. Therefore, offenders at the Johannesburg Female Correctional Centre have a strong preference for teamwork and hands-on activities. They prefer to receive constructive feedback. When they learn they ask 'why' and start from detail to logically work up to the big picture. They have a strong preference for doing and feeling rather than thinking and they prefer clear explanations rather than opportunities for practical exposure.

Thus, they like readings, lectures and exploring analytical models. These type of learners learn best from activities where there are opportunities to do and consider; where there is a strong element of passive involvement such as listening to a speaker or watching a video; where there is time to think before having to act or contribute; and where there is opportunity for research and problems can be probed in some depth.

Figure 4.1

Learning style preferences of respondents



Kolb learning style quadrants ($n = 402$)

4.6.2 Chi-square test results

The Chi-Square results for learning styles and their influence on respondents' learning experiences are presented in this section. The basic assumption is that a relationship exists between learning styles and respondents' learning experiences. The null hypothesis is that no relationship exists between these variables, and that they are independent from each other. Furthermore, the Chi-Square results, which test the relationship between demographic variables and the respondents' learning experience', are also presented.

4.6.2.1 Learning styles and their influence on respondents learning

Table 4.27 shows that 318 respondents (87,6%) indicated that learning styles have an influence on their learning. The divergence learning style was preferred by 84,9% of the respondents ($n = 270$), who indicated that this learning style influences their learning. The least preferred learning style was convergence, with 10 respondents

(2,7%), and with only 0,9% respondents ($n = 3$) who indicated that this learning style influences their learning. Only 45 respondents (12,4%) indicated that learning styles do not influence their learning. The results also show that respondents preferred to learn through watching rather than doing. They are best at viewing concrete situations from numerous different viewpoints, and they prefer to work in groups, to receive personal feedback, to collect information and make use of imagination to solve problems.

Table 4.27

Cross-tabulation between learning styles and their influence on learning

			Influence on learning		Total
			Yes	No	
Learning styles	Accommodation	Count	12	0	12
		% within Learning styles	100.0%	0.0%	100.0%
		% within Influence on Learning	3.8%	0.0%	3.3%
	Divergence	Count	270	30	300
		% within Learning styles	90.0%	10.0%	100.0%
		% within Influence on Learning	84.9%	66.7%	82.6%
	Convergence	Count	3	7	10
		% within Learning styles	30.0%	70.0%	100.0%
		% within Influence on Learning	0.9%	15.6%	2.8%
	Assimilation	Count	33	8	41
		% within Learning styles	80.5%	19.5%	100.0%
		% within Influence on Learning	10.4%	17.8%	11.3%
Total	Count	318	45	363	
	% within Learning styles	87.6%	12.4%	100.0%	
	% within Influence on Learning	100.0%	100.0%	100.0%	

Table 4.28 shows the chi-square tests results of the relationship between learning styles and the influence on respondents' learning. It is clear from this table that the Chi-square is $\chi^2(3, N=363) = 35.750, p < 0.001$. This Chi-Square statistic is less than the alpha level of significance of 0.05. These results show that there is a statistically significant relationship between learning style preference and influence on learning. About 84,9% ($n = 270$) of respondents who prefer the divergence learning style indicated that this learning style influences their learning. This means that the respondents' learning is not independent from the learning styles. Therefore, there is

a statistically significant relationship between the two variables. Furthermore, this implies that how respondents learn is influenced largely by the learning style they prefer. In other words, the respondents' ability to learn successfully in various educational and rehabilitation programmes offered in the Johannesburg Female Correctional Centre is related to the learning style they prefer.

Table 4.28

Chi-Square test results for learning styles and their influence on learning

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	35.750 ^a	3	0.000	0.000		
Likelihood Ratio	24.333	3	0.000	0.000		
Fisher's Exact Test	23.157			0.000		
Linear-by-Linear Association	9.335 ^b	1	0.002	0.003	0.003	0.001
No. of valid cases	363					

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.24.

b. The standardized statistic is 3.055.

4.6.2.2 Age and its influence on respondents' learning

Table 4.29 depicts the cross-tabulation results of age and its influence on learning. The results show that 318 respondents (87,6%) across all age ranges indicated that age influences their learning. However, the results do not show a significant difference within the age ranges. The age range that had more respondents ($n = 125$) was between 31 and 40 years. This accounts for 39,3% of the respondents who indicated that age influenced their learning. This was followed by the age range 18 – 30 years, which had 90 respondents who indicated that age influenced their learning, thus accounting for 28,3% of the total. These results indicate that there is a statistically significant relationship between age and respondents' learning. Although there is no significant noticeable difference within the different age ranges for those respondents who indicated that age influenced their learning, there is a significant difference between those who indicated that age influence their learning when compared to those who indicated that age does not influence their learning. These results indicate that respondents in different age ranges learn differently.

Table 4.29

Cross-tabulation between age and its influence on learning

		Influence on learning			
		Yes	No	Total	
Age	18-30yrs	Count	90	15	105
		% within Age	85.7%	14.3%	100.0%
		% within Influence on learning	28.3%	33.3%	28.9%
	31-40yrs	Count	125	5	130
		% within Age	96.2%	3.8%	100.0%
		% within Influence on learning	39.3%	11.1%	35.8%
	41-50yrs	Count	70	14	84
		% within Age	83.3%	16.7%	100.0%
		% within Influence on learning	22.0%	31.1%	23.1%
	51 and above	Count	33	11	44
		% within Age	75.0%	25.0%	100.0%
		% within Influence on learning	10.4%	24.4%	12.1%
Total		Count	318	45	363
		% within Age	87.6%	12.4%	100.0%
		% within Influence on learning	100.0%	100.0%	100.0%

Table 4.30 presents the Chi-square test results for age and its influence on learning. It is clear on the table that the Chi-square is $\chi^2(3, N = 363) = 16.943$, $p < 0.001$, see Table 4.30 below. These results reveal that age is not independent of learning, and therefore that there is a statistically significant relationship between age and learning. Therefore, age has a significant influence on how respondents learn. This means that respondents' ability to learn successfully in the various educational and rehabilitation programmes within the correctional centre is influenced by their age.

Table 4.30

Chi-Square test results for age and its influence on learning

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	16.943 ^a	3	0.001	0.001		
Likelihood Ratio	18.382	3	0.000	0.000		
Fisher's Exact Test	18.286			0.000		
Linear-by-Linear Association	4.196 ^b	1	0.041	0.044	0.026	0.008
N of Valid Cases	363					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.45.

b. The standardized statistic is 2.048.

4.6.2.3 Education and its influence on respondents' learning

Table 4.31 depicts the cross-tabulation results of educational achievement and its influence on learning. It is clear in this table that 318 respondents (87,6) across all educational achievements have indicated that educational achievements influence their learning. Of those who indicated that educational achievements influenced their learning, 215 (67.6%) had educational achievements between Grade 8 and 12. About 25,8% ($n = 82$) of the respondents who indicated that educational achievement influenced their learning had a 3-year qualification and higher. About 95,3% ($n = 82$) of respondents with a 3-year qualification and higher indicated that educational achievement influenced their learning, whilst a paltry 4,7% indicated that educational achievement did not influence their learning. These results reveal that there is relationship between educational achievement and respondents' learning. This means that respondents' learning is influenced by the level of educational achievement.

Table 4.31

Cross-tabulation between education and its influence on respondents' learning

			Influence on learning		
			Yes	No	Total
Education	Grade R- Grade 7	Count	21	10	31
		% within Education	67.7%	32.3%	100.0%
		% within Influence on learning	6.6%	22.2%	8.5%
	Grade 8- Grade 11	Count	113	13	126
		% within Education	89.7%	10.3%	100.0%
		% within Influence on learning	35.5%	28.9%	34.7%
	Grade 12	Count	102	18	120
		% within Education	85.0%	15.0%	100.0%
		% within Influence on learning	32.1%	40.0%	33.1%
	A 3-year qualification (Degree/Diploma) and higher	Count	82	4	86
		% within Education	95.3%	4.7%	100.0%
		% within Influence on learning	25.8%	8.9%	23.7%
Total	Count	318	45	363	
	% within Education	87.6%	12.4%	100.0%	
	% within Influence on learning	100.0%	100.0%	100.0%	

Table 4.32 shows the chi-square tests results for education and its influence on respondents' learning. The Chi-square is $\chi^2 (3, N = 363) = 17.750, p < 0.001$. These results indicate that educational achievement is not independent of respondents' learning. Therefore, there is a statistically significant relationship between educational achievement and respondents' learning. This means that respondents' level of educational achievement influences how they learn in the various educational and rehabilitation programmes offered within the Johannesburg Female Correctional Centre.

Table 4.32.

Chi-Square test results for education and its influence on respondents' learning

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	Point Probability
Pearson Chi-Square	17.262 ^a	3	0.001	0.001		
Likelihood Ratio	15.616	3	0.001	0.002		
Fisher's Exact Test	15.500			0.001		
Linear-by-Linear Association	7.992 ^b	1	0.005	0.005	0.003	0.001
N of Valid Cases	363					

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 3.84.

b. The standardized statistic is -2.827.

4.6.3 Kruskal-Wallis test results between learning styles and the respondents' learning experience

A Kruskal-Wallis test was performed to establish if there was a statistical significant difference between learning styles and respondents' learning experiences. The results in Table 4.33 show that there is no statistically significant difference between learning styles and respondents' learning experiences. The rest result show that $\chi^2 (3, N = 394) = 2.834, p > 0.05$. These results reveal that there is no statistically significant difference between the learning styles and respondents' learning experience.

Table 4.33

Learning styles and influence on respondents' learning experience

Total N	394
Test Statistic	2.834 ^{a,b}
Degree of Freedom	3
Asymptotic Sig. (2-sided test)	0.418

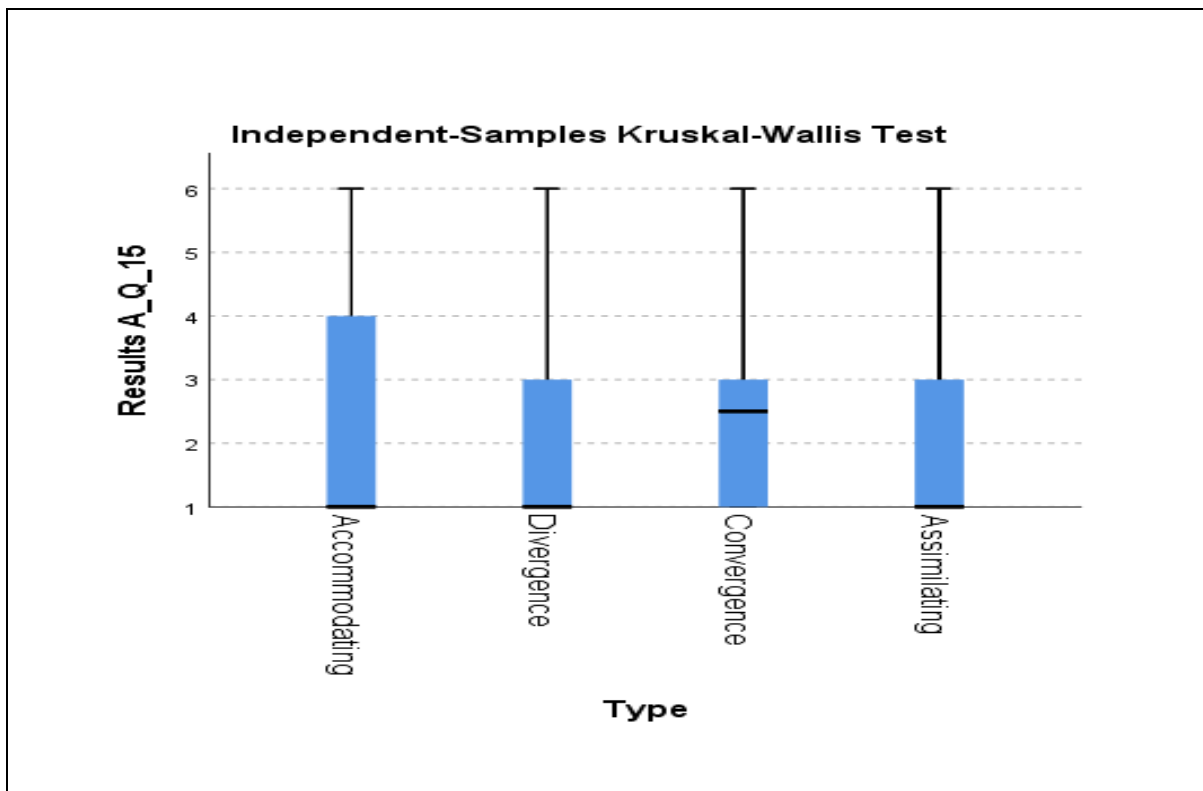
a. The test statistic is adjusted for ties.

b. Multiple comparisons are not performed because the overall test does not show significant differences across samples.

Figure 4.2 indicates that there was no statistically significant difference between learning styles and respondents' learning experience. The results in Figure 4.2 show an even distribution of scores across three learning styles (divergence, convergence and assimilation), with a slight but insignificant difference for accommodation.

Figure 4.2

Kruskal-Wallis Test results of learning styles and their influence on respondents' learning experiences



Results A_Q_15 = Respondents' learning experiences

Type = Learning styles

4.6.4 Learning styles and strength of respondents' learning styles preferences

This section presents the results of the learning styles and the strength of respondents' learning styles preferences. The four learning styles are activist, reflector, theorist and pragmatist. Kolb interpreted them as accommodating, diverging, assimilating and converging. Accommodating (feel and do) is a combination of concrete experience and active experiment (CE/AE). Diverging (feel and watch) is a combination of active experiment and reflective observation (AE/RO). Assimilating (think and watch) is a combination of abstract conceptualisation and reflective observation (AC/RO). Converging (think and do) is a combination of abstract conceptualisation and active experimentation (AC/AE). The results of respondents' preference strengths are presented hereunder.

Table 4.33 shows the strength of preference of the respondents on four learning styles from very low preference to very strong preference. The activist learning style had 9,7% of the respondents (n = 39), who indicated a low to very low preference while 69,4% of the respondents (n = 279) indicated a strong to very strong preference. The reflector learning style had 12,1% of the respondents (n = 49) who indicated a low to very low preference and 73,3%% of the respondents (n = 295) who indicated a strong to very strong preference. The theorist learning style had 13,5% of respondents (n = 55) who indicated a low to very low preference and 65,2% of the respondents (n = 262) who indicated a strong to very strong preference. The pragmatist learning style had 14,1% of respondents (n = 57) who indicated a low to very low preference and 61,6% of the respondents (n = 248) who indicated a strong to very strong preference. The learning style which has the highest strength of preference is the divergence/reflector learning style. Learners who prefer this learning style have experiences and think about them deeply. These learners like working with others but like things to remain calm as they get distressed by conflicts in the group. They want lots of breaks to go off and read and discuss about issues.

Table 4.34

Strength of respondent on four learning styles

Learning styles	Very low preference		Low preference		Moderate preference		Strong preference		Very strong preference		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Accommodation/Activist	14	3,5%	25	6,2%	84	20,9%	70	17,4%	209	52,0%	402	100,0%
Divergence/Reflector	25	6,2%	24	6,0%	58	14,4%	116	28,9%	179	44,5%	402	100,0%
Assimilation/Theorist	22	5,5%	33	8,2%	85	21,1%	102	25,4%	160	39,8%	402	100,0%
Convergence/Pragmatist	20	5,0%	37	9,2%	97	24,1%	111	27,6%	137	34,1%	402	100,0%

4.6.5 Correlation coefficient between learning styles and demographic variables

Table 4.38 presents the results of the correlation coefficient between learning styles and demographic variables. An absolute value of 1 indicates that there is perfect linear relationship between variables. A correlation value close to zero (0) indicates that there is no relationship between variables. The total number of observations for the correlation coefficients presented in Table 4.38 was 379.

The results depicted in Table 4.38 show that there is a positive and statistically significant correlation between the learning styles as follows: accommodating/activist and diverging/reflector ($r = .226$; $p < 0.01$); accommodating/activist and assimilating/theorist ($r = .266$; $p < 0.01$); accommodating/activist and converging/pragmatist ($r = .454$; $p < 0.01$); diverging/reflector/assimilating/theorist ($r = .644$; $p < 0.01$); diverging/reflector and converging/pragmatist ($r = .581$; $p < 0.01$); assimilating/theorist and converging/pragmatist ($r = .602$; $p < 0.01$). The results also show a statistically significant relationship between age and educational achievement ($r = .252$; $p < 0.01$).

Furthermore, the results depicted in Table 4.38 show that there is no statistically significant relationship between learning styles and demographic variables. These results mean that the older the respondents get and the more educated they become; such changes do not have a statistically significant relationship with learning style preferences. All the correlation coefficients between the learning styles

and demographic variables (age and educational achievement) are of a low degree and very close to zero, with all correlations between age and learning styles on the negative. For educational achievement, all correlation coefficients with learning styles are positive but close to zero (0), with the exception of education and the accommodation/activist learning style, which is negative but statistically insignificant ($r = -0.117$).

Table 4.35

Correlation coefficient between learning styles and demographic variables (N = 379)

	CE	RO	AC	AE	Age	Education
Accommodating/Activist (CE)						
Diverging/Reflector (RO)	.226**					
Assimilating/Theorist (AC)	.266**	.644**				
Converging/Pragmatist (AE)	.454**	.581**	.602**			
Age of respondents	-0,064	-0,080	-0,033	-0,049		
Level of education	-.117*	0,008	0,024	0,032	.252**	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The next section presents the key findings of this study.

4.7 KEY FINDINGS OF THE RESEARCH

The primary objective of this study was to examine the learning style preferences of offenders at the Johannesburg Correctional Centre and to establish how these preferences influence offenders' learning experiences. The key findings of this study in relation to the secondary objectives set out in Chapter 1 are presented below.

Research objective 1: To investigate the instructional methods used at the Johannesburg Female Correctional Centre and to establish if these influence offenders' learning experiences.

Respondents were asked to indicate the instructional methods used at the Johannesburg Female Correctional Centre during school and rehabilitation programmes. Furthermore, respondents were asked to indicate the relevance of the instructional methods to their learning experiences. This study found that during class at the correctional services school of the Johannesburg Female Correctional

Centre, classroom discussion was the instructional method used most. The method was also found to be relevant to the respondents' learning experiences. Lecturing was the second most popular instructional method as reported by the respondents. It was also found to be relevant to the respondents' learning experience. Furthermore, this study found that debriefing was the least used instructional method in the correctional service school and its relevance to respondents' learning experiences was insignificant because of the low responses.

This study also found that classroom discussion was the dominant instructional method used in the rehabilitation programmes. This method was also found to be relevant to the respondents' learning experiences. Lecturing was the second preferred instructional method in the rehabilitation programmes and it was also found to be relevant to the respondents' learning experiences. Debriefing was found to be the least used instructional method by the respondents in the rehabilitation programmes and its relevance to respondents' learning experiences was insignificant because of the low responses.

Research objective 2: To determine how offenders at the Johannesburg Female Correctional Centre prefer to learn and how these preferences influence their learning experiences.

This study found that the divergence learning style was the style preferred by most offenders at the Johannesburg Female Correctional Centre. Furthermore, the study found that the divergence learning style affects the learning experiences of respondents to a great extent. The second most preferred learning style was found to be the assimilation learning style, and that this learning style also affected offenders' learning experiences to a great extent. Another important finding of this study was that convergence was the least preferred learning style and that the extent to which the learning style affects respondents' learning experiences was insignificant due to the low response rate.

Research objective 3: To investigate the instructional medium used at the Johannesburg Female Correctional Centre and to establish the preference of offenders in this regard.

This study found that the teacher was the instructional medium most frequently used by offenders during the learning process by the offenders. The chalkboard was found to be the second most used instructional medium during the learning process at the Johannesburg Female Correctional Centre. The internet was found to be the least used instructional medium at the Johannesburg Female Correctional Centre, and its frequency of usage by respondents during the learning process was found to be insignificant due to low responses.

The researcher will give an oral presentation of the findings of this study to the offenders at the Johannesburg Correctional Centre.

4.8 SUMMARY OF THE CHAPTER

This chapter presented the results of the demographic profiles of the participants, frequency analysis and cross-tabulation of the contextual variables, reliability coefficient analysis of the learning style scale and Chi-square, Kruskal-Wallis and Pearson Correlation coefficient results of the study. The key findings of the research were also presented. The next chapter (Chapter 5) presents the conclusions, limitations and recommendations of the study.

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the conclusions of the study based on the research questions formulated in Chapter 1. The research sub-questions are restated in order to establish whether or not the findings of this study provide answers to the sub-questions. The conclusions of the study are drawn from the research sub-questions. The central research question is also restated to determine whether the conclusions of the study answer this question. The limitations, practical recommendations and recommendations for further studies are presented. The chapter concludes with a summary of the dissertation.

5.2 CONCLUSIONS OF THE STUDY BASED ON THE RESEARCH QUESTIONS

This section presents the conclusions of the study based on the findings reported in Chapter 4. The conclusions are aligned to the stated research questions of the study.

5.2.1 Research sub-questions

The following research sub-questions were stated in Chapter 1 of this study:

5.2.1.1 Sub-question 1: What instructional methods are used at the Johannesburg Female Correctional Centre and how do these influence offenders' learning experiences?

In line with this research sub-question, the study found that during classes at the correctional services school and during rehabilitation programmes at the Johannesburg Female Correctional Centre, classroom discussion was the most common instructional method, and this was found to be relevant to the respondents' learning experiences. Lecturing was the second most used instructional method as reported by the respondents for both the correctional service school and the

rehabilitation programmes. It was also found to be relevant to the respondents' learning experiences. These findings answer this research sub-question.

The conclusion drawn from these findings is that the learning experiences of offenders at the Johannesburg Female Correctional Centre are influenced by the type of instructional methods used and in this case, classroom discussion and lecturing. A correctional facility is considered a high security environment that has many strict regulations. Therefore, it is expected that correctional facility management would prefer instructional methods that do not compromise the security of the facility, something which may be part of the national policy directive to enhance security.

5.2.1.2 Sub-question 2: How do offenders at the Johannesburg Female Correctional Centre prefer to learn and how do these preferences influence their learning experience?

The findings of this study show that the divergence/reflector learning style was the most preferred style by the majority of the offenders at the Johannesburg Female Correctional Centre and that the learning style affected the learning experiences of the respondents to a great extent. The second most preferred learning style was found to be assimilating/theorist, and that this learning style also affected offenders' learning experiences to a great extent. These findings answer this research sub-question. Learners who are classified under the divergence learning style prefer working in groups, to receive personal feedback, collect information and make use of imagination to solve problems (Bhat, 2014; Kozlova, 2018). According to Kolb (2013), these types of learners take experiences and think deeply about them and will diverge from single experiences to multiple possibilities. Moreover, such learners are personalities related with the Concrete-Experiencing (CE) dimension and the Reflective-Observational (RO) facet. Divergers absorb best through precise samples and incline to lean upon fresh evidence. However, these personalities gather evidence from concrete experience and convert it through reflective observation (Akinyode & Khan, 2016).

A conclusion drawn from these findings is that the overwhelming majority of offenders at the Johannesburg Female Correctional Centre are divergers/reflector learners who prefer to work in groups, to receive personal feedback, to collect information and to make use of imagination to solve problems. These offenders view concrete situations from numerous different viewpoints and prefer to learn through watching rather than doing. Moreover, these offenders indicated that their preferred learning style (divergence/reflector learning style) influences their learning.

5.2.1.3 Sub-question 3: What instructional medium are used at the Johannesburg Female Correctional Centre and what do offenders prefer?

This study has found that the teacher was the most used instructional medium and the most frequently preferred as indicated by offenders during the learning process. The chalkboard was found to be the second most common instructional medium and second most frequently preferred as indicated by offenders during the learning process at the Johannesburg Female Correctional Centre. These findings answer this research sub-question.

The Correctional Services Amendment Act No. 32 of 2012 states that the purpose of correctional system is to maintain and protect a just, peaceful and safe society by enforcing sentences of the courts, detain all inmates in safe custody whilst ensuring the human dignity; and promote the social responsibility and human development of all sentenced offenders (RSA, 2012). Therefore, learning in the correctional environment may be considered the human development of sentenced offenders. Patrie (2017) observed that education in the correctional centres straddles the justice and education system; systems that are often in conflict over philosophy, policy and practice.

A conclusion drawn from these findings is that teacher and chalkboard are the dominant mediums of instruction at the Johannesburg Female Correctional Centre, and that these have been used in the educational or schooling environment for many years. The Johannesburg Female Correctional Centre prefers the use of teacher and chalkboard instructional mediums, possibly to maintain security in the facility.

5.2.1.4 Sub-question 4: What are the practical recommendations that could be made to ensure that the Johannesburg Female Correctional Centre considers the diverse learning styles of offenders in order to optimise their learning experiences?

The practical recommendations of this study are presented below in section 5.4. This therefore answers this particular research sub-question.

5.2.2 Central research question

The research problem of this study was operationalized into a central research question, from which sub-questions were subsequently formulated. It is important for the researcher to establish whether or not the findings of this study have provided an answer to this question, thereby addressing or failing to address the research problem, which is the foundation of the investigation. The central research question formulated was the following:

What are the learning style preferences of offenders at the Johannesburg Female Correctional Centre and how do these preferences influence offenders' learning experiences?

The key findings of this study are that respondents at the Johannesburg Female Correctional Centre overwhelmingly prefer the divergers/reflector learning style and the learning style was found to affect the respondents' learning experiences to a great extent. These findings answer the central research question of this study.

A conclusion drawn from these findings is that offenders at the Johannesburg Female Correctional Centre are mostly divergers/reflectors who believe that their preferred learning style affects their learning experiences, both during classes at the correctional service school and in rehabilitation programmes.

5.3 LIMITATIONS OF THE STUDY

Generally, research projects are constrained by a number of limitations. Some of these have a bearing on the actual conduct of the study and the interpretation of its findings. These limitations have to be taken into cognizance to ensure that the research findings and recommendations of the study are properly contextualized. This also safeguards the scientific and practitioner communities from potential misinterpretation of the study, its parameters and findings. The following are the limitations of this study.

- The study only focused on sentenced offenders at the Johannesburg Female Correctional Centre.
- The population of the study was small, hence the decision to apply the enumeration sampling technique.
- The study was also constrained by a lack of resources. The researcher conducted the study while incarcerated (behind bars). So, the researcher only relied on online resources with very limited internet access. Communication with the supervisor and the university librarian was very slow as the researcher could only access the internet at specific times during the day. The researcher was not allowed any movement outside the prison owing to incarceration, and therefore could not benefit from workshops offered by the university. Most of the online workshop sessions by the university were offered during the hours when the researcher could not access the internet.

Despite these limitations, the findings of the study could form a basis for understanding the learning style preferences of female offenders and how these influence the offenders' learning experiences.

5.4 PRACTICAL RECOMMENDATIONS OF THE STUDY

Based on the findings of this study, the following are the practical recommendations that may be considered by the relevant stakeholders:

5.4.1 Department of Correctional Services

The Department of Correctional Services may consider conducting a learning style assessment of offenders upon admission in order to ensure that the objectives of programmes offered within correctional centres are fit for purpose. This may be placed as a minimum requirement for offender participation in any programme offered within the correctional facilities. This consideration may also be helpful to other stakeholders that provide services to the department, such as programme designers, facilitators/teachers and assessors.

5.4.2 Johannesburg Female Correctional Centre

It is recommended that the Johannesburg Female Correctional Centre considers providing customised training to build the capacity of teachers/facilitators so that they are able to deliberately accommodate the diverse learning styles of offenders during the school classes or rehabilitation programmes. Such a deliberate effort to accommodate the learning style preferences of offenders will stimulate motivation and heighten interest among offenders to participate meaningfully in these interventions. This will reduce drop-out rates and reinforce the achievement of the long-term purpose of offender rehabilitation.

Another recommendation for consideration for the Johannesburg Female Correctional Centre is the formulation and implementation of a strategy that seeks to deliberately provide variations in instructional methods and mediums to accommodate different learning styles during the school classes and rehabilitation programmes, as long as these do not impact on the security within the facility. Teachers/facilitators can use varied techniques to stimulate offenders' excitement and participation during the sessions.

5.4.3 Programme designers/curriculum developers

It is recommended that programme designers or curriculum developers that are responsible for interventions pertaining to the correctional centre school or rehabilitation programmes take cognizance of offenders' learning styles when they

design the curriculum and develop learning materials. It is recommended that they design programmes or curriculums with both the learning outcomes and the offenders' learning styles in mind. A learning style questionnaire can be used to identify offenders' learning style preferences or profile before programmes and curriculums are developed, or during the review of such programmes and curriculums. This could be very useful in ensuring that the learning materials and curriculum already cater for the diverse learning styles of offenders, who are in a confined environment with no options to cherry pick interventions that are synchronised with their preferred learning styles.

5.4.4 Facilitators and teachers

To enhance the learning experience of offenders, it is recommended that facilitators and teachers should at least have access to the offender's learning style profile. This would assist them to vary their facilitation skills and to implement varied instructional techniques and mediums in order to accommodate the diverse pool of offenders participating in the school or rehabilitation programme, as long as the techniques and mediums are authorised by the correctional facility in the interest of security.

5.4.5 Offenders within the Johannesburg Female Correctional Centre

It is recommended that offenders should make an effort, when opportunity is provided by the correctional centre and where practically possible without interfering with the security establishment, to know their learning style preferences as individuals in order to enrich their own learning experiences. When the opportunity is presented by the correctional centre for offenders to know their learning style preferences, offenders should be encouraged to participate in this important process because it will positively influence their learning journey, even beyond their stay in the correctional centre.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the findings, conclusions and limitations of this study, the following recommendations are made for future studies:

- Further research may be conducted on the role and competences of teachers/facilitators regarding offenders' learning experiences within a correctional service environment in South Africa.
- Another possible future study may focus on learning styles and the attitude of offenders towards learning.
- Similarly, future studies maybe be on the same phenomenon of learning style within the correctional environment but involving a bigger sample. For example, by extending the scope of the study to include other correctional centres.
- Another area of interest which future studies could focus on is the teaching styles of educators/facilitators because this has a bearing on the learning experiences of offenders.

5.6 CONCLUSION

This dissertation was structured in five chapters. The core of chapter 1 was to give the background and scientific orientation to the study, outline the research problem and research questions. Chapter 2 focused on learning and learning styles. The chapter was underpinned by various learning theories and also focused on different perspectives on learning within the correctional context. Chapter 3 discussed the research philosophy, research approach, research design and research methods that were applied in the study. The chapter also discussed the measures that were applied to ensure validity and reliability in the study. Chapter 4 presents the results of the study. The interpretation of the results with regard to the demographic profile of the participants, frequency analysis and cross tabulation of the contextual variables, reliability coefficient analysis of learning style scale was presented accordingly. The results of the learning style preferences of respondents were also interpreted. The chapter ends with a discussion on the problems encountered during the conduct on the study. Chapter 5 presents the conclusion, limitations, practical recommendations and recommendations for future research. The chapter concludes with a summary of the dissertation.

This chapter concludes the study.

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ANNEXURE A: QUESTIONNAIRE



RESEARCH QUESTIONNAIRE

Learning Styles Questionnaire

Department of Human Resource Management

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES

UNIVERSITY OF SOUTH AFRICA

Dear participant

I am currently conducting a research project to examine the Learning Styles Preferences of female offenders at the Johannesburg Female Correctional Centre.

The justification for this research is based on the growing emphasis by the Department of Correctional Services to provide learning/educational opportunities to offenders as part of skills development and/or offender rehabilitation intervention. It is believed that the various Correctional Centres across South Africa are providing offenders with some of these opportunities that are linked to correctional services capacity development/rehabilitation programme.

You have been identified as one of the key participants in this research project based on your presumed involvement in learning/educational activities inside the Johannesburg Female Correctional Centre. I believe that your experience or exposure in learning/educational activities inside the Johannesburg Female Correctional Centre would make a significant contribution to this research project. To date, there has not been any empirical study on record focusing on the key issues encapsulated in the purpose of this research within the South African Correctional Service context.

The design of this research project places considerable emphasis on quantitative data. Therefore, I would be more grateful if you could spare some of your precious time to complete this questionnaire. This questionnaire consists of items related to the different learning styles.

It would take about 30 minutes of your time to complete this questionnaire which is comprised of two sections. Please be assured that the information you provide would be treated confidentially and anonymously. You would not be required to disclose your identity in any way for anonymity purposes. Furthermore, the information you provide would be used for the purposes of this research only and will not be made available to third parties. You are presumed to be participating freely in this research with the option to discontinue your participation at your own will. Your voluntary

participation and time spent in completing this questionnaire are highly appreciated in advance.

Please complete this questionnaire and send it back to me or hand it back to the Field Agent assisting me who gave it to you as soon as operationally possible. If there is any additional clarification you require about this research project, please do not hesitate to contact me.

Thank you very much for your willingness, time and effort to contribute to this research.

Ms MU Sivhidzho (Researcher)

SECTION A

Answer the following questions by circling the answer which is relevant to you.

1. Please indicate your age:
 - a. 18-30yrs
 - b. 31-40yrs
 - c. 41-50yrs
 - d. 51 and above

2. Please indicate your highest level of education:
 - a. Grade R- Grade 7
 - b. Grade 8- Grade 11
 - c. Grade 12
 - d. A 3 year qualification (Degree/Diploma) and higher

3. Are you currently studying in the Correctional Centre?
 - a. Yes
 - b. No

4. If your answer is yes, what is it that you are studying?

5. Are you involved in any Correctional Centre rehabilitation programmes?
- a. Yes
 - b. No
6. If the answer is yes, what are the programs you are involved in? Name some of the programmes that you are busy with and those that you have completed.

7. Please indicate the instructional methods that are used at your Correctional Centre School. You can circle more than one answer.

- a. Lecturing
- b. Demonstration
- c. Classroom discussion
- d. Debriefing
- e. Classroom action research
- f. None of above

8. Please indicate the instructional methods are you used during your rehabilitation's programmes. You can circle more than one answer

- a. Lecturing
- b. Demonstrations
- c. Classroom discussion
- d. Debriefing
- e. Classroom action research
- f. None of the above

9. Please rate the relevance of instructional methods used at your Correctional Centre in terms of relevance to your learning experience:

- a. Very relevant
- b. Relevant
- c. Somewhat relevant
- d. irrelevant

10. Identify the instructional media that is used at your Correctional Centre. You can circle more than one answer if you have exposure to more than one media.

- a. Computer
- b. Projector
- c. Charts
- d. Internet
- e. Teacher
- f. Chalk board
- g. Other (please specify) -----

11. Please indicate the frequency at which you use these instructional media during learning in your Correctional Centre?

- a. Always
- b. Very often
- c. Not sure
- d. Sometimes
- e. Seldom

12. Please indicate your preference:

- a. I prefer practical tasks and very little theory.
- b. I prefer handouts, something to take away and study.
- c. I prefer lots of breaks to go off and read and discuss.
- d. I prefer short cut and tips.

13. What is your opinion about necessity to know your preferred learning styles in your stay in the Correctional Centre?

- a. Very necessary
- b. Necessary
- c. No opinion
- d. Unnecessary
- e. Very unnecessary

14. Do you think learning styles have an influence in your learning?

- a. Yes
- b. No

15. To what extent do you think learning style affect your learning experience?

- a. Great extent
- b. Lesser extent
- c. Not sure
- d. Not often
- e. Rarely

16. What teaching method is used during your rehabilitation programmes?

- a. Discussion method
- b. Questioning method
- c. Role playing method
- d. Demonstration method
- e. Other (please specify) -----

17. Do you get assessed at the end of your classes or rehabilitation programmes?

- a. Yes
- b. No

18. If the answer is yes, how are the assessment done at the end of your classes' or rehabilitation programmes?

- a. Write a test
- b. Write report
- c. Oral assessment
- d. Present a task or project
- e. Others (please specify) -----

SECTION B

This Section will probably take you about 10 minutes to complete. The accuracy of your results depends on how honest you are. There are no right or wrong answers. **If you agree more than you disagree with a statement, place a tick (✓) in the box to the left of the question. If you disagree more than you agree, place a cross in the box (X).** If you find yourself wondering which situation to think of when answering a question, just think about how you are when you are working with people. Go with your first gut reaction instead of over-thinking your response.

All 80 questions below relate to your personal learning experience and the learning environment. Therefore, before responding, relate each question to your personal experience in the different learning programmes (classes or rehabilitation) that you are or were part of.

Questions

- 1. I have strong beliefs about what is right and wrong, good and bad in my own space.
- 2. When dealing with issues or engaging on matters, I often respond without considering the possible consequences.
- 3. I tend to solve problems using a step-by-step approach.
- 4. I believe that formal procedures and policies restrict people to do what they prefer.
- 5. I have a reputation for saying what I think, simply and directly.
- 6. I often find that actions based on feelings are as sound as those based on careful thought and analysis.
- 7. I like the sort of activities where I have time for thorough preparation and implementation.
- 8. I regularly question people about their basic assumptions.
- 9. What matters most to me is whether something works in practice.
- 10. I actively seek out new experiences.
- 11. When I hear about a new idea or approach, I immediately start working out how to apply it in practice.
- 12. I am keen on self-discipline such as watching my diet, taking regular exercise, sticking to a fixed routine, etc.

- 13. I take pride in doing a thorough task.
- 14. I get on best with logical, analytical people and less well with spontaneous, 'irrational' people.
- 15. I take over how I interpret data and avoid jumping to conclusions.
- 16. I like to reach a decision carefully after weighing up many alternatives.
- 17. I am attracted more to novel, unusual ideas than to practical ones.
- 18. I do not like disorganised things and prefer to fit things into a coherent pattern.
- 19. I accept and stick to laid down procedures and policies so long as I regard them as an efficient way of getting the task.
- 20. I like to relate my actions to general principle, standard or belief.
- 21. In discussions I like to get straight to the point.
- 22. I tend to have distant rather than formal relationships with people I interact with.
- 23. I thrive on the challenge of tackling something new and different.
- 24. I enjoy fun-loving spontaneous people.
- 25. I pay careful attention to detail before coming to a conclusion.
- 26. I find it difficult to produce ideas on impulse.
- 27. I believe in coming to the point immediately.
- 28. I am careful not to jump to conclusions too quickly.
- 29. I prefer to have as many sources of information as possible- the more information to think over the better.
- 30. Flippant, superficial people who do not take things seriously enough usually irritate me.
- 31. I listen to other people's point of view before putting my own view forward.
- 32. I tend to be open about how I am feeling.
- 33. I like discussions, and I enjoy watching the plotting and scheming of the other participants.
- 34. I prefer to respond to events in a spontaneous, flexible way, rather than plan things out in advance.
- 35. I tend to be attracted to techniques such as flow charts, contingency plans etc.
- 36. It worries me if I have to rush activities to meet tight due dates.

- 37. I tend to judge people's ideas on their practical merits.
- 38. Quiet, thoughtful people tend to make me feel uneasy.
- 39. I often get irritated by people who want to rush things.
- 40. It is more important to enjoy the present moment than to think about the past or future.
- 41. I think that decisions based on a careful analysis of all the information are better than those based on intuition.
- 42. I tend to be a perfectionist.
- 43. In discussions, I usually produce lots of spontaneous ideas.
- 44. In conversations, I put forward practical, realistic ideas.
- 45. More often than not, I believe rules are there to be broken.
- 46. I prefer to stand back from a situation and consider all the perspectives.
- 47. I often see inconsistencies and weaknesses in other people's arguments.
- 48. On balance I talk more than I listen.
- 49. I often see better, more practical ways to get things done.
- 50. I think written reports should be short and to the point.
- 51. I believe that rational, logical thinking should win the day.
- 52. I tend to discuss specific things with people rather than engaging in social discussion.
- 53. I like people who approach things realistically rather than theoretically.
- 54. In discussions, I get impatient with irrelevant issues and digressions.
- 55. If I have an activity to complete, I tend to produce lots of drafts before settling on the final version.
- 56. I am keen to try things out to see if they work in practice.
- 57. I am keen to reach answers via a logical approach.
- 58. I enjoy being the one that talks a lot.
- 59. In discussions, I often find I am realist, keeping people to the point and avoiding wild speculations.
- 60. I like to ponder many alternatives before making up my mind.
- 61. In discussions with people I often find I am the most dispassionate and objective.

- 62. In discussion I am more likely adopt a low profile than to take the lead and do most of the talking.
- 63. I like to be able to relate current actions to the longer term bigger picture.
- 64. When things go wrong, I am happy to shrug it off and 'put it down to experience'.
- 65. I tend to reject wild, spontaneous ideas as being impractical.
- 66. I believe it is best to think carefully before taking action.
- 67. On balance, I do the listening rather than the talking.
- 68. I tend to be tough on people who find it difficult to adopt a logical approach.
- 69. Most times I believe the end justifies the means.
- 70. I do not mind hurting people feelings so long as the task at hand gets done.
- 71. I find the formality of having specific objectives and plans stifling.
- 72. I am usually one of the people who put life into a celebration.
- 73. I do whatever is practical to get the task completed.
- 74. I quickly get bored with methodical, detailed activities.
- 75. I am keen on exploring the basic assumptions, principles and theories underpinning things and events.
- 76. I am always interested to find out what people think.
- 77. I like conversations to be run on methodical lines, sticking to laid down agendas.
- 78. I steer clear of subjective (biased) or ambiguous (unclear) topics
- 79. I enjoy the drama and excitement of a crisis situation.
- 80. People often find me insensitive to their feelings.

End//

ANNEXURE B: ETHICS CLEARANCE CERTIFICATE



Clearance
certificate from Unis

ANNEXURE C: PERMISSION TO CONDUCT RESEARCH



Permission to
conduct research by I

ANNEXURE D: PARTICIPANT INFORMATION SHEET AND CONSENT FORM

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: ERC Reference #: 2019-CRERC-018(FA)

Research permission reference number:

12 September 2019

Title: Examining the learning styles preferences of female offenders at the Johannesburg Female Correctional Centre.

Dear Prospective Participant

My name is Mulalo Unity Sivhidzho and I am a student at Unisa studying towards a degree of Master of Commerce. I am doing my research under the supervision of Prof MC Mulaudzi who is attached to the Department of Human Resource Management at Unisa. I am inviting you to participate in my research study entitled "Examining the learning styles preferences of female offenders at the Johannesburg Female Correctional Centre".

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research as part of fulfilling the requirements for the degree of Master of Commerce at Unisa. The purpose of this research is to examine the learning styles preferences of female offenders at the Johannesburg Correctional Centre.

WHY AM I BEING INVITED TO PARTICIPATE?

You are invited to participate in this research because of your presumed involvement in some learning/educational activities offered by the Department of Correctional Services inside the Johannesburg Female Correctional Centre.

All sentenced offenders at the Johannesburg Female Correctional Centre are welcomed to participate in this research.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

Your involvement in this research is by way of completing the questionnaire. The questionnaire is made up of open-ended and close-ended questions. It may take a maximum of 30 minutes for you to complete the questionnaire.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The benefit will be that the participants will be knowledgeable about different types of learning styles and be able to understand their learning style preference as individuals.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

There is no risk anticipated in taking part in this research. Participants will be provided with guidance on how to complete the questionnaire. There will be no consequences for taking part in this research. There is no foreseeable risk of discomfort that may arise as a result of your participation in this research.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. All the field workers will sign confidentiality agreements to guarantee your confidentiality in you participating in this research. Your anonymous data may be used for other purposes, such as a research report, journal articles and/or conference proceedings. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet for future research or academic purposes; electronic information will be stored on a password protected file. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After a period of 5 years, hard copies will be shredded and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of relevant software.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no incentives for participating in this study and no costs will be incurred by the participants in this study.

HAS THE STUDY RECEIVED ETHICS APPROVAL?

This study has received written approval from the Research Ethics Review Committee of the College of Economic and Management Sciences, Unisa and the Department of Correctional Services. A copy of the approval letters can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

The report of the findings will be given to JHB female Correctional Management to present to the offenders. Should you require any further information or want to contact the researcher about any aspect of this study, please contact me at 35385987@mylife.unisa.ac.za

Should you have concerns about the way in which the research has been conducted, you may contact Prof MC Mulaudzi at tshilmc@unisa.ac.za or 012 429 3724. Contact the research ethics chairperson of the CEM General Ethics Review Committee, Prof AT Muteza 012 429 4595 you have any ethical concerns.

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

Mulalo Unity Sivhidzho

CONSENT TO PARTICIPATE IN THIS STUDY

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 it had been explained to me) and understood the study as explained in the information sheet.

I have had 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 without penalty.

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 have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (Please print)

Participant Signature.....Date.....

Researcher's Name & Surname: Mulalo Unity Sivhidzho

Researcher's signature..... Date.....