MANAGING CHALLENGES FACED BY SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS IN IMPLEMENTING PRE-SERVICE TEACHER EDUCATION CURRICULAR

by

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DECLARATION

I, **THEMBELA COMFORT NTSHANGASE,** declare that:

- The research done in this thesis titled: "**Managing challenges faced by South African higher education institutions in implementing pre-service teacher education curricular"** is my original work. Any exception is acknowledged.
- This thesis, submitted to the University of Zululand for the degree of Doctor of Philosophy, has never been submitted by me for any degree or examination at any other university.
- This thesis does not contain any other person's diagrammes, graphs, writing or other information, unless specifically acknowledged.

Signed by_____on the _____ day of_____2020.

DEDICATION

This thesis is dedicated to my parents: my father, Jabulani Ntshangase, who passed on in 2006, for his support and motivation during my basic education and first degree and my mother, Monica Ntshangase for her support up to now; and to my siblings, Bongi, Cebi and Menelisi, who have been supportive in different ways.

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ABSTRACT

This study was informed by the persistent challenges faced by South African higher education institutions in implementing pre-service teachers' programmes. The main purpose of this study was to investigate how challenges faced by South African higher education institutions in implementing curriculum for pre-service teachers' preparation are managed. Briefly, objectives of the study were to (a) identify the challenges faced by South African higher education institutions in the curriculum implementation for pre-service teachers' preparations; (b) find out how the South African higher education institutions address the challenges they face in implementing the curriculum for pre-service teachers' preparations; and (c) investigate the views of academic staff on continuous curriculum review for pre-service teachers' preparation.

To achieve the objectives of the study, an interpretive paradigm was well suited to the study that used a qualitative approach and case study method. Purposive sampling was also used to select Sixteen (16) academics as participants to this study. In-depth interviews and document analysis were used as instruments in data collection. Thereafter, the researcher developed the themes and categories that were used without any comparison for data analysis and presentation. All these were done while university research ethics and national protocols for research were observed.

Furthermore, this study was underpinned by a constructivist learning and experiential design as its theoretical framework to review assorted and related literature that revealed challenges faced in implementing teacher education in general. Amongst the findings, lack of contemporary material and equipment were noted while the rapid evolution of technology and lack of technical support were identified. Weak internet access, staff shortages, inadequate mentoring of pre-service teachers during teaching practice; unruly behaviour of students during teaching practice; the physical condition of facilities at schools where teaching practice takes place, and the lack of formal training for curriculum review and implementation, were among the chief findings of the study.

Key words: *Curriculum; Curriculum design; Curriculum implementation; Pre-service teacher education; and academic staff.*

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LIST OF ABBREVIATIONS

- BEd Bachelor of Education
- CAPS Curriculum and Assessment Policy Statements
- DBE Department of Basic Education
- DHET Department of Higher Education and Training
- HE Higher Education
- HEIs Higher Education Institutions
- HEQC High Education Quality Committee
- HEQF Higher Education Qualification Framework
- HEQSF Higher Education Qualification Sub-Framework
- ICT Information and Communication Technology
- MRTEQ Minimum Requirement for Teacher Education Qualifications
- NQF National Qualification Framework
- NQFA National Qualification Framework Act
- NSE Norms and Standards for Educators
- PGCE Postgraduate Certificate in Education
- PGD Postgraduate Diploma
- PGDHE Postgraduate Diploma in Higher Education teaching
- PQM Programme Qualification Mix
- SAHEIs South African Higher Education Institutions
- UE University of Education

CHAPTER ONE

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

Post 1994 and the first democratic elections, the South African government had an unenviable task at hand to deal with a segregated, fragmented, authoritarian, unequal and inefficient education system (Adler & Reed, 2002:22-23). At this stage, South Africa was left with only one option and that was to prepare teachers for basic education as all colleges of education had been shut down. Since then, prospective teachers have been trained and prepared at universities. This happened by moving teacher education into universities and universities of technology. The restructuring was guided by the Constitution of the Republic of South Africa (1996), which states that everyone has the right to further education, which the state, through reasonable measurement, must make progressively available and accessible. Furthermore, in order to ensure the effective access to, and implementation of relevant education, the state must consider all reasonable educational alternatives, including single medium institutions, taking into account equity, feasibility and the need to address the result of former racially discriminatory laws and practices (Republic of South Africa, 1996).

As part of continuous restructuring, the Department of Higher Education and Training (DHET) (2011) developed a policy framework on the minimum requirement for teacher education qualifications (MRTEQ). This policy was developed to replace the Norms and Standards for Educators (NSE) which had been formulated to guide and inform the design and development of the initial teacher education programmes. In 2008 the National Qualification Framework Act increased the 8 existing NQF levels into ten. The MRTEQ policy confirms the roles of a teacher only as functions to be carried out by the collective of teachers in a specific school. The restructuring of the initial teacher programmes were ushered in by the Higher Education Qualification Sub-Framework (HEQSF). Furthermore, the revised MRTEQ (2011) was initiated regulatory changes

to the Higher Education Qualification Framework (HEQF) (2007). All aligned initial teacher education programmes exit at NQF level 7 (DHET, 2015a).

Processes and structures for restructuring and transformation in teacher education and development in post-Apartheid South Africa had to be inclusive. The plan sets out activities based on the policy, which was to identify and address teachers' developmental needs to include teachers, school leaders and subject advisors who should exist throughout the system (Botman, 2016:64-65). The democratic principles aimed to include all interested groups from education institutions. Failing to involve interested groups implied that non-democratic principles were used towards transformation of the society.

Mda and Mothata (2000:12) state that the Higher Education Act 101 of 1997 addressed the principles set out in the education White Paper 3. This Act produced a single re-structured higher education system that would address the needs of the country and deal with past discrimination to provide equal access to higher education. Balfour (2015) avers that education in the era of apartheid was intended to produce a relatively unskilled labour force for sectoral centres. By contrast, the democratic South African government had to consider how education could serve the economy (Adler & Reed, 2002:24).

The Department of Higher Education and Training (DHET) (2004:1) declared that in the process of restructuring the issue of quality could not be ignored, and therefore require institutional planning and involvement. The DHET (2004:1) further suggests the following institutional arrangements for quality management:

- Quality assurance – the policies, systems, strategies and resources used by the institution to satisfy itself that its quality requirements and standards are being met;
- Quality support – the policies, systems, strategies and resources used by the institution to support and sustain existing levels of quality;
- Quality development and enhancement – the policies, systems, strategies and resources used by the institution to develop and enhance quality; and

- Quality monitoring – the policies, systems, strategies and resources used by the institution to monitor, evaluate and act on quality issues.

Lange (2017:44-45) confirms that the role of the High Education Quality Committee (HEQC) was established under the Higher Education Act 1997. This team has the responsibility of quality assurance and management of other activities that provide commitment to programmes' credibility. Moreover, in the implementation of these, the HEQC uses different strategies which are used internationally for quality assurance such as institutional audits and accreditation of programmes.

1.2 BRIEF REVIEW OF RELATED LITERATURE

Various sources were reviewed to build a background of what had happened in colleges of education where preparation and education of teachers had taken place during the apartheid years. A brief review of the literature was also conducted to identify possible gaps in the implementation of the curriculum for pre-service teacher education, since the transformation that started after 1994.

The study by Botman, (2016:48) on the Freirean perspective on South African teacher education policy development states the following: "*After a long history of segregated Apartheid teacher education and training, post-Apartheid policies governing teacher education and development have gone some way in contributing towards transforming South African society. The particular area within the education sector that could play a pivotal role in addressing transformation is teacher education*."

Academics involved with teacher education are faced with different challenges in preparing student teachers for teaching in a multi-structured world. One of the tasks of academic staff is to prepare student teachers to behave in a professional manner to face challenges that they will find in the workplace (Vranješević, 2014:474). There are different challenges that come with frequent changes in the curriculum with regard to pre-service teacher education programmes. On the other hand, the curriculum must provide pre-service teachers with strategies to address diversity and the context that they will encounter in schools.

Cloete, Maassen, Fehnel, Moja, Perold and Gibbon (2004:269-276) argue that the gap between historically advantaged and disadvantaged universities causes many challenges in the system. On evaluation it was clear that there is inequality in terms of allocation of finances. Historically advantaged universities are financially privileged compared to those universities known as historically disadvantaged. Furthermore, the above-mentioned authors suggest that those challenges that the institution of higher learning face will not be overcome by the institution alone: Strong and thorough intervention from government is needed during the process of restructuring and afterwards.

Lee, Nelson, Auffant and Perveiler (2018) identify that teacher education programmes are not designed to produce teachers who are ready to deliver the curriculum, because of many challenges that may develop from different areas. They need more years of experience to adapt to the rural-based schools and they may find it easier to teach at the urban schools. Another challenge develops from the relationship between institutions of higher learning and partnering schools where pre-service teachers are placed for practical teaching. In-service teachers are trained or empowered on how to mentor the pre-service teachers while they are perhaps not familiar with the expectations of HEIs. Ellis (2016:368) agrees that some of the challenges about relationships between schools and universities require that schools become incubators for teacher educators to learn. There is also a lack of professional development within teacher education programmes which is supposed to provide pre-service teachers with ideas, knowledge and skills. The expectation is that once these students are employed after completion, they will enlighten others and be able to mentor and coach other young student teachers who are placed in their schools for teaching experience. There is also a challenge to identify the period where teachers become professionals.

An understanding of initial pre-service teachers' emerging identity may assist higher education teacher education programmes to prepare pre-service teachers for their professional teaching career (Beltman & Glass, 2015:226). Furthermore, Beltman and Glass (2015:241) reveal that pre-service teachers acquire more experience from

different school practices in their placements, and their vision of being teachers could change. The challenges that are faced by teacher educators and mentor teachers in schools create the impression that the teacher education programmes are complex and there is no transfer of skills from theory to practice. It has been observed that some students come to school practice for teaching experience without being thoroughly prepared or disciplined professionally.

A crucial issue is to develop and establish suitable systems to train and to assess skills and values. Moreover, Tardif (2001:10) proposes that the focus be on the following areas of concern:

- An accreditation to teacher training institutions must be monitored more closely than is currently the case;
- Assessment of resources to the teacher training institutions needs to be taken into account to create a pre-service training systems that has been allocated with resources;
- Trainers/ academics should provide evidence that pre-service training contributes to the learning, and
- Lastly, continuous and sustained research programmes on professional skills, values and standards should be followed that can be convincingly executed within pre-service training.

The study by Khan and Saeed (2009: 94) reveal that the Bachelor of Education (BEd) as pre-service teacher education programme at a university of education (UE) is relatively better than a postgraduate diploma (PGD) in preparing teachers. In the BEd programme, students are introduced to school experience from year one of the programme whereas in the PGD students have only one year for school practice. Knorr (2012: 21) suggests that the pre-service teacher education programmes must introduce collaboration in education to pre-service teachers that can contribute to positive teacher preparation and positively influence collective and professional development. The support among students can create an atmosphere of teamwork to facilitate individual academic and personal growth.

Mashau (2012: 55) argues that pre-service teacher programmes are not sufficient in developing pre-service teachers holistically. The training must provide students with enough disciplinary knowledge and skills and other coordinated activities to equip them when pursuing teaching as a profession. Teacher education should integrate the pre-service teachers' apprenticeship from a perspective of community service learning via an educational approach that integrates community service and intentional learning activities (Mortari, Silva, Girelli & Ubbiali, 2017:76). Community service learning sets up a service action that connects pre-service teachers with in-service teachers enabling the former to strengthen their training curriculum through an experiential path, to develop a sense of civic responsibility towards their community, and to encourage the reflective sharing of their own experiences. Khatoon, Rehman and Ajmal (2011:75) reveal that the difficult part in teacher education is to prepare pre-service teachers who have different cultures and backgrounds to teach learners who also have different backgrounds. Teachers are taught these multi-cultures and backgrounds. They should be taught how to teach learners from different backgrounds and cultures, multi-grades and levels in a single class.

Tokmak and Karakus (2011) assert that the teacher education programmes must not only focus on pedagogy, but focus also on thinking. However, pre-service teachers use theory from their personal background when they teach. Pre-service teachers face challenges of curriculum interpretation as the school curriculum is revised now and then to achieve overall educational goals. This implies that teacher education should be able to respond to such needs. They also often use the styles of teaching that were used by their previous teachers rather than those methods they had been taught to use for teaching practice. According to Wong (2008), the pre-service teachers must be given an opportunity to state their concern to the curriculum planner. Moreover, pre-service teachers encounter problems with the research skills rather than studying, writing, listening and speaking skills. They have generally not been warned against "cutting and pasting" which cause a decrease in creativity.

Technology is the most eminent factor to be used in the implementation of any curriculum currently, be it higher education or secondary education. Koc and Bakir (2010:19-20) claim that pre-service teachers are not effectively skilled in achieving effective technology incorporation. Technology is frustrating to use when suitable support is not provided. This indicates a greater need for training of pre-service teachers at the early stage of teacher education. Training must be included in the whole curriculum rather than being offered as a standalone project to pre-service teachers. The issue of quality education is important, as asserted in the study done by Ambag (2015). Learners expect teachers who are competent to teach subjects. Competence is shown in the effective application of methodologies, strategies and resources to deliver the subject matter. Integration of technology in the implementation of curriculum by teachers also reveals the competence of subject teachers. Teacher education programmes must produce teacher educators who are proficient and competent.

Dynamic technological developments exert a powerful influence on teachers' education. With the rapid emergence of new technology, it has become crucial to train teachers and equip them with technological skills to communicate effectively with the digitally oriented community (Woldab, 2014:159). Beyerbach, Walsh and Vannatta (2001:125) agree that pre-service teachers should hone their software application skills to be able to technologically integrate material. Area administrators and teachers can assist in the promotion of technological skills that are required for the first-year teachers in order to come up with stimulating course topics. Koc (2005:13) posits that the benefits of incorporating technology do not happen simply because the technology has been provided; technology without teachers who are knowledgeable in using it and who understand curriculum objectives cannot be effective in the classroom.

Flores (2015:1) emphasises that pre-service teachers lack the confidence, needed skills and theoretical background to teach effectively in the contact sessions in class. Practical teaching is crucial in learning to acquire adequate skills and values that will be needed in service. Masari and Petrovici (2014:26) propose an essential shift from the planned curriculum by implementing some inventive directives for pre-service

teacher education. Students need to acquire both knowledge and the required pedagogical content knowledge.

Lopes and Tormenta (2010) reveal different ways in which pre-service teachers identify themselves to become future teachers in the teaching profession. There are pre-service teachers who identify themselves through association, which can be from family or friendship. Many pre-service teachers unfortunately perceive the profession as the easiest job to do where one is timeously employed and promoted. There are teachers who are already in the teaching profession without any passion to become teachers. In most traditional schools, the collective identity corresponds with the individual identity as part of occupational practice, yet in many modern schools there is a gap between school work as collective identity and the individual teachers' identities as manifested in the professional environment (Lopes & Tormenta, 2010:57). Owu-Ewie (2008:173) argues that to develop pre-service teachers' learning, quality materials and strategies to use material must be developed as well. Developed materials and strategies must be drawn on to construct knowledge of pre-service teachers. There is a gap between curriculum objectives and materials that are used to prepare for teaching and learning as a process. Furthermore, there is a need to train pre-service teachers who will be innovative and independent thinkers to develop materials that will meet the standard of curriculum objectives.

McRobbie (2000:1) admits that good teacher preparation programmes do exist, but there has been no organised way to ensure that all teachers obtain and continue to develop the knowledge and skills they need. Reality sometimes stands in the way and obstructs one's progress toward achievement goals. Mergler and Spooner-Lane (2012:78) assert that for a pre-service teacher to become effective requires more time to gain experience. It is normal for beginner teachers to be ineffective while they are gaining experience. Therefore, more experienced teachers are needed to mentor pre-service teachers during their practicum period; these experienced teachers must be trained to mentor inexperienced in-service teachers as well. Denessen, Kloppenburg, Bakker and Kerkhof (2009) claim that the teacher education curriculum does not offer pre-service teachers programmes that train them for skills and values to involve

parents in their teaching and learning. The beginner teacher may find it difficult to communicate with learners' parents, even though they have an open attitude.

1.3 THEORETICAL FRAMEWORK

Curriculum design is that stage in which a new curriculum is planned, or in which the review of an existing curriculum is undertaken after a full review has been done. Features such as flexible planning and decision-making must dominate at this stage. This stage usually has a number of distinctive components, which include purposefulness, content, methods, learning experiences and valuation. Curriculum implementation is the stage during which the most suitable design is applied in practice. Curriculum evaluation is that stage in which the standard and outcome of the pertinent curriculum is evaluated (Carl, 2015).

Theories of curriculum design and implementation have grown from academic theory to the experiential theory, constructivist theory and later to the technological theory. Approaches to curriculum development have also changed from traditional and bureaucratic approaches to a political approach: The researcher will expect different interpretations of academic staff experiences of curriculum implementation for pre-service teachers' preparation from participants. This is regarded as interpretive of participants' experiences to use systematic measures while acknowledging that there are various socially interpreted truths (McMillan & Schumacher, 2010).

The following two theories will be useful in the study of managing challenges faced by South African higher education institutions in implementing pre-service teacher education curricular: experiential learning theory and constructivist learning theory.

1.3.1 Experiential learning theory

The experiential learning theory obtained its eminence in education towards the end of the 1800s and early 1900s. Experiential learning theory was developed by John Dewy, Kurt Lewin and Jean Piaget. Later, David Kolb also focused on this theory. According to Beaudin and Quick (1995:11), Kolb describes the experiential learning theory as a four-part process, where students are asked to engage themselves in a new experience, actively reflect on that experience, conceptualise that experience and integrate it with past experiences. Moreover, they must conclude their experiences based on their shaped ideas.

The application of Kolb's experiential learning theory helps students to identify themselves and assists academics to find students' learning styles, and may significantly improve academic skills. Academics work hard to attend to every minute aspect to develop their work, and improvement will be duly noticed at the end of an academic period. When experiential learning theory is implemented effectively into practice, if understood by both academics and student, there will be positive outcomes (Kolb & Kolb, 2009). Loewenberg, Ball and Forzani (2009) posit that the responsibility of academics is to work with students in shaping students' experiences to develop best ideas. In the process, academics are also learning from different experiences that students have gone through. This experience of the past is important for both academics and students to have a common framework to achieve common outcomes.

Mollaei and Rahnama (2012) posit that experiential learning is inclusive, collaborative, and practical. It allows contact with the setting and experience of developments that are extremely flexible and unclear. The organised experience needs to be applied at some stage to achieve the expected outcomes which need to be stated and monitored. Students have to evaluate the experience in light of the theory and their own feelings. Experiential learning theory provides the framework in which students acquire skills and values through experience. Academics have a huge responsibility to guide and monitor students on applying experiences they have to accomplish their academic programmes. In the words of Gorghiu and Santi (2016:321) "*experiential learning*

(known also as the learning based on experiences) represents the way in which students' direct experiences can be turned to good use, in order to realise an efficient and sustainable learning".

1.3.2 Constructivist learning theory

The constructivist theory of learning gained its prominence during the time of Socrates, who believed that academics and students should collaborate to interpret and construct the unknown knowledge by finding solutions (Schiro, 2012). Suryawati and Osman (2018) state that the term constructivism was further developed by Piaget (1967) in views of learning through constructivism and Bruner (1996) in learning discovery from a constructivist point of view.

Constructivism as an educational theory suggests that academics must first welcome students' prior knowledge and allow them to put their knowledge into practice. This theory indicates that there is a shift in the field of education that has taken place, from academic-centred to student-centred in the process of teaching and learning (Biggs, 2011). According to Fosnot (2013), most interpretations of the meaning of constructivist theory concur that it includes continuous change in the emphasis of lecturing and places the students own hard work to understand at the centre of the educational initiative. The constructivist learning theory will assist to understand various approaches of curriculum implementation for pre-service teachers. It supports problem-solving and collaboration in order to make meaning of knowledge. Interaction between academics and students can assist academics to find a better way of developing a curriculum. Constructivism includes features such as "*culture", "context",* "*literacy" and "application of knowledge*". All these assist academics to evaluate and ascertain the effect on curriculum implementation (Mogashoa, 2014:58).

1.4 STATEMENT OF THE PROBLEM

The South African higher education system has not yet produced the expected output due to a lack in stability; it changes from one system to another before it is understood by all stakeholders (Bitzer, 2009). Schreuder (2014: ii) agrees that the South African higher education system has undergone continuous change in programmes since the inception of democracy in 1994. It shows that since then the curriculum has failed to produce what is required by the constitution of the country. The South African constitution promotes inclusivity and equality in all spheres of government.

The university pre-service teacher education programmes had been incorporated with the programmes of teaching colleges since the year of 2000. Since then the numbers of pre-service teachers enrolled in universities have increased compared to enrolment before the incorporation of colleges. The challenge of managing heavy teaching loads started (Human Sciences Research Council, 2009). Moreover, DHET (2014a: 7) identifies a lack of expertise in curriculum development and teaching methodologies among academic staff and a lack of infrastructural support, learning spaces, Wi-Fi that is weak, overcrowding and the teaching of large classes where the majority of members of academic staff lack the methodology to teach, as some of the challenges in implementing a pre-service teachers' curriculum. Rural universities have worse problems as they mostly attract students from a rural background who have not been exposed to the diversity and demand of the academic environment.

The gap between basic education and higher education causes a lot of frustration for pre-service teachers. The university content is not aligned to school subject matter. However, the DHET (2014b:16) maintains that there are no other clear proposals on the table that have not already been tested to various extents. Among other things they pay attention to improving pedagogy and increasing the use of information technology including interactive teaching and learning.

The South African government uses continuous educational restructuring as a strategy for overcoming challenges that were discovered in the process of implementing previous curriculums. This is done without continuous teacher development. Currently South African universities are responsible for producing teachers who play a role in curriculum implementation. Mpofu and de Jager (2017: 203) agree that literature confirms that teachers who are new in service are not always prepared to undertake the responsibilities of teaching. Researchers claim that training programmes have not effectively prepared them for the actual instructional practices. Mashau (2012) argues that pre-service teacher training is inadequate for the South African education system: In many cases, beginner teachers become frustrated as they are not trained to cope with many policies related aspects and issues, management and curricula. The focus of training is mainly only on teaching and learning.

Mabusela, Ngidi and Imenda (2016:63) declare that studies to investigate educators' experiences in implementing curriculum since the restructuring of education systems are very limited. The problem that this study seeks to investigate stems from the fact that there is insufficient documented information on how faculties responsible for teacher education have experienced post- apartheid educational restructuring in their practice. Furthermore, changes of this nature affect all phases of education, because of reformation of institutions by removing teacher education from colleges and assigning it to universities as curriculum developers. Academics are additionally affected as role-players in the implementation of educational transformation, and there is a need to document their experiences of curriculum implementation for pre-service teachers' preparation.

The present study, titled *managing challenges faced by South African higher education institutions in implementing pre-service teacher education curricular,* attempts to answer the following questions:

- What are the challenges faced by South African higher education institutions in implementing the curriculum for pre-service teachers' preparation?
- How do the South African higher education institutions respond to challenges faced while implementing the curriculum for pre-service teachers?

- What are the views of academic staff on the continuous curriculum review for pre-service teachers' preparation?

1.5 AIMS AND OBJECTIVES OF THE STUDY

This study aims to investigate how challenges faced by South African higher education institutions in implementing a curriculum for pre-service teachers' preparation are managed. The objectives to achieve the aim of the study are to:

- Identify the challenges faced by South African Higher Education institutions in the curriculum implementation for pre-service teachers' preparation;
- Find out how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparation; and
- Investigate the views of academic staff on continuous curriculum review for pre-service teachers' preparation.

1.6 CONTRIBUTION TO THE BODY OF KNOWLEDGE

The study is pertinent to the following bodies: Policy designers; South African Higher Education institution (academics), Department of Basic Education (In-service teachers) and pre-service teachers.

- To policy designers: The significance of the study in contributing to exiting knowledge compiles different challenges of academics who are involved in the implementation of pre-service teacher education to inform and provide the feedback on how improvement can be done in the new curriculum to address challenges that are uncovered.
- To South African Higher Education institutions (academics): The feedback for further research on similar topic is done. The focal point has been discovered for further research where wider sample and mixed method would be used. The study provides higher education institution with the insight pertaining to shortcomings that may be a challenge in pre-service teacher education

implementation. Furthermore, the idea is to strengthen content knowledge and pedagogy of the current initial teacher programmes in collaboration with schools, and community needs. It further indicates good and bad results that may be imminent of the shortcomings in the implementation of pre-service teacher education.

- Department of Basic Education (In-service teachers): The study provides feedback to ongoing curriculum review with an aim of responding to the scarcity of in-service teachers who are easily adapt to the new curriculum.

Pre-service teachers: The study provides strategies on how they can adapt to old and new curriculum regardless of the environment and conditions of the school in which one may be employed to implement the curriculum. The study further reveals different challenges on the implementation of pre-service teacher education. The revealed past challenges helps pre-service teachers to understand the past dynamics to work in collaboration with academics to get the best teachers.

1.7 OPERATIONAL DEFINITION OF TERMS

1.7.1 Curriculum

This refers to the content taught in a school or in a specific subject. It is a concept that refers to the knowledge and skills learners are expected to learn, which includes learning aims and objectives that are expected to be met; the units and lessons that teachers teach, the assignments and projects given to students; the books, materials, videos, presentations, and readings used in a subject all form part and parcel of the curriculum implementation. It also embraces the tests, assessments, and other methods used to evaluate learners' learning (Pinar, Reynolds, Slattery & Taubman, 2014).

1.7.2 Curriculum design

This refers to a statement that stipulates the components of the curriculum such as rationale, aims and objectives, contents, learning activities, academics roles, materials

and resources, grouping, location, time and assessments. The reciprocal relationship of these components is also aligned to the values of the organisation and the requirements of that organisation for the administrative settings under which it operates (Kelly, 2009).

1.7.3 Curriculum implementation

This involves putting into practice the official curriculum design, syllabuses or programmes. The process involves helping the students attain knowledge and experiences. It assists them in achieving the learning outcomes by motivating and rewarding them to ensure optimal involvement (Richards, 2013).

1.7.4 Pre-service teacher education

This refers to university programmes that are offered as initial teacher education that is supposed to prepare students to be trained as teachers. These programmes focus on hands-on training which prepares the students for the teaching environment with all the challenges they face (Mashau, 2012:55).

1.8 RESEARCH METHODOLOGY

1.8.1 Research paradigm

This study was informed by phenomenology which is found within the interpretive paradigm as it is appropriate for social sciences research due to its constructionist base that seeks to uncover how actors make sense of their reality (Bryman, 2012:28). Interpretivist believe that reality is constructed by social actors. Maree (2016:22-23) posits that interpretivist ‘‘*foregrounds the meaning that individuals or communities assign to their experiences, social context, conventions, norms and standards*”. Experiential learning theory acknowledges that individuals, within their own contexts, assumptions and experiences, contribute to the continuing construction of reality existing in their wider social environment through social collaboration (Wahyuni,

2012:71). According to Mertens (2010:16), interpretivist assumes that knowledge is interpreted by people who are involved in the research process, and the researcher will attempt to understand beliefs from the point of view of those who believe in them.

The interpretive paradigm is informed by a concern to comprehend the world as it is, to understand the basic nature of the social world at the level of subjective experience. It searches for "*explanations within individual consciousness and subjectivity, within the edge of reference of the participant as opposed to the observer of action"* (Maree, 2016: 61). Interpretivists are interested in the interpretation of participants' views, perception and thoughts which are described in terms of what is perceived and thought about.

The interpretive paradigm was used in this study for emphasis on multiple perspectives, social and political experiences. Participants were expected to be "*consistent with the social and political interpretive approach on views and challenges that are part of implementing curriculum for pre-service teachers' preparations*" (Lodico, Spaulding & Voegtle, 2010). The interpretive paradigm was relevant to this qualitative study that used interviews and document analysis as methods of collecting data to find experiences of academics on curriculum implementation, rather than depending on figures (Thanh & Thanh, 2015).

1.8.2 Research design

This describes the processes for conducting the study, including when, from whom, and under what circumstances the data will be acquired. It further indicates the broad plan, how the research is set up, what happens to the subject, and which methods of data collection are used (McMillan & Schumacher, 2010). Punch (2009) agrees that this refers to the way a researcher guards against, and tries to rule out, alternative interpretations of results. Conrad and Serlin (2011) also agree that it reflects on the entire research process, from conceptualising a problem to the literature review, research questions, methods, and conclusions. It also refers to the methodology of a

study. This study is qualitative because it intended to extensively describe events, frustrations, challenges and the activities of academic staff in implementing a curriculum for pre-service student teachers. Qualitative data focus on the perspective of the participants and are interested in first-hand experience, because this provides the most meaningful data.

This is a case study. The case study method is used for "*understanding complex issues in its real-life setting to attain an in-depth understanding of problems, events and phenomena of interest*" (Crowe, Cresswell, Robertson, Huby, Avery & Sheikh, 2011:1). Crouch and McKenzie (2006) agree that in a case study, a broad investigation is done and the data that a researcher could collect are massive, oscillating from comprehensive amounts of inventory to in-depth interviews. Normally, the assessment includes capturing the perceptions of different participants in the case. The study used a qualitative approach informed by an interpretive paradigm, where the focus was on finding reality and deeper understanding of the phenomena. In qualitative research, selecting participants and location take place by using purposive sampling, based on persons who assist to comprehend the central phenomenon (Merriam, 2015).

1.8.3 Sampling procedures

Purposive sampling was used for this research because it is the type of sampling which is suitable for qualitative research. The rationale behind purposeful sampling in this study was according to Creswell (2014) based on the research knowledge of the population, its elements and research aim. McMillan and Schumacher (2010) argue that in purposive sampling the samples are chosen, because they are likely to be knowledgeable about the phenomenon the researcher is investigating. One of the major benefits of purposive sampling is the extensive variety of sampling techniques that can be used across qualitative research designs.

The targeted population for this research study was academics from the University of Zululand who teach and implement programmes for pre-service teachers. Sixteen (16)

academics were selected from seventy-one (71) academics to participate in this study. Two (2) experienced academics per academic department were selected from eight (8) academic departments to have the total number of 16. Experienced academics in this study were those who had been in the academic fraternity for more than five (5) years. These academics were purposefully selected for their experience they had attained from implementing different programmes of teacher education. They had been members of the academic fraternity before the Policy on the Minimum Requirements for Teacher Education Qualification (MRTEQ) had been revised. The policy revision was done to align qualifications for teacher education with the Higher Education Qualification Sub-Framework (DHET, 2015a). Experienced academics assisted in this study to share their experience regarding the old and the new programmes to identify challenges that are faced by academics in the curriculum implementation for pre-service teachers' preparations, and to establish responses to challenges faced by academics while implementing the curriculum for pre-service teachers. They also offered their views on continuous curriculum review for pre-service teachers' preparation. "*In short, purposive sampling is a non-random sampling technique in which the researcher solicits persons with specific characteristics to participate in a research study*" (Johnson & Christensen, 2012:231).

1.8.4 Research instrument

1.8.4.1 In-depth interview guide

Audio-digital recordings were employed to conduct in-depth interviews with academics of the selected university. A formal set of questions was prepared for this purpose.

The scheduled interviews were carried out to identify the experiences faced by academics in the curriculum implementation for pre-service teachers' preparation, to establish responses to challenges faced by academics while implementing the curriculum for pre-service teachers, and to establish the views of academics on continuous curriculum review for pre-service teachers' preparation.

1.8.4.2 Document analysis guide

Document analysis was used as a system of data collection. This was done by reviewing existing documents. These documents were both in the form of soft and hard copy (Pacho, 2015:50). Bernard, Armstrong and Attig (2005:36) assert that information collected from documents may be more precise than personal memory information. It also adds reliability to verbal reports obtained from participants during interviews. In this study the relevant documents for review included policy documents on curriculum review and development, minutes and reports related to curriculum review and implementation, calendars, brochures, course curricula and assessment, documents related to teaching practice, and policy documents on assessment.

1.8.5 Data analysis and presentation

This took place soon after all interview schedules and collection of relevant documents had been completed. This process started by organising qualitative data collected from documents and participants. The search for meaning was accompanied by identifying the smaller units of meaning in the data, which according to McMillan and Schumacher (2010:369) must be understandable without additional information, except for the knowledge of the researcher's focus of enquiry. These researchers note that the immense amount of data can seem overwhelming, and generating these units gives one assurance that you can make sense thereof.

In this study, data were organised into themes and categories in order to find meaning. Strauss (1996) observes that subcategories specify a category by denoting information such as when, where, why, and how a phenomenon is likely to occur. Subcategories, like categories, also have properties and dimensions. Transcription is the process of audio recorded information and other relevant information is converted into a format that facilitates analysis (McMillan & Schumacher, 2010). Data transcription in this study took place from the digital recordings taken during interviews.

1.9 CONCLUSION

This chapter served as an introduction to the study by providing background to the study and stating the problem, aims and objectives. A literature overview and theoretical framework were briefly provided in this chapter. This chapter also concisely outlined how the research design; sampling; instrumentation and data were presented. This chapter provided proof that ethics had been carefully considered. The next chapter will broadly and extensively present literature that were reviewed to find common and related issues to what the study investigated.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter presents background literature on challenges faced by South African higher education institutions (SAHEIs) in implementing a curriculum for pre-service teachers and challenges regarding the preparation of pre-service teachers. Both global and African challenges in general are brought into account. This chapter also reviews SAHEIs' challenges on the assessment and teaching practice of pre-service teachers and approaches used by SAHEIs to address pre-service teachers' preparation. In addition, SAHEIs' challenges on the transition from basic education to higher education for pre-service teachers and the processes of continuous curriculum review for pre-service teachers' preparations are discussed.

2.2 BACKGROUND TO CHALLENGES FACED BY SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS IN IMPLEMENTING CURRICULUM FOR PRE-SERVICE TEACHERS

Segregation of education in South Africa was identified as main cause to shut down the colleges of education. These colleges of education were formerly known as institutions for preparing black teachers for teaching at the basic level of education. IN the previous dispensation, South African education was separated on all levels. This included higher education and training as well as basic education (Legodi, 2001). In this regard, Hlalele (2018) remarks that colleges of education were specifically geared towards promoting education on the basis of homelands and ethnicity. The homelands policy was to monitor and oppress people using traditional leaders of that particular group or society. Literature that shows the segregation of teacher education before democracy is limited, and that alone is identified as a limitation in bridging the gap towards transformation.

Furthermore, Hay and Monnapula-Mapesela (2009) note that post 1994, after the democratic government replaced the apartheid government, the segregated education system was transformed to one system. Teacher education programmes were introduced to universities and since then, the teacher education programmes were offered at universities and universities of technology. The following are some of the pertinent challenges which had been experienced by the colleges of education before the democratic government took over:

- Lack of quality education at tertiary institutions which were historically known as black;
- Unequal distribution of resources and facilities;
- A teaching and learning culture was not promoted
- Education itself did not encourage social transformation; and
- An outdated curriculum did not address current issues.

Moreover, according to the South African Higher Education Act No 101 of 1997, the democratically elected government had the major task at hand of reconstructing the South African higher education scene. The first stage was to introduce the new South African Higher Education Act, with the following objectives:

- Institute programmes that support one consolidated effective higher education;
- Reform higher education institutions with progressive programmes that address challenges facing the country as the whole;
- Restore the dignity of historically disadvantaged societies by giving equal opportunities to all;
- Offer South African citizens the best chance to access higher education to create a learning nation;
- Produce a nation that is patient and has respect for one another;
- Recognise and respect different backgrounds, cultures and other rights as set out in the constitution of the republic; and
- Promote an innovative and research-based system of learning.

South African education has seen numerous reforms, but still the South African higher education institutions are facing many challenges that hinder the process of producing

teachers who are ready to implement the curriculum in schools. The curriculum in schools is also ever-changing which creates more challenges to new teacher that are coming in the system (Barnes, Zuilkowski, Mekonnen & Ramos-Mattoussi, 2018). The study by Botman (2016:48) on the Freirean perspective on South African teacher education policy revealed that democratic policies have done a lot to transform the South African community. The teacher education sector was identified as a key in transforming the South African community. In this regard, the academics are expected to play a pivotal part in preparing pre-service teachers to play an important role as well to transform South African society.

Academics face different challenges in preparing student teachers for teaching in a multi-structured world. One of these tasks is to prepare student teachers to behave in a professional manner to face challenges that they will find in the workplace (Vranješević, 2014: 474). Different challenges come with frequent changes in the curriculum pertaining to pre-service teachers. On the other hand, the curriculum must provide pre-service teachers with strategies to address the diversity and classroom context that they will encounter in schools.

Cloete et al. (2004: 269-276) argue that the gap between historically advantaged and disadvantaged universities causes many challenges in the system. On evaluation, it was clear that there is inequality in terms of allocation of finances. Historically advantaged universities are financially privileged compared to those universities known as historically disadvantaged. Furthermore, the above-mentioned authors suggest that the institution of higher learning will not overcome certain challenges on its own. Strong and thorough intervention from government is needed, both during the process of restructuring and afterwards.

A crucial issue is to develop and establish suitable systems to train and to assess skills and values. Moreover, Tardif (2001:10) proposes that the focus should be on the following areas of concern:

- Accreditation of teacher training institutions must be monitored more closely than is currently done;
- Assessment of resources to the teacher training institutions needs to be taken into account to create a pre-service training system;
- Trainers/ academics should provide evidence that pre-service training contributes to the learning, and
- Continuous and sustained research programmes on professional skills, values and standards should be followed that can be convincingly executed during pre-service training.

Mashau (2012:55) claims that pre-service teacher programmes are not sufficient in developing pre-service teachers in a holistic manner. The training must provide students with enough disciplinary knowledge and skills and other coordinated activities to equip them when teaching. Teacher education should integrate the pre-service teacher's apprenticeship from an integrated community service and intentional learning activities perspective (Mortari, Silva, Girelli & Ubbiali, 2017:76). Community service learning sets up a service action that connects pre-service teachers with in-service teachers enabling the former to strengthen their training curriculum through an experiential path, to develop a sense of civic responsibility towards their community and to encourage the reflective sharing of their own experiences. Khatoon, Rehman and Ajmal (2011:75) reveal that the difficult part of teacher education is to prepare pre-service teachers who have different cultures and backgrounds to teach learners who also have different backgrounds. Teachers should be taught how to teach learners from different backgrounds and cultures, multi-grades and levels in a single class. Civitillo, Juang, and Schachner (2018) argue that the teacher education curriculum does not address the issue of cultural diversity. This explains why it is difficult for the universities to produce pre-service teachers who are able to integrate programmes which deal with cultural diversity in schools.

Pudi (2005) argues that the drive to produce competent teachers cannot be lost due to the NSE that is now known as roles for educators and still in place to classify pre-service teachers who are competent and efficient to implement a curriculum at

schools. This is in spite of the shift in paradigm and focus of programmes that are offered currently, compared to programmes that were offered between 1994 and 2000 for preservice teachers. In short, teacher education programmes are expected to produce pre-service teachers who able to master all the roles stated in the MRTEQ document that states all minimum requirements for teacher competency. Sibaya and Sibaya (2008) claim that since 1996 teacher education has gone through several stages of reconstruction, but are still not up to standard to produce efficient and competent pre-service teachers. The NSE determined seven roles to measure whether teachers were well prepared to implement curriculum at schools.

Additionally, the NSE only stated roles to measure whether pre-service teachers in their final year of study are competent and ready to implement curriculum for basic education or not. The NSE did not provide any tool that pre-service teachers can use for themselves to measure and identify their readiness to serve as competent teachers. Fraser (2018) notes the importance of finding one's identity for pre-service teachers while they are still in training. This helps the prospective teacher to identify the gap that one needs to fill in while still preparing for service.

2.3 CHALLENGES OF PREPARING PRE-SERVICE TEACHERS

2.3.1 Global and international challenges of preparing pre-service teachers

Argentina

Lack of teacher training for inclusive education for learners with a disability is identified as one of the key challenges in this country. There is no clear system at hand to be used in dealing with learners who are disabled. Tertiary institutions of higher learning that are responsible for teacher education are failing to develop the curriculum that gives pre-service teachers the skills to deal with disabled learners. Both physically and intellectually disabled learners are still excluded from those who have the ability to learn in the normal setting. Tertiary institutions offer programmes that train pre-service

teachers to teach disabled learners separately. Programmes offered do not cater for or promote diversity in teaching and learning (Hincapié, Duryea & Hincapié, 2019).

De Fanelli (2019) questions the equity and equality of the system for admission of students to higher education. The system does not accommodate the diversity that comes with different learners. That alone is an obstacle to the transformation of higher education in the country. Most pre-service teachers come from urban-based secondary schools, and after their training, they reject offers of teaching in rural-based schools. That presents a burden to the state to find qualified teachers who can teach in rural-based schools while considering diversity.

In addition to the issue of diversity and equality, Furman, De Angelis, Dominguez Prost & Taylor (2019) reveal that integration of technology is not considered in the implementation of teacher education. This becomes apparent when teachers are expected to use technology when implementing curriculum at schools. Teachers still use the traditional approach, where teachers are doing most of the work in the process of teaching and learning. Use of technology requires a critical thinking approach, where learners are allowed to do things on their own. The curriculum for pre-service teachers of this country does not promote critical pedagogy at all. The researcher is of the view that the issue of language contributes to the challenge.

Spanish is the language commonly used to implement the curriculum for both basic and higher education in the country. Only one Spanish language is commonly used for implementing the curriculum for teacher education at tertiary institutions while in the country different Spanish languages are used from one region to another based on region. The Spanish language that is used for education is known as "*Rioplatense Spanish*". Most students are interested to comprehend the content of other subjects taught. The students are ignoring the significant fact that to comprehend the content of different subjects, it is important to understand the language of teaching and learning as well (Banegas, 2018:9).

Australia

According to Timms, Moyle, Weldon and Mitchell (2018), pre-service teachers' curriculum in Australia fails to supply schools with teachers that possess relevant skills and qualifications to implement curriculum at schools. Identified subjects that are short of qualified teachers are the following:

- Science;
- Technology;
- Engineering; and
- Mathematics.

Moreover, Ellis, Souto-Manning and Turvey (2019) confirm that contribution to evolution of teacher education in the country is confined within the state and officials of tertiary institutions. Basic education officials and teachers may identify problems for teacher education that contribute negatively to schools, but their views are suppressed. The problem of poor supply of teachers with scarce skills by the tertiary institutions cannot be overcome when there is persistence in suppressing the views of basic education officials and teachers. Poor coordination between the tertiary institution and schools results from the uncollaborative structure of policies.

In addition to the poor communication between tertiary institutions and schools, Cavanagh, Barr, Moloney, Lane, Hay and Chu (2019) point out that during teaching practice, pre-service teachers are unskilled to identify the appropriate strategies and methodology to be used in the implementation of curriculum at schools. Designing a lesson plan is also a challenge to pre-service teachers. That alone shows that students are not ready to implement curriculum at schools. It is the responsibility of the tertiary institutions to shape the pre-service teacher's skills of identifying appropriate strategies for teaching and for designing a lesson plan.

Brazil

The country was colonised by Portugal. Since the country gained its democracy after more than 190 years, it is still failing to identify an education system that is relevant for citizens. Most of the people in the country use Portuguese to communicate. English is one of the rejected subjects even in public schools. The huge factor that is affecting teacher education is the language used in print. Most of the printed study material used for information is dominated by English print. Many academics and pre-service teachers find it difficult to do research and other academic work. It is argued that the challenge of print which is in English does not only affect the training of prospective teachers, but it also affects basic education. Pre-service teachers are expected to transfer knowledge to learners at schools, which is difficult with the challenge of printed texts that are used at hand (Windle & Muniz, 2018).

However, the evolution of education in general reveals that there is a shift from print to digital technologies. Digital technology comes with its own set of challenges in countries that are still developing such as Brazil. Alfaki and Khamis (2018) state that learners understand technology better than their teachers do. One can argue that the old teachers in the system are the ones who have problems with the use of technology. The concern is raised that there is no clear training programme for technology training at the tertiary institutions that are responsible for training teachers. Additionally, language is identified as a barrier for comprehending the use of technology easily. Most of the technological software available for use is in English, and some of the teachers are using English as their third language of communication. Mostly in Brazil the Portuguese language is used for teaching and learning.

Modelski, Giraffa and Casartelli (2019) point out that the country is trying to adopt an education strategy that integrates curriculum with technology while it is not clear how technology may be integrated. There is no policy or any document as yet developed that informs the inclusion of technology in teacher education. Academics decide as individuals on how to use technology in implementing the pre-service teachers' curriculum. Most of the academics do not want to default from the traditional approach

to pedagogy where printed text is used while education is still embedded in a language that is not dominant in printed texts.

Beside many challenges confronting the Brazilian teacher education, Flores (2018:621) views integration of basic research as the lacking component in pre-service teachers' curriculum. Pre-service teachers do not regard their learning as their responsibility. In addition, it is argued that some of the challenges encountered during teaching practice are caused by a lack of basic research skills by pre-service teachers. Research is not a pertinent branch of initial teacher education: It is only there as a necessary but inconvenient part of the whole programme that is designed for pre-service teachers.

Canada

Canadian schools are supplied with novice teachers who cannot identify strategies that can be used for subjects of their specialisation. Tertiary institutions must account for this they are responsible to train pre-service teachers. Teacher educators commonly train students in identifying a strategy that they may use when teaching. Training is based on their subject of specialisation. Students are only trained on content in their subject of specialisation. Therefore, it may be argued that novice teachers may be good in the content of their subject but very poor when it comes to the implementation of the curriculum at school (McIntosh, 2015)

On the other hand, Danyluk, Luhanga, Gwekwerere, MacEwan and Larocque (2015) raise the significant issue about the weak relationship between universities (academics) and schools (mentors). Expectations held by academics of mentors to students during teaching practice are not documented to reach the hands of mentors. Likewise, the experiences of mentors are not documented either as a strategy to report back to academics on weaknesses of pre-service teachers which may have been identified during teaching practice. Students are merely reported to academics to be underperforming. The arrangement of teaching practice is to be blamed for this, and

academics are responsible to strengthen or design a strategy that fills up these gaps in teaching practice.

Lund and Lianne (2015) move on to identify a common challenge when service learning is implemented. Pre-service teachers are not exposed to the cultural diversity of learners and society at large that they may face during their service. Pre-service teachers find it as hard to deal with diversity when they are in service learning than when they are in teaching practice. Period of service learning is longer than the period of teaching practice. Longer period of service learning comes with more responsibilities to students. Understanding the community that they are serving is one of the hardest responsibilities, especially as pre-service teachers' curriculum does not expose them to include a cultural diversity.

McCrimmon (2015) agrees by pointing out that the country has adopted a system that promotes inclusive education for pre-service teachers' programmes. The challenge is that it is difficult for the country to implement the system of inclusive education in classroom at schools. The country has gone far to introduce the special programme on inclusive education; that programme complements the four-year programmes designed for teacher education. Sadly, the system is still struggling to produce positive results on inclusive education. Furthermore, Wilson, Sokal and Woloshyn (2018) state that inclusive education does not only affect students on learning in classroom, but it also affects many of those students who are disabled when they go for teaching practice. Most of the schools do not have a friendly infrastructure to disabled people.

China

Qin and Villarreal (2018) raise issues of dedication and motivation from pre-service teachers while they are in teaching practice. In raising these issues, comparison is drawn between pre-service teachers based in urban and rural schools. Students based at urban schools are more motivated and dedicated to their practice, but pre-service teachers who are based in rural schools are less motivated and dedicated in attaining different experiences. Reasons to all these, are that schools that are urban-

based have better-organised facilities compared to those schools which are rural-based. Urban-based pre-service teachers are motivated to use the available facilities to teaching, and that positively motivates them. On the other hand, rural-based students struggle due to the unavailability of basic resources to teaching.

Beside the lack of dedication and motivation from rural-based pre-service teachers, due to the lack of facilities in schools, pre-service teachers who are rural-based do not receive the expected mentoring from teachers of the rural schools where they are placed. That affects the process of assessing teaching practice students, and academics find it difficult to give feedback on teaching practice of students (Teng, 2017). Ye (2016) argues that even in urban-based schools where mentoring is not taken seriously, teaching diversity is considered a challenge. The challenge is not only identified with the teaching practice, but is also identified with the teacher education programmes. Inclusivity is not well integrated in programmes of preparing pre-service teachers. It is very difficult for students to handle this while they are trying to find their identity for their future betterment (Attaran & Yishuai, 2018).

However, Lu and Chang (2018) state that issues and challenges discovered while students are in teaching practice are the result of poor communication, collaboration and relationship in general between schools, colleges or universities that are responsible for training pre-service teachers. Challenges do not develop from teaching practice, but are developed by the manner in which preparation for teaching practice are handled. Appropriate strategies to teaching practice are not well institutionalised. Kayange and Msiska (2016) argue that the country is moving faster to overcome challenges that come with the evolution in education. Evolution that is embedded in the literacy of technology is a major challenge for both basic and higher education.

Germany

Teacher education in the country includes an electronic portfolio that must be compiled by pre-service teachers before attainment of their qualification. It is noted that previously students were suffering from anxiety when they had to use computers to

compile their portfolios. Current issues develop from a lack of research skills and understanding of new computer software for new pre-service teachers (Miesera, De Vries, Jungjohann & Gebhardt, (2019). On the other hand, a recent study reveals that is difficult for pre-service teachers to balance the core skills of mastering the language: a student may be good at content knowledge, but found poor at pedagogical knowledge, or an opposite of that (Lehmann, Rott & Schmidt-Borcherding, 2019:99).

The attitude from both pre-service and in-service teachers about learners who experience difficulties in learning is an obstacle to implement an inclusive curriculum at schools. It is very difficult to identify the practical part of inclusive education for pre-service teachers while they are learning at university. Students get to experience this when they are placed in different schools for teaching practice. In the process, mentors are expected to assist students in developing an understanding of involving learners who experience difficulties. Instead, pre-service teachers often find that mentors have negative attitude about these learners. Therefore, pre-service teachers are mentored to develop the same attitude towards learners (Krischler & Pit-ten Cate, 2019).

India

Pre-service teachers at the rural-based universities are struggling to take accountability for their education. It is up to the academics to enforce a culture of learning through technology. Designed teacher education programmes do not impose the use of technology to pre-service teachers (Sharma, 2014). Furthermore, the issue of access to technology at rural-based universities result in poor quality of education and it is difficult to trace the progress of reform in teacher education. This situation is also caused by the fragile governance in developing countries in which teacher education is under reform (Khan, Fauzee, & Daud, 2016).

Technology does not go alone; suitable and well-structured infrastructure needs to be incorporated. Chand (2015) reveals that in countries where education is under reconstruction, infrastructure is the main challenge. In some tertiary institutions the learning space is not enough to cater for teacher education. In these cases, authorities

may opt for renting the buildings for training pre-service teachers. The researcher is of the view that in countries where there is no proper and available infrastructure on a stable basis, the quality of education is compromised. For teaching methods, practical activities and demonstrations, enough space is required for it to be done correctly. Imam (2011) agrees that in the era where evolution in technology is moving faster, more funds are needed for teacher education. The next generation that will join the teaching fraternity has to deal with an even faster evolution in technology. The issue of infrastructure and resources in incorporation of technology cannot be ignored either. Rural-based universities are the most affected as it is difficult for them to get private funders. Their dependence is solely government to provide funds.

Moreover, government took a decision to make information technology a compulsory module across teacher education. The infrastructure, computers, and other tools required for teaching information technology are not available at these universities. Pre-service teachers are only taught the theory part of information technology, which hinders the quality of education (Ahmed, 2012). Although India is investing a lot in education, the country is still affected by many challenges such as *"lack of access to education; poor quality of education; weak governance; budget constraint; lack of library, lack of laboratory; lack of motivation; and lack of infrastructure*" (Khan *et al*. 2016:1). Ahmad (2015) concurs with Shah, Das, Desai and Tiwari (2016) that challenges do not only affect the mainstream education. Inclusive education, whereby learners with disabilities must be well supported with suitable resources and infrastructure, also suffers. In the case of this country, that is the huge challenge to be overcome.

Alongside the technology, teacher education in India is under reform, and research in education is largely ignored. Academics are not motivated to integrate research; government and tertiary institutions do not have clear and strong policies on research, generally. Teacher education is hindered by that and challenges which are affecting the training of pre-service teachers are known, but there is no documented or collected scientific information in place (Chand, 2015). The researcher is of the view that for any tertiary institution, research is a pillar of strength to deal with both academic and

administrative challenges and issues. Decisions taken should be informed by researched information.

Tiwari (2016:29) summarises challenges facing teacher education in India as follows: identifying challenges; overloaded content compared to duration of programmes; unqualified academics; standardised curriculum or lack of flexibility; teaching practice that lacks authenticity; lack of advanced teaching strategies; exclusion of relevant stakeholders; lack of appropriate basic education; lack of suitable infrastructure; lack of a module that teaches professionalism; deficient financial sponsors or bursaries; and lastly, the deficiency of a strategy of gaining an identity.

Indonesia

Ansyari (2018) states that instructional planning involves many elements that are taken into consideration. Academics are facing difficulties when they have to give clear a strategy to pre-service teachers on how to fit in every element such as content, assessment, questions and feedback in one lesson. Appropriate instructional planning is emphasised by academics, but it is difficult for them to provide the structure of appropriate instructional planning. Pre-service teachers encounter this as a challenge when they have to plan for their lessons during teaching practice. That challenge becomes a burden to mentors as well who are responsible of guiding students.

Ulla (2017) and Abid (2019) agree that use of the English language also contributes to challenges that affect pre-service teachers in the country, although this goes back a long way and affects students when they select English as one of their main subjects. Background and basic education of pre-service teachers are identified as some of the contributing factors. Teachers who are responsible for teaching English at schools are neither confident nor proficient to do so. Similarly, the academics who implement pre-service teachers' curriculum are not proficient or confident in using English either. Additionally, Faridah, Arismunandar and Bernard (2017) together with Iqbal (2017) state that lack of confidence from mentors at schools drives mentors to a point where they find it difficult to give productive feedback that may shape pre-service teachers in

future. The fact of the matter is that mentors are not trained to mentor pre-service teachers; they use their thinking to guide students.

Zein (2016:119) claims that while the country expects to have quality when an English curriculum is implemented, the English curriculum is only implemented as “extra-curricular” in primary schools. The inefficiency is experienced when pre-service teachers are trained to implement curriculum at primary schools. Mudra (2018:319) reveals that the obstacles faced by the pre-service teachers involve “*classroom management, learning materials or resources, teaching aids or media, teaching methods, learners’ English skills, choice of language use, slow internet connectivity, learners' motivation, evaluation technique and parental support*”.

Japan

Lack of clear policy on English language make things difficult for academics who are responsible of preparing teachers for teaching language at schools. Breakdown in communicating decisions that are taken by the policy makers is one of the challenges of implementing an English language curriculum that is clear to everyone. Communication breakdown is caused by the exclusion of academics and teachers in designing and developing a policy on language (Glasgow, 2016). Underwood (2016) confirms that there are challenges regarding the implementing of an English language curriculum in the country. One of the factors that causes problems is that English is foreign in the country. Specialists of the English language are not imported when policy and curriculum are designed: That means policymakers and implementers are not clear about the English language (Machida & Walsh, 2015).

Beside the challenges that evolve from the policy on English language, pre-service teachers’ programmes do not address inclusive education. A strategy that can be used to address inclusive education is lacking. Academics in the country lack skills and experiences that can be used to implement pre-service teachers’ programmes that promote special education (Forlin, Kawai & Higuchi, 2015). Moberg, Muta, Korenaga,

Kuorelahti and Savolainen (2019) posit that teachers and pre-service teachers have a negative attitude towards learners who are living with disability.

Russia

Russia experiences challenges that evolve from the unavailability of sound policy on the English language. Policymakers are criticised for not developing material and suitable resources that may be used to reference when an English language curriculum is implemented. This affects both basic and higher education in the country (Raees, 2018). Baburkin, Talanov and Lymarev (2016) argue that the curriculum for pre-service teachers in general contradicts the vision that the government of the country has. Government has developed a long-term plan to solve anticipated challenges, whereas policy developers have designed a curriculum that addresses immediate challenges. Moreover, the curriculum designed may not prepare pre-service teachers sufficiently to implement curriculum changes in the future.

Due to contradictions between policies developed and ideology, Lukina and Volkova (2016) confirm that primary service teachers may not manage to identify themselves within the programme of which they are part. Challenges on identity are only noticed during the period of teaching practice. Lack of integration between theory and practice for pre-service teachers' programmes is identified as one of the contributing factors. Furthermore, Stukalenko (2016) states that there is a lack of individual approach to professionalism. Skills and competencies that are expected to be acquired may be part of the programme, but if a critical thinking approach from pre-service teachers is not addressed and achieved, that alone means there is a problem with the entire programme.

Saudi Arabia

Tertiary institutions that are offering teacher education also specialise in special and inclusive education. However, pre-service teachers are found incompetent in teaching learners that need special attention from teachers. Teacher education offered in these

institutions does not offer experiments for inclusive and special education (Alquraini & Rao, 2018); Al-Abdullatif, 2019). Alzahrani and Brigham (2017) are of the view that it is not as bad as one may think for programmes that are taught in tertiary institutions for pre-service teachers. The part that needs to be made sound is accountability for all tertiary institutions that offer special education to pre-service teachers.

For Saudi Arabia as all other developing countries, technology is new in their education system. In their pilot of integrating technology in their system, they discovered challenges such as unavailability of internet at some of the schools and homes. Financial constrains cannot be side-lined as one of the major factors that make it difficult to integrate technology in education system. Teachers that are not competent in using technology are expected to use it in teaching and learning of learners (Al-Zahrani, 2015; Alahmari & Kyei-Blankson, 2016). Additionally, Alzahrani (2017) posits that pre-service teachers' programmes do not equip pre-service teachers with the skills of using technology. Academics that are expected to equip pre-service teachers with technology skills also need to be sharpened with regard to the same skills.

South Korea

Ra, Chin and Lim (2016) identify a shortage of relevant and suitable infrastructure to ICT education as an obstacle to implement ICT education in the country. Due to the financial instability of the country, it is difficulty to supply resources to all higher education institutions that are willing to implement ICT education. Still, there are those higher education institutions that are ready to implement ICT for teacher education. There are few schools that have suitable facilities to accommodate students for teaching practice.

Since South Korea joined other Asian countries in adopting English as a language for instruction and communication, challenges are multiplying instead of going down. Indeed, challenges were identified with hopes that many would be turned to opportunities, but policymakers and academics that are not proficient in English are costing the entire programme. Proficiency in English is not only a challenge, but also

unavailability of structures that can support the idea is a compromising factor (Williams, 2015). Additionally, Moodie and Feryok (2015) emphasise that there is a shortage of academics that commit themselves to the idea of designing and implementing an English curriculum. This fact precludes the possibility that the people of South Korea may be easily adapted into it.

Therefore, De Waelsche (2015) is of the idea that the English language poses serious problems for students at both tertiary institutions and schools. It is difficult to apply the recommended methods for modern teaching and learning such as student-centred and critical pedagogy. Students find it difficult to comprehend questions and instructions that are in English and they are always hoping for second guidance from academics or teachers.

Turkey

Petek & Bedir (2018:56) reveal that pre-service teachers are not equipped with the skills of using critical thinking in language of education. This is a significant issue that needs to be integrated into any programme for pre-service teachers at tertiary level of education. Erbaş (2019) points to multiculturalism as one of the reasons that make things difficult for academics in equipping students with language. Recently the country is more diverse than before.

Beside the challenges that develop from language, Gürbüz, Töman, Aksoy and Çimer (2013) state that there is a shortage of research papers that can help to discover new methods and strategies to implement teacher education programmes. Research in education does not ascertain methods and strategies that can be used by both pre-service teachers and in-service teachers during their teaching in different subjects of specialisation. The researcher has seen research in education as the most pertinent strategy to reveal strategies that make teaching and learning a participatory process, where everyone gets an opportunity to contribute.

United Kingdom

Burden and Hopkins (2017) identify barriers and challenges that pre-service teachers encounter when flexible technology is used to prepare them for implementing curriculum at schools. Infrastructure that supports the use of flexible technology is not suitable. Infrastructure is too old and was designed to use fixed tools of technology. Availability of efficient support from academics is very limited and formal training to support pre-service teachers is not offered. Unavailability of academics that can assist pre-service teachers to use flexible technology is a main concern for the country. Infrastructure of the schools where pre-service teachers are expected to put this into practice is a disturbing factor. Some the schools lack facilities as well as devices that must be used in the process of teaching and learning. Schools that are in possession of devices are failing to keep devices in good condition. In general, this affects the teaching practice of pre-service teachers.

Furthermore, Sentance and Csizmadia (2017) state that there is a gap in the use of technology between schools and universities. Students are expected to enrol in any programme at university with sufficient basic skills of using technology. However, not all learners at schools are taught computing skills. Computer is taught only to those learners who choose computer as one of their subjects. Simultaneously, the university expects that all learners are in possession of basic computing skills. Additionally, computer is offered as an extra-curricular to those learners who do not choose it as one of their subjects. The negative factor to this is time that is limited to subjects that fit in the mainstream.

Despite computing and ICT, Mag, Sinfield and Burns (2017) reveal that challenges experienced during the implementation of education that is inclusive are not yet overcome. There is a lot when it comes to literature that gives positive recommendations on inclusive education, but there are obstacles when it comes to the implementation part of teacher education that involves inclusive programmes. The most affected students are those who are disabled and those who are identified as at-risk for their education. Some of the universities do not have appropriate infrastructure for students that are living with disabilities. They also do not have programmes that

assist students who are classified as at-risk. These two main challenges contribute to increase numbers of drop-outs from universities.

United States of America

Wu and Guerra (2017) emphasise the pertinent fact that the government of the United States is expected to serve different people with quality education. Those people are coming from many backgrounds which are totally different around the country. They also possess different beliefs when it comes to education. Teachers are expected to implement quality education at all cost and levels. Due to the assumption that everyone can speak English proficiently in the country, diversity in culture is deliberately ignored when a teacher education system is designed and developed.

King and Butler (2015) as well as Ateşkan (2016) remark that the issue of diversity cannot be ignored when addressing the challenges of teacher education. This reflects back to tertiary institutions that are responsible for teacher training when teachers are implementing curriculum for basic education. There are no clear strategies and approaches integrated with programmes of teacher education to address the issue of diversity. The researcher in this study views the issue of diversity as a broad and complex one to deal with if one had not been trained on strategies to approach the issue at hand. It depends on how one wants to approach an issue, it can involve the issue of inclusive education which is also difficult to handle on the levels of higher and basic education.

Apart from the issue of diversity, as many other countries, the United States of America is suffering from the challenge of information communication technology (ICT) which is not properly included at basic education. Previously, the issue was that most of the teachers were unskilled for using ICT at basic education. Currently, it is revealed that even novice teachers cannot handle the pressure that comes with the integration of ICT in the mainstream of basic education. As much as academics are using ICT to implement pre-service teachers' curriculum, the curriculum that is implemented does not adequately address the challenge of integrating ICT at schools (Kaufman, 2015).

However, the country is suffering from the shortage of qualified teachers in general. The output supplied by teacher education institutions is not enough. Rural regions are the most affected for the reason that qualified teachers are moving from those areas to urban areas where the schools' resources are adequate to assist in the implementation of curriculum (Darling-Hammond & Podolsky, 2019).

2.3.2 Challenges of preparing pre-service teachers in Africa

Botswana

Rudhumbu and Rudhumbu (2018:63) disclose that the country is still hampered by challenges that were revealed many years ago. A teacher that cannot handle large classes is among the problems. Teachers also do not possess competencies of using innovative strategies in hard conditions such as experience of large classes. Programmes that are designed to prepare pre-service teachers are identified as a contributing factor to this. Teachers produced are still incompetent to deal with challenges; instead, they stick to their traditional methods of teaching.

Additionally, Mangope and Mukhopadhyay (2015) point out unpreparedness of teachers in implementing inclusive education as another challenge that emanates from poor programmes that are offered to pre-service teachers. Some of the academics do not want to embrace the changes to address conditions created by the past. Thus, Mangope, Otukile-Mongwaketse, Dinama and Kuyini (2018) posit that pre-service teachers are experiencing difficulties when they teach learners that are under special needs programmes for inclusive education. This confirms that pre-service teachers are not skilled for implementing special education at schools.

Ethiopia

Gidalew and van den Berg (2018) reveal that some of the academics in the institutions of Ethiopia that are responsible for training pre-service teachers are mindful of strategies that they can teach to pre-service teachers, but surprisingly, they opt not to

use them. One of the factors to the challenge is the foreign language of implementing pre-service teachers' curriculum. Moreover, the issue of language affects the confidence of academics who are responsible for teacher education. This dispossesses pre-service teachers from the opportunity to become best teachers who can compete with other best teachers in the world.

The other important approach not recognised by institutions of higher learning to prepare pre-service teachers is a research-based approach. The culture of using this approach is not put into practice as teacher education programmes are not designed to promote a research-based approach (Barnes, *et al.* 2018).

Kenya

Developing curriculum is identified as one of the most challenging factors in the implementation of curriculum for teacher education. The sensitive part is that this factor reflects when the curriculum is in the implementation stage. Curriculum implementers are not consulted to provide input for curriculum development. That alone makes the life of academics who are part of implementation stage difficult. They need more time to understand the concepts and find strategies to implement new curriculum developed. Academics find themselves in a situation where they are not given enough time to understand developed curriculum. They are casually expected to do wonders as curriculum implementers (Okoth, 2016). Inter alia, Coleman and Mtshazi (2017) identify that burdened content and insufficient training of academic staff on strategies to implement new developed curriculum affect the whole programme of training such pre-service teachers who may possess appropriate skills to implement any curriculum at the level of basic education.

Nigeria

Igwe, Uzoka and Rufai (2012) reveal that pre-service teachers who are physically disabled are not integrated into the main stream of teacher education. Furthermore, infrastructure is the main cause to the challenge. Academics are also not prepared or

trained to work with pre-service teachers who are physically disabled. According to Noah, Oni and Dosunmu (2015), pre-service teachers in Nigeria are not prepared to compete globally. This is caused by the structure of programmes that are currently in place for teacher education in the country.

Furthermore, traditional methods of teaching in Nigeria are still used at this time where the fourth industrial revolution has arrived. In-service teachers are still optimistic of coping with the same methods that they have acquired long time ago. This is a result of teacher education that is not properly planned. If teacher education programmes were properly designed and developed, they would produce a teacher that managed to adapt with contemporary time and use fashionable methods of implementing curriculum at the basic level of education (Adeosun, 2012). In line with problems identified, Asiyai (2015) views the invitation of all stakeholders as a solution to brainstorm on possible solutions. Nonetheless, exclusion of stakeholders is experienced in all stages of curriculum development.

Irrespective of old methods used and exclusion of stakeholders, Abdullahi (2017) is of the view that most of the challenges in Nigeria are caused by the admission policy of students and recruitment policy of academics that are entrusted with preparing students. Qualifications and experience in the field of academics are in question, but all that develops from the poor recruitment policy which is different from one tertiary institution to another. Additionally, a common and strong policy on the admission of students and recruitment of academics that are responsible for teacher education would be an immediate solution. Cherechi (2018) argue that weak policies were designed and developed without a vision and future planning, and this is evidenced by many reforms that have happened for teacher education in the country.

Tanzania

According to Makunja (2016), exclusion of other stakeholders such as the Tanzanian department of basic education in the curriculum development stage hinders the implementation part of the curriculum. It is in the basic education department where

the implementation of curriculum takes place. This argument comes with the relevant point that specifically addresses the inclusion of mentors in the process of training pre-service teachers early in the development of their curriculum. Hence, Ndibalema (2019) notes the challenges that are experienced by school leaders during teaching practice as part of implementing pre-service teachers' curriculum. Unprofessional conduct that involves dishonesty, lack of commitment, disobeying the dress code, and excusing themselves from practice, are some of the issues raised and experienced.

The government in Tanzania managed to equip most of the schools with computer tools, but in-service teachers are avoiding those tools due to the fact that they are not equipped with the relevant skills to use them. While tertiary institutions are expected to equip pre-service teachers in using technology, instead, pre-service teachers lack proficiency in using computers and other technological tools. Current teacher education does not offer the development of relevant skills that suit the contemporary setting of teaching and learning at schools (Kafyulilo, Fisser, Pieters & Voogt, 2015). Kihoza, Zlotnikova, Bada and Kalegele (2016) agree that pre-service teachers lack computer skills, and that evolves from the unavailability of suitable support from the academics that implement teacher education. Additionally, Mtebe and Raphael (2017) posit that academics refuse to embrace the development of new technologies in teaching and learning.

Zambia

Banja and Mulenga (2019:171) identify teaching practice of pre-service teachers as one of the weakest links that compromises teacher education in Zambia. Moreover, content that is found in major subjects that are offered at university does not prepare students to teach at schools after they had obtained their qualifications. Outdated programmes of pre-service teachers also compromise the quality of education that is found at primary and secondary schools.

Besides, Chitiyo, Odongo, Itimu-Phiri, Muwana and Lipemba (2015) state that Zambia is one of the African countries that are missing out on the opportunity to implement

inclusive education. The situation is unlike other countries where all pre-service teachers get an opportunity to understand how to work with learners that require special attention. Proper planning and lack of suitable infrastructure are hindrances to success in implementing special education.

Zimbabwe

Mpofu and de Jager (2017) report that pre-service teachers who are not ready to implement curriculum in their first days of teaching agree that academics invest more time in the content part of the curriculum when training pre-service teachers. The part of equipping pre-service teachers with teaching strategies remains unaddressed. Most novice teachers struggle in choosing relevant strategies to implement curriculum at schools. According to Samkange (2015), teaching practice should assist students in testing their different approaches to lessons. However, this is suffocated by mentors that lack understanding of their responsibilities.

Moyo and Hadebe (2018) state that Zimbabwe's education system is still promoting the use of traditional approach for teaching and learning. The education system does not allow critical thinking by students. A student-centred approach is not used, and students are only prepared to achieve positive results in the final examination. Sithole and Mafa (2016) raise the pertinent issue that when the traditional approach is used it compromises students that need special attention. In general, the traditional approach does not accommodate inclusive education that needs innovative strategies to be well implemented for all levels of education. To this end, Chikwature, Oyedele and Ntini (2016) remark that there is no policy that assists academics and teachers to implement inclusive education.

Despite content that is outdated, Chaamwe (2017) points out that the government of Zimbabwe tried to review curriculum for basic education by introducing ICT. The curriculum was meant to be rolled out in 2013. A shortage of proficient teachers for ICT was one of the challenges that hindered the success of the programme. Improper planning is identified as main cause of failure in this regard. The new curriculum could

not be successful without proper investment in teacher education for ICT education to be implemented in future.

Shadreck (2015) agrees and indicates the importance of integrating ICT in teaching and learning of pre-service teachers. There are challenges that hinder that integration, which developed from a lack of funds that produces a shortage of appropriate infrastructure for ICT. Therefore, pre-service teachers do not get the opportunity of being skilled in using technology. This is evidenced when pre-service teachers are employed after completing their studies. Subsequently, Bishi, Bishi and van Stam (2016) identify tertiary institutions that are rural-based as the institutions most affected by the lack of ICT infrastructure. The idea emanates from the fact that when the private sector decides to sponsor they only focus on urban-based institutions.

2.3.3 South African challenges in preparing pre-service teachers

Technology is the most common factor to be used in the implementation of any curriculum currently, be it higher education or secondary education. Koc and Bakir (2010:19-20) claim that pre-service teachers are not effectively skilled in achieving effective technology incorporation. Technology is frustrating to use when suitable support is not provided. This indicates a further need for training of pre-service teachers at the early stage of teacher education. Training must be integrated in the whole curriculum rather than being offered as a standalone project to pre-service teachers. The issue of quality education is important according to the study done by Ambag (2015). Learners expect teachers who are competent and knowledgeable to teach subjects. Competence is shown in the effective application of methodologies, strategies and resources to deliver the matter. Integration of technology in the implementation of curriculum by teachers also reveals the competence of subject teachers. Teacher education programmes should produce teacher educators who are proficient to meet the required competency.

Dynamic technological developments exert a powerful influence on teachers' education. With the new emerging technology occurring at a rapid rate, it has become crucial to pay attention to train teachers and equip them with the needed technological skills so that they can communicate effectively with the digitally oriented community (Woldab, 2014:159). Beyerbach, Walsh and Vannatta (2001:125) agree that pre-service teachers should hone their software application skills to be able to contribute while technologically integrated materials. Area administrators and teachers can assist in the promotion of technological skills that are required for the first-year teachers to come up with stimulating course topics. Koc (2005:13) reveals, however, that the benefits of technology incorporation do not happen simply because the technology has been provided; similarly, technology without teachers who are knowledgeable in using it and understanding of curriculum objectives cannot be effective in the classroom.

Mabusela and Adams (2017:10221) reveal that academics in rural universities may be equipped with the skills of using technology, but if pre-service teachers who should respond to the implementation of curriculum do not have skills of using technology, that alone affects the whole process of implementing pre-service teachers' curriculum. Many pre-service teachers struggle to use branches of technology such as e-mail that limit pre-service teachers to communicate with academics easily. Maphalala and Mpofu (2018) concur that while modern technology dominates in the implementation of pre-service teachers' curriculum, there is no system in place to support academics with the strategies and skills of using this modern system. Moreover, access to the infrastructure that should support the use of technology for both academics and pre-service teachers is limited to those who are residing on university premises. The large number of pre-service teachers who have been accepted to the programme of teacher education cannot be ignored as one of the factors that hinders the smooth access to internet for pre-service teachers. There are many pre-service teachers who do not have access to internet at their place of residence.

The current arrangement of the South African curriculum for basic education promotes the use of technology. The Curriculum and Assessment Policy Statements (CAPS)

came into place to decrease the burden of paperwork that was carried by teachers. Recording and submission of marks for continuous assessment is done through a technologically integrated system. In rural-based universities this is not addressed due to the lack of infrastructure and strategies for its incorporation to the teacher education programmes. Pre-service teachers are still introduced to the old system of having paperwork instead of technology (Kola, 2017). Petersen (2017) asserts that novice teachers who have not been introduced to the correct system of planning for a lesson while they were at the tertiary institution find it difficult to cope with the changes that come with new curriculum at hand. Novice teachers find it even more difficult if they are in the schools where there is no structure that supports and introduce them to the setup of real practice.

Flores (2015:1) emphasises that pre-service teachers lack the confidence, necessary skills and theoretical background to teach effectively in contact sessions in class. Practical teaching should be prioritised to acquire adequate skills and values needed in service. Masari and Petrovici (2014: 26) reveal an essential part of shifting from the planned curriculum by implementing some inventive directives for pre-service teacher education. Students need to acquire knowledge and the required pedagogical content knowledge. Govender (2015); Karvonen, Tainio and Routarinne (2018) argue that the curriculum of teacher education must not only focus on pedagogical content knowledge, but must also deal with the strategies of creating and using materials in implementing curriculum in schools. Pre-service teachers must be taught how to implement the curriculum without only using textbooks. Using only the textbook is one of the traditional strategies prior to the introduction of technology to implement curriculum in schools.

Owu-Ewie (2008:173) argues that to develop pre-service teachers' learning, quality materials and strategies to use materials must be developed as well. Developed materials and strategies must be drawn on to construct knowledge of pre-service teachers. There is a gap between curriculum objectives and materials that are used to prepare for teaching and learning as a process. Furthermore, there is a need to train

pre-service teachers that will be innovative and independent thinkers to develop materials that will meet the standard of curriculum objectives.

Although effort may be invested in producing innovative pre-service teachers, large and overcrowded lecture halls affect the implementation of teacher education in many ways. Some of the class activities need more supervision from academics, such as activities that need laboratories to be performed (Mamutse 2016). Furthermore, Mamutse (2016) affirms that the language of instruction in most of the South African universities is English. Pre-service teachers who are mostly found in rural-based universities are those who have matriculated with English language as an additional language. The biggest challenge comes with an unavailability of strategies to train pre-service teachers who have challenges with their English ability to teach learners in polyglot classroom (Essien, 2010). The researcher is of the view that English as a language cannot be given more focus than the issue of diversity which dominates in South African schools.

Sosibo (2013) points out that there is no structure that guides both the levels of higher education and basic education. Academics are struggling to train pre-service teachers on how to deal with a classroom of learners who come from different families possessing different backgrounds and cultures. The South African institution of higher learning battles with the issue of diversity because diversity may come from a language, culture, disability, background, and geographic aspects. Maphalala and Mpofu (2018 disclose another perspective that is caused by the diversity that the teacher education has to address: There are no guidelines or framework to design or develop strategies of planting and integrating the concept of *morals* and *respect* into the curriculum. This is also caused by the diversity that comes with the different cultures and backgrounds of learners. It is difficult for academics to train pre-service teachers on how to integrate morals to the mainstream curriculum. On the other hand, Le Grange (2002) identifies challenges on integrating the indigenous system in the mainstream curriculum on school level for learners across the South African basic education. The main challenge is to find a strategy that can be used to implement

curriculum that includes the indigenous system in the country that has many and different people in terms of ethnicity.

2.4 SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS' CHALLENGES ON TRANSITION FROM BASIC EDUCATION TO HIGHER EDUCATION FOR PRE-SERVICE TEACHERS

There is a huge gap between basic and higher education. This gap is noticed and observed when students struggle with how the curriculum for pre-service teachers is implemented. Any curriculum that is implemented at university requires many skills to be acquired by students in their basic education, such as basic knowledge of computers and technology. There are many secondary schools with only one computer that is used by the administration clerks of those schools. That alone reveals how big the gap is between schools and universities. Pre-service teachers are expected to quickly adapt to the university environment, which is very difficult. The gap that comes with technology really affects the implementation of pre-service teachers' curriculum (Heydenrych, 2007). Van Tonder and Williams (2009) reveal the other side of the challenge, namely that not all secondary schools do not have computers at all, or they do not have enough computers for all learners in those secondary schools. A "one learner, one computer" approach cannot be adopted in those schools. They lack a strategy on how they can teach the basic skills of using a computer to all learners. That alone is enough to conclude that most schools are faced with a huge challenge when it comes to the strategy of implementing curriculum using the research-based approach.

The research-based approach of implementing curriculum for pre-service teachers is identified as important to instil critical thinking. The Department of Basic Education (DBE) (2011a) also promotes the use of a critical thinking based approach to implement the curriculum across all the subjects offered at the basic education level. Bakare (2017) asserts that the basic education of any country has an important part to play in nourishing teacher education to improve quality of basic education of the same country. A research-based approach that is not well implemented at basic

education due to constraints such as limited tangible resources and a shortage of human resource adversely affects higher education. Academics expect to receive students who are capable to apply critical thinking based on researched information, but his does not happen.

Wang, Tello, De la Vina and Slate (2009) argue that most teachers at secondary schools are reluctant to divorce the traditional approach that they had used for teaching and learning. Students find it difficult at university where working independently is promoted by the student-centred approach. This is not the only challenge that directly affects the implementation of a pre-service teachers' curriculum at tertiary institutions. A wider gap exists between the content of the subjects that are offered at secondary schools and subjects that are offered at universities. Moreover, students at universities live independent from their parents. Many students find it difficult as well to adapt to their independence and the concomitant responsibilities. Maila and Ross (2018) raise significant facts that most rural schools do not give appropriate career guidance to learners while they are at the early stage of secondary school. They choose careers predominantly according to their parents' desires. The universities also do not give academic support when they are first-year students in an attempt to bridge the gap that is created by the constraints of the basic education environment.

On the other hand, learners are admitted to enrol for teacher education programmes while they have scored less than (50%) in some of their subjects in matric. This deficit of passing requirements gives pre-service teachers a hard time to adapt because to pass a module at university one needs to score (50%) upwards. According to the DBE (2011b), to get a bachelor pass which is the requirement to be admitted at any South African university, a learner must obtain his or her matric with no less than (30%) for two subjects. In those subjects, one may be a subject of teaching and learning, which normally is English first additional language. That shows how heavy the burden for pre-service teachers is to score (50%) or more which is a pass mark at tertiary institutions. The language of teaching and learning is a challenge that affects almost all first-year students, as remarked by Owen-Smith (2010) who avers that the main

challenge for South Africa students who are coming from disadvantaged and rural places is the language barrier. Many of them do not have the confidence to express and communicate ideas in English. This severely affects them as pre-service teachers because in most universities, English is used as the language of teaching and learning. Basic education should be blamed for that; there is so much scientific literature available for solutions but nothing has been done to overcome the challenge.

2.5 SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS' CHALLENGES IN ASSESSMENT OF PRE-SERVICE TEACHERS

Transformation and decolonisation of assessment of teacher education are some of the factors that challenge the South African higher education institutions. Features such as time allocation for assessment were used under the apartheid government. It was also used to colonise assessment as a responsibility that one had to finish in a specific and allocated time. This remains a curse to the transformed and decolonised teacher education (Mahlomaholo & Payi, 2017). A colonised kind of assessment gives pre-service teachers so many challenges when they have to answer questions which are rated as difficult. Ndlovu and Brijlall (2015) point out that most students do not have any challenge to answer questions that need their analysing skill, but they find it difficult to answer questions that need their interpreting skill. It sounds very unfortunate that some students who will be teachers in the future cannot answer questions that require reasoning. The same students will be expected to teach and assess learners in the future. To be an assessor is one of the teacher's roles, and an assessor is expected to produce an assessment that is well balanced. A balanced assessment does not only include low order, but also involves average order and high order questions. Ngwaru (2013) argues that most pre-service teachers need more time to be spent on equipping them with skills on instructional strategies. They do not know how to manage activities that are done in groups. Support to pre-service teachers is inadequate to enhance their ability of implementing a primary or high school curriculum.

Munroe, Foran, MacLeod, Graham, Lunney-Borden and Curry (2012) affirm that there are many types of assessments that pre-service teachers may be introduced to, but there are factors that limit academics to put that into practice. Most strategies of assessment need a small number of pre-service teaches for suitable implementation. Infrastructure that will allow free movement to create small groups to work with them is also an issue for a satisfactory implementation of relevant assessment strategies. Another strategy to assessment of pre-service teachers is research-based training, but it is very difficult to implement in the rural-based universities due to the large class size, limited time and resources. Bezuidenhout and Alt (2011) agree that due to large class sizes at most rural universities, integration of formative assessment is a great concern in teacher education. The focus is mostly on summative assessments such as assignment, presentation, test and examination, that encourage students to memorise information. It is difficult to practise formative assessment while they are at school during their practice. Moreover, the summative assessment that they write does not address all the levels of thinking. Pre-service teachers are only taught in the way in which they are assessed. Assessment does not test the skill of solving problems.

Olivier and Carstens (2018) reveal that the problem of assessing critical thinking irons itself out in most cases when an individual enrols for postgraduate degrees such as Master's and Doctoral, where one needs to voice out one's ideology on the issue at hand. The issue on how pre-service teachers are assessed does not only affect pre-service teachers when they are at schools as novice teachers, but they are still affected when they have to use their academic writing skills.

The shift of focus on approach or strategy that is used for teaching and learning has come with challenges to pedagogy as a whole. The strategy to implement any curriculum previously was content based, and now the focus is on a student centred approach. Most pre-service teachers start their teaching career unaware how to integrate a student-centred approach with instruction. Furthermore, Marx (2011) states that policy on assessment of pre-service teachers, if available, is not clear on how cognitive levels should be addressed. This is different from what is happening with basic education where it is stated in percentages in all subjects how the cognitive

levels should be covered for all types of assessment (formative and summative). This gives pre-service teachers a hard time when they enter service as novice teachers. Most academics use their experiences when it comes to the assessment of pre-service teachers. They do not use any prescribed protocol for assessment as is done at basic education.

Gopal and Stears (2007) maintain that academics try to prepare pre-service teachers to make sure that they are ready for all challenges that they face at schools. This comes out when pre-service teachers are in practice at schools as student teachers or novice teachers. Challenges are observed when they are assessing learners that had not been exposed to different strategies of assessment. Pre-service teachers cannot use an alternative strategy if the learners fail to adapt to the strategy of assessment. Class sizes and infrastructure emerge again as a problem to implement strategies that can assist in the smooth integration of any model of assessment that is suggested. Friedrich-Nel, Nel and De Jager (2005) agree that using an assessment model does not always produce the expected result. The diversity of pre-service teachers may drive the assessment model to a position where the assessment tools were not intended to. Information technology may be integrated when the model is used, although suitable infrastructure is probably not available at many rural universities.

In all programmes of teacher education there are modules that address the issue of inclusive education. In those modules, pre-service teachers are taught how to identify and handle diverse learners during the teaching and learning process. It is observed that pre-service teachers are not skilled on how to assess learners when inclusive education is implemented (Walton & Rusznyak, 2016). Bayaga and Wadesango (2013) emphasise that whenever assessment is developed, suitable material needs to be considered. Academics must consider the condition in which they are implementing that particular assessment. Material may include many things, such as appropriate lecture halls that may suit a particular style of assessment (group work in classroom) and equipment that is used for technology.

Nel (2011) posits that universities that have teacher education programmes do not regard reading and comprehension as a serious and important issue. Pre-service teachers are not appropriately taught and assessed in reading and comprehension skills. Aligning reading and comprehension activities with outcomes to be achieved at the end of lesson is lacking and a common challenge at schools. In-service teachers cannot handle this challenge; they rather switch to another aspect of their subject. The problem of reading and comprehension is not only encountered in teaching and learning of language, it is also found in content subjects. Reading and comprehending of a question is important to all subjects before a question is answered. If the ability of reading and comprehension is defunct for pre-service teachers, that alone leaves all levels of education in disaster.

On the other hand, measuring the ability in reading and comprehension for learners at schools gives pre-service teachers a sleepless night. Lacking the ability to design a model that can be used to measure comprehension after reading dominates the process of teaching and learning. Teacher education programmes offered at tertiary institutions do not prepare preservice teachers to design a tool that can be used to measure reading and comprehension ability. This affects pre-service teachers even after they had been employed as teachers. They use their experience to overcome this challenge in the absence of an appropriate tool or model (Klapwijk, 2013). Hibbert (2018) stresses that even if some of the academic staff develop tools or models that can assist in dealing with reading and comprehension for pre-service teachers, resistance sets them back. They believe in using traditional methods of teaching and assessing reading and comprehension skills.

Reading and comprehension should be integrated with the skill of writing, although Du Preez and Fossey (2012) point out that the academic writing skill is not addressed as it is done with reading and comprehension in all programmes to prepare pre-service teachers to implement curriculum at schools. The writing skill goes hand-in-hand with the research skill. The research skill is not appropriately addressed in teacher education programmes. In cases where both academic writing and research skills are inappropriately addressed, assessment of these skills is not appropriately covered for

pre-service teachers. The fact of the matter is that academic writing and research skills are needed in all modules that are part of pre-service teachers' programmes. This gives all academics a headache because academic writing takes place almost every day in the implementation of teacher education programmes. This happens, although assessment of academic writing skill cannot be done in all modules.

Formative assessment is largely ignored by the tertiary institutions where pre-service teachers' curriculum is implemented. The focus is on summative assessment due to many constraints such as infrastructure and large classes. As much as summative assessment has its place, the marking tool used can compromise the validity and reliability of the task. According to Simpson and McKay (2013), lack of discussion between academics and pre-service teachers of the rubric that is used for marking before the task is written by pre-service teachers is problematic. The rubric must not be concealed from pre-service teachers as a marking tool so that they understand what is needed of them before the answer specific questions from the task are given to them. Moreover, McKenna (2007) indicates that rubrics do not only present academics as assessors and pre-service teachers a challenge. It is also a challenge for moderators and external examiners when they have to determine the validity and reliability of the rubrics. It is also observed that there is always debate between assessors and moderators when it comes to allocation of marks using a rubric.

Lombard (2011) argues that rubrics should not only be used before and during assessment, but it must also be used when academics provide feedback about the assessment to pre-service teachers. Using a rubric in the preparation of pre-service teachers lacks practicability. Universities are known for being conducive when it comes to giving feedback on assessment to students. Besides, a rubric does not fit in when assessment is used for learning. It only works when assessment is used for rating and scoring students. It is clear that at universities where pre-service teachers are prepared for teaching, a rubric is mostly used when there is assessment, but as part of teaching what assessment in education constitutes, pre-service teachers must themselves be taught how to design rubric. That part of knowing how to design a rubric

lacks practicability as well. It comes out when pre-service teachers are at schools for teaching practice.

2.6 SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS' CHALLENGES IN TEACHING PRACTICE OF PRE-SERVICE TEACHERS

Lee, Nelson, Auffant and Perveiler (2018) identify that teacher education programmes are not designed to produce teachers who are ready to deliver the curriculum, because of many challenges from different areas. They need more years of experience to adapt to the rural-based schools and they may find it easier to teach at the urban schools. Another challenge develops from the relationship between institutions of higher learning and partner schools where pre-service teachers are placed for practical teaching. In-service teachers are trained to mentor the pre-service teachers and they are not familiar with the expectations of HEIs. Ellis (2016:368) posits that some of the challenges regarding the relationships between schools and universities stem from the expectation that schools become incubators for teacher educators to learn. There is also a lack of professional development within teacher education programmes that are expected to provide pre-service teachers with ideas, knowledge and skills. The expectation is that once these students are employed after completion of their studies, they will enlighten others and be able to mentor and coach other young student teachers who are placed in their schools for teaching experience. There is also a challenge to identify the period where teachers become professionals.

Dlamini (2018) reveals that the teacher education curriculum does not expose pre-service teachers to teach in rural and under-resourced schools after completion of their studies. Teacher education programmes do not address the programmes of basic education; this develops from scanty collaboration between institutions of higher education and schools to formulate a memorandum of understanding (MoU). An understanding of initial pre-service teachers' emerging identity may assist teacher education programmes to prepare pre-service teachers for their professional teaching career (Beltman & Glass, 2015:226). Furthermore, Beltman and Glass (2015:241) propose that pre-service teachers acquire more experience from placements at

different schools for practice, and that their vision of being teachers could change. The challenges that are faced by teacher educators and mentor teachers in schools create the impression that the teacher education programmes are complex and there no transfer of skills from theory to practice takes place. There is a common observation that during practice students come for teaching experience without being thoroughly prepared or disciplined professionally.

A study by Khan and Saeed (2009:94) revealed that BEd as pre-service teacher education programme at an UE is relatively better than PGD in preparing teachers. In the BEd programme, students are introduced to school experience from year one of the programme, whereas in the PGD students have only one year for school practice. Knorr (2012:21) suggests that the pre-service teacher education programmes must introduce collaboration in education to pre-service teachers, as it will contribute to positive teacher preparation and positively influence collective and professional development. The support among students can create an atmosphere of teamwork to facilitate individual academic and personal growth.

Apart from the findings revealed by Khan and Saeed (2009) on practice teaching of pre-service teachers, Yüksel (2014) suggests that the system of implementing teaching practice must be reviewed. In reviewing the system, the collaborative views of mentors, supervisors and students are pertinent. Moreover, a workshop or training of mentors is significant before the cause of mentoring the students begins. Such a workshop will assist students to collaborate on the methodology that they are trained to by their supervisors and will add to the experience when they are observing their mentors while teaching. This will also be pertinent to pre-service teachers when they are practicing after they have observed their mentors. Ojediran and Oludipe (2016) assert that strategies to deal with anxiety that affect efficiency during teaching practice must be developed in restructuring the teaching practice system.

Fraser (2018) points out that in the minimum requirements that were developed by the DHET for a teacher education qualification, the *"how"* part when it comes to

implementation of teaching practice, was not included or suggested. Institutions of higher education have to develop their own programmes on how they are going to implement teaching practice. Apart from that, the DBE is clear on the competencies that must be acquired by learners at the end of their basic education. These competencies are structured as knowledge, skills and values for all the subjects offered by the DBE. Pre-service teachers are expected to demonstrate capability of instilling these competencies to learners during teaching practice. Molefe, Stears and Hobden (2016) are of the view that pre-service teachers do not demonstrate that they can implement a curriculum of basic education although this is expected from them. They need adequate time to learn some of the things when they have completed their studies on teacher education. All pre-service teachers are expected to acquire skills, values and knowledge based on the norms and standards which had been restructured to become the roles that any teacher must possess to implement curriculum in schools. The challenge at hand is that there are no pointers or assessment standards on how to assess pre-service teachers for skills, values and knowledge that must be acquired as roles through the whole process of teacher education (Killen, Nieman & Fraser, 2005).

Walton and Rusznyak (2016) also point out the issue of assessment standards for an inclusive pre-service teachers' curriculum. There are no clearly stated indicators to be achieved after pre-service teachers have been assessed. This rises from the sensitive issue that diversity is not catered for in the designed and developed curriculum for pre-service teachers, which makes it more difficult for them to implement an inclusive curriculum in schools where they are practicing teaching. Inclusive education is not seen implemented practically for teacher education; rather, a lot of theorising is found on this critical issue. The issue of diversity and inclusive education is so broad that it does not cover only one aspect, but many aspects such as culture, disability, slow students and faster students. Adams and Mabusela (2017) identify the confusion that comes with self-assessment for pre-service teachers as one of the most important components to deal with when pre-service teachers are assessed. Pre-service teachers should be able to assess their knowledge, skills and values when they are in teaching practice, and before any assessment takes place. Pre-service teachers who are actually doing fine are found to doubt themselves for what they are doing, and

those who are not yet there are found with a lot of confidence for their performance. That alone confuses academics and mentors; they don't have a strategy to deal with the challenge at hand. Adeosun (2012) agrees that there is no criterion on why students are assessed on a particular aspect, and if students assessed on that particular aspect, it must help them to implement curriculum in schools. Shoba, Nzimande and Makhasane (2015) emphasise that pre-service teachers' curriculum objectives do not match the assessment standards of the same curriculum.

In tackling the issues that affect pre-service teachers when they are in teaching practice, the issue of the language used to implement curriculum is critical. Pre-service teachers are not prepared to deal with learners who use more than one language in the process of teaching and learning (bilingual). This is common in practice but pre-service teachers have no strategy to handle it (Halai & Kajoro, 2017). Moreover, pre-service teachers are not sufficiently exposed to the most important stakeholder of the schools, which is the community. They are transported from universities to schools where they are allocated for teaching practice. They do not get the opportunity of engaging with the community to understand the community that the schools are serving. This means universities are producing pre-service teachers who are not ready to serve in the communities (Nkambule, 2017).

Moosa (2018) identifies the gap that is caused by miscommunication between the academics who are preparing pre-service teachers and mentors at schools who are guiding and mentoring pre-service teachers during the teaching practice period. Expectations of pre-service teachers by mentors are different to that of academics. Mentors expect pre-service teachers who are ready to face any challenges while implementing curriculum. Dlamini (2018) supports the view that it had happened in previous years to find that the school calendar for DBE clashes with the university calendar of the education programmes. This is also caused by a breakdown of communication between the two partners. Furthermore, Modipane and Kibirige (2015) reveal that approaches used by mentors to prepare for a lesson are not the same as the ones that are introduced by academics to them. Policy documents and other resources that pre-service teachers must get from mentors at schools are not

available. The inadequate knowledge of curriculum of some of the mentors is challenging, and the workload of lessons and administrative work that mentors put on pre-service teachers remain some of the main challenges.

Chaos and confusion between teachers and academics who are responsible for coaching and mentoring go back a long way. Robinson (2001) argues that there are no policies in place to implement smooth teaching practice in schools. Coaching and mentoring of pre-service teachers remains a burden for teachers at schools. Teachers at schools are expected to assess the progress of pre-service teachers while coaching them. Assessment of the progress is done by teachers within their own understanding, without any training by the tertiary institution that places pre-service teachers at schools. The absence of clear policy on monitoring of pre-service teachers at schools create different environment from one school to another for pre-service teachers. Schools are expected to create a positive environment for pre-service teachers while helping to identify prospective teachers in them. Different settings that are found in different schools prevent pre-service teachers from identifying positive features out of them (Ferreira & Schulze, 2014).

Reddy, Menkveld and Bitzer (2008) point out that as much as the universities wish to place their pre-service teachers in well-vested schools that can mentor their students in the way they wish to be mentored, there are challenges such as financial restraints. Financial muscle is needed to transport students or to rent rooms. Most of those schools are miles away from the universities of pre-service teachers. Resources are also needed for academics to visit those pre-service teachers who are in teaching practice. Academics are outnumbered by the pre-service teachers that they have to assess. That causes a challenge in the thorough assessment of pre-service teachers by academics. The length of period for teaching practice is also a contributing factor to some of the challenges that hinders pre-service teachers with gaining appropriate teaching practice. A short period spent by pre-service teachers for practice is not enough to put theory into practice (Ahsan, Sharma & Deppeler, 2012).

2.7 APPROACHES USED BY SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS IN PRE-SERVICE TEACHERS' PREPARATIONS

According to McRobbie (2000:1), sound teacher preparation programmes do exist, but there has been no organised way to ensure that all teachers obtain and continue to develop the knowledge and skills they need. Mergler and Spooner-Lane (2012:78) assert that for a pre-service teacher to become effective requires more time to gain experience. It is normal for beginner teachers to be ineffective while they are gaining experience. Therefore, more experienced teachers are needed to mentor pre-service teachers during their practice and those experienced teachers must be trained to mentor inexperienced in-service teachers as well.

The teacher education programmes are structured to cover a wide spectrum of fields. There are fundamental courses for all teacher education programmes that are offered to meet the minimum requirements for teacher qualifications. Fundamental courses include management and leadership, policy studies, psychology, philosophy, special education, sociology, curriculum and teaching practice. Mpofu and Nthontho (2017) suggest that the aspect of disposition should not be side-lined when the teacher education programmes are implemented by institutions of higher learning. Mkhize and Maistry (2017) point out that pre-service teachers may have anxiety that develops from compulsory modules which are part of teacher education programmes. Pre-service teachers perceive compulsory modules as not important for the programmes of their choice. This involves the issue of integration across the subjects, which is expected to be mastered by pre-service teachers. Moreover, pre-service teachers are expected to learn how to put the compulsory modules in practice when they are teaching their major subjects during teaching practice.

Rusznyak, Dison, Moosa and Poo (2017) reveal that South African higher education institutions are aware of many challenges in the implementation of teacher education programmes. These challenges include the issue of overcrowded lecture rooms, which is addressed by splitting pre-service teachers into groups, with the purpose of creating smooth lecturing and learning. The issue of first-year pre-service teachers being

introduced to a new setup and system of academics cannot be side-lined when dealing with the challenges that affect the implementation of teacher education programmes. Mpofu and Maphalala (2017) are of the view that academics still use old strategies that do not promote critical pedagogy in implementing curriculum for teacher education. Academics are aware that the concept of critical pedagogy is important in implementing teacher education programmes, but the challenge is on a strategy that can be employed in imparting critical thinking to pre-service teachers.

Ramoroka, Tsheola and Sebola (2017) suggest that South African institutions need to further transform curriculum from basic to higher education. This is where every stakeholder may realise that there are still challenges in using innovative approaches to implement curriculum. Transformation of the education system cannot be done only on the side of changing curriculum content; it must go hand-in-hand with strategies to implement such curriculum. Moreover, Ramoroka, Tsheola and Sebola (2017) reveal that the current education system does not assist South Africa to produce learners who may participate in all arms of the global economy.

Du Preez (2018) criticises the setup of South African education that does not have a strategy to produce competent and well knowledgeable pre-service teachers. The problematic approach starts when pre-service teachers choose teaching as their career. Many pre-service teachers are influenced by conditions that they cannot overcome when they choose teaching as a career. Pre-service teachers often choose the career of teaching when they are not accepted by tertiary institutions for their first choice programme, or by following the Postgraduate Certificate in Education (PGCE) when they have already completed their three-year degree and fail to find jobs.

The South African education system is further criticised for not being balanced in producing pre-service teachers. This is observed in the novice teachers who fail to handle the pressure that is coming with challenges such as poor infrastructure at schools, lack of structural support, human capital (staff) and unclear strategies to use in the implementation of curriculum at schools (Mumthaz & Kgomotso, 2016). Venter

(2017) responds by pointing out that programmes offered at the tertiary level of education for pre-service teachers should produce teachers who able to work independently. That must be realised while they are still learners at school or students at university to avoid the situation of novice teachers who cannot manage the pressure that comes with being a novice teacher.

Esau (2013) upholds that a research-based approach in any programme for initial teacher education is a solution, especially if the strategy promotes a student centred approach to implement teacher education programmes. This may assist pre-service teachers that will be using the same learner-centred approach when they are working as novice teachers. Steenekamp, van der Merwe and Mehmedova (2018) agree to the approach, and pronounce it as an activity based approach where academics give students opportunities to work alone to solve problems and to discover new things as pre-service teachers. Gachago, Bozalek and Ng'ambi (2013) supplement that a research-based approach requires ICT skills from both academics and pre-service teachers and enhanced communication between academics and pre-service teachers. It is suggested that teacher education programmes must include ICT modules at the first-year level of the programme that is designed for pre-service teachers. This responds to the fact that most of the pre-service teachers have completed their basic education at underprivileged schools, where there is no infrastructure with regard to ICT programmes (Kola, 2017). Mabusela and Adams (2017) concur that ICT skills cannot be ignored in the implementation of pre-service teachers' curriculum, although it is difficult to point out the exact part of ICT that should be integrated with the programmes offered. More programmes of orientation for the first-year students may be used to introduce computer skills to strengthen the curriculum that is in place for pre-service teachers.

Leung (2008) suggests that teamwork between the academics who are responsible for teacher education and the ICT team at the university may develop a programme to assist academics to identify the relevant sections in which they should be assisted in terms of skills required. Thereafter, academics should pass skills acquired on to pre-

service teachers. Besides, this can strengthen the quality of communication when implementing teacher education programmes.

2.8 CONTINUOUS CURRICULUM REVIEW FOR PRE-SERVICE TEACHERS' PREPARATION

Sahlberg (2005) advances the following important points that should not be ignored when any curriculum is to be reviewed or developed. It cannot be denied that political leaders have an interest in any curriculum that is reviewed; that includes the curriculum for pre-service teachers. It also cannot be overlooked that the final stage in the curriculum process is the implementation stage, and the role players of that stage are academics or teachers. Any curriculum designed or developed can appear good and relevant, but if academics and teachers who are responsible to implement curriculum do not understand the needs that curriculum is trying to address, then the developing stage also becomes a futile exercise. All role players need to be put on board at the first stage of curriculum reviewing, so that even the monitoring of the process will complement the implementing stage. Role players in reviewing of pre-service teachers' curriculum include politicians as policy makers, education advisors, academics and teachers (Webb, 2010).

Ramrathan (2016) argues that when curriculum is developed or reviewed in South Africa, curriculum implementers are not involved. The approach used is a top-down approach instead of down-top approach, where curriculum implementers are given an opportunity to submit challenges that they face when implementing curriculum. Moreover, Cishe (2017) confirms that the curriculum for pre-service teachers is not appropriate to produce pre-service teachers who are ready to implement curriculum at schools. Reformation of the curriculum is deeper than what is seen on the surface of curriculum changes. It involves transformation and what is happening in the economy, as well as universal didactic issues. Khuzwayo and Mncube (2017) concur that there are concepts that are incorrectly used in the scope of reforming the curriculum. The success of curriculum reform for them depends on the ability of curriculum implementers to comprehend and construe what is needed in the

implementation stage. Additionally, the emphasis must be not on the result of the curriculum implemented, but on strategies that are used during the teaching and learning process to arrive at the result.

According to Monyai (2006), the result or outcome of curriculum implementation is not an issue at hand; the issue is with pedagogical factors that affect the implementation stage of curriculum process. The following factors listed by Monyai (2006) affect the implementation of a pre-service teachers' curriculum:

- Absence of support to academics;
- Unclear assessment policy to academics;
- Pace and insufficient time to implement curriculum;
- Material and resources (equipment to use);
- Teaching and learning strategies;
- Curriculum content;
- Classroom management (large classes); and
- Obstacle that comes with language of teaching and learning.

On the other hand, Tokmak and Karakus (2011) argue that teacher education programmes must not focus on pedagogy, but also on thinking. However, pre-service teachers use theory from their personal background when they teach. Pre-service teachers face challenges of curriculum interpretation as the school curriculum is revised intermittently to achieve overall educational goals. This implies that teacher education should be able to respond to such needs. They also use the styles of teaching that were used by their previous teachers rather that those methods they were taught to use for teaching practice. According to Wong (2008), the pre-service teachers must be given an opportunity by the curriculum planner to state their concern. Moreover, Wong (2008) reveals that pre-service teachers encounter more problems with the research skills rather than with studying, writing, listening and speaking skills.

Gierdien (2012) asserts that teacher education is not complete; it prepares pre-service teachers to understand the curriculum and educational issues. Teacher education does not produce a custom-made ready teacher, but produces novice teachers who are ready to implement any curriculum of that particular time for basic education.

Moreover, pre-service teachers are not confident when they deliver the content of different subjects. That alone means the curriculum of pre-service teachers' preparation is not producing teachers who are ready in terms of content knowledge and pedagogy. Furthermore, Mpofu and Maphalala (2017) observe that the designed curriculum for teacher education should be promoting critical pedagogy for pre-service teachers. The same critical thinking that is acquired by pre-service teachers is required from learners by the DBE. If learners are taught by teachers who have been trained in thinking critically, that alone would assist the DBE in achieving its goal of producing learners that can think critically as well. The institutions of higher learning would also indirectly help themselves by instilling critical pedagogy in prospective pre-service teachers.

Altinyelken (2015) argues that it is difficult to have South African teacher education that promotes critical pedagogy due to the curriculum that is always "borrowed from other countries". Although benchmarking cannot be side-lined, reform of the curriculum must be informed by local society and its interests. Academics and teachers are the relevant sources to know all factors that affect the local society. If the local society is not involved in the developing stage, that alone can give them a reason to reject that curriculum. All stages of curriculum development in the reform process must be assessed or evaluated rather than only evaluating the whole process after its completion. That may assist to identify gaps as early as possible. This will be easier if the implementers of curriculum are involved in all stages of curriculum (Roberts-Hull, Jensen & Cooper, 2015). Durrani and Halai (2018) identify gender justice as one of the gaps that may be caused by the manner in which the curriculum is reformed or reviewed. Since the transformation of the education system started in South Africa, the teacher education is not clear on how to address gender issues of basic education. Mâţă and Suciu (2014) affirm that the language issue in curriculum reform had been identified at local level of the curriculum process as a barrier. That is supported by many studies that address the challenge of language in the reform of curriculum. Additionally, the challenge of language affects most countries in which the curriculum is under construction. Studies emphasise that models to address an issue at hand can be borrowed from any country that has successfully overcome an issue, but models borrowed should not be implemented as is; societal needs must be addressed first.

Despite the language that impacts on the transformation and reconstruction of many countries which are in the developing state, the battle of ideas among those who are entrusted with designing and developing of the road map to be followed in developing curriculum is retarding the process. There are those who still believe that African countries must use the same philosophical ideas that were used when European countries' curriculum was developed. They want this to happen without taking into account local societal issues such as diversity and beliefs. There are also those who believe in an indigenous approach. They use this approach without considering what happened to other countries that had undergone the same process of curriculum transformation and reconstruction. One may conclude this point by mentioning that the battle of ideas that take place among people who are assigned for curriculum transformation causes a lot of confusion to those who responsible for curriculum implementation. Moreover, this battle results in producing a curriculum that has unclear outcomes and content (Mahabeer, 2018).

2.9 CONCLUSION

This chapter reviewed related studies that had been conducted on teacher education. Different parts of the world were brought to the study in this chapter. Issues from a global and international point of view as well as elsewhere in Africa were synthesised to find challenges that are common in the implementation of teacher education. Literature talked to the challenges that affect South African institutions of higher learning when programmes for teacher education are implemented. The next chapter explains the theoretical framework that sustains the study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1 INTRODUCTION

Theories of constructivist learning and experiential learning have dominated education systems in many countries that had been oppressed by apartheid in the past. South Africa is one of those countries that had experienced oppression. Since South Africa gained its democracy in 1994, the education system is under major reconstruction and transformation for both basic and higher education (Mulenga, 2001). Therefore, it is not a mistake that the researcher in this study applies both constructivist learning and experiential learning as lenses in achieving the following objectives:

- Identifying of the challenges faced by South African Higher Education institutions in the curriculum implementation for pre-service teachers' preparation;
- Finding out how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparation; and
- Investigating of the views of academics on continuous curriculum review for pre-service teachers' preparation.

Additionally, constructivist learning and experiential learning theories are influential on how curriculum for pre-service teachers can be implemented. The formal preparation of pre-service teachers involves formal processes such lecture sessions, seminars, presentations and teaching practices. Constructivist learning and experiential learning theories are significant to based formal processes that are expected to produce independent prospective teachers. Therefore, the researcher is of the view that in managing challenges faced by South African Higher Education institutions for pre-service teachers' curriculum implementation, constructivist learning and experiential learning theories have the role to play in that regard.

3.2 CONSTRUCTIVIST LEARNING THEORY

The origin of this theory can be traced back to the ancient Greek philosopher Socrates, who was of the view that to implement any ideology, people at root level must learn to interpret and construct information to discover the unknown. In the mid-1900s, Piaget advanced the theory to make it more appropriate to the education sector when implementing curriculum for pre-service teachers (Schiro, 2012). Reagan (2003) observes that a constructivist learning theory advocates that teacher educators allow pre-service teachers to use their thinking in viewing things when teacher education programmes are implemented.

Skosana and Monyai (2013) located the constructivist theory of learning since South Africa's transformation and reconstruction started after apartheid. The constructivist theory of learning is appropriate and suitable for the processes of curriculum that the country and other developed and developing countries have gone through for both basic and higher education. This theory encourages curriculum implementation that rejects the traditional approach in favour of adopting an approach that is learner-centred. After 1994 South African tertiary education has adopted a student-centred approach, regardless of the setting of a particular tertiary institution, and challenges that face rural-based tertiary institutions. Additionally, in the implementation of a curriculum where pre-service teachers are allowed to be more active than academics, more resources and materials are needed if it is to be implemented successfully. This is dissimilar to the traditional approach where resources and materials are centred with academics who provide knowledge for pre-service teachers.

Regardless of the challenges that dominate in the implementation of teacher education programmes, Bitzer (2001) identifies the theory of learning through constructivism very appropriate for organising learning to implement curriculum for pre-service teachers at a tertiary institution. Co-operative learning through constructivism assists students to comprehend knowledge and account for their ideas as individuals to their group members. Students also learn to share their perspectives with other members without any pressure, although it is imperative that they must be properly guided when co-

operative learning is used for curriculum implementation. Eybers (2018) also points out that if constructivist learning theory is well integrated with co-operative learning, it assists student to become stronger in their academic literacy. Students obtain academic literacy that comprises of research methodology to be followed in order to find and interpret information to give applicable meaning. This happens earlier as they are in the first year of their academic journey.

Despite the constructivist learning theory that is integrated to co-operative learning, Mbati (2012) points out the relevance of the constructivist learning theory to overcome challenges for online learning. The collaboration of constructivist theory of learning in online learning is suitable for teacher education due to the distance between pre-service teachers and academics. Pre-service teachers do most of the things on their own to obtain knowledge. Computer literacy and skills regarding the internet are paramount to survive in the process of implementing curriculum through online learning. Most of the tertiary institutions that are responsible for teacher education are moving away from using paper to ICT. This happens even though these tertiary institutions do not use online learning as their primary strategy for curriculum implementation.

However, Pereira and Sithole (2019) identify the shortcomings of inappropriately employing a constructivist learning theory in implementing curriculum for pre-service teachers. The theory is not useful if guidance that must be provided by academics is not appropriate. Although critical pedagogy is emphasised and suitable through a constructivist theory of learning, challenges start when this theory is used in the teaching and learning process without any effective guidance from academics. In most cases the constructivist theory of learning is wrongly interpreted and when academics leave students to work alone without guidance or coaching. Figure 1 below gives a picture on how academics may effectively use constructivist learning theory in the implementation of teacher education programmes.

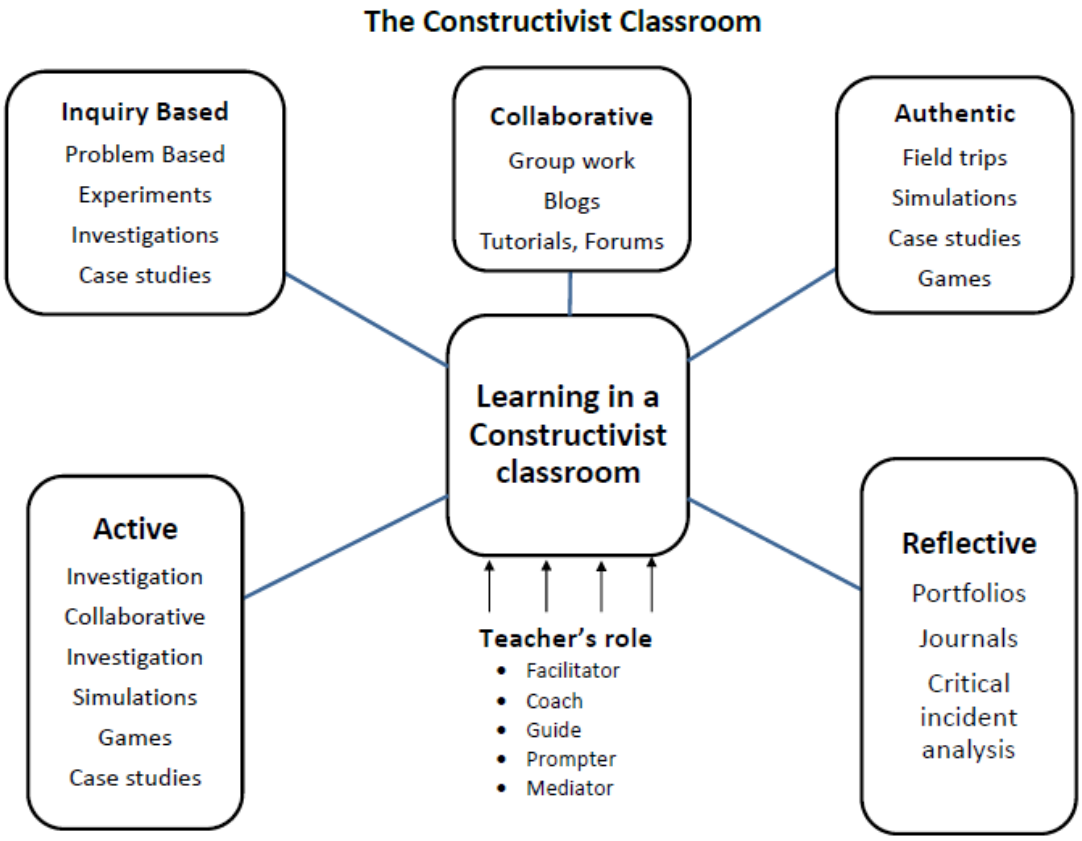

Figure 1: The Constructivist Classroom (Adapted from Pereira & Sithole, 2019:2)

Ndebele and Maphosa (2013) state that active learning is a planned series of actions or events where students process, apply, interact and share experiences as part of the educational process. This implies that activities must engage students with higher order cognitive skills where they are able to construct their own knowledge and are autonomous in their learning. Active learning (*figure 1*) promotes and instils independent thinkers who are able to view the world beyond the university and who are able to cope with the demands of the forever-changing curriculum. Leinonen, Keune, Veermans and Toikkanen (2016) posit that the integration of technology in current teaching and learning creates learning to be more fun in engagement, more meaningful and more student-centred. For example, in this instance a student can collaborate (*figure 1*) in groups by sharing ideas, through blogs and discussion forums on Moodle. The incorporation of technology-based pedagogy as a tool to enhance effective teaching and learning in the class is important as it may assist students to be more interested in their learning through collaboration and taking responsibility. Students need to be provided with more authentic activities (*figure 1*) that test their

higher order cognitive skills so that they can use the knowledge and skills in other situations. These activities may be an online video that must be downloaded so that they can support students when they are alone.

Ramnarain and Hlatswayo (2018) affirm that authenticity needs to be taken into consideration when inquiry based activities are implemented. The inquiry based approach (figure 1) is ideal to create active learning for pre-service teachers. Most of the work is done by students, such as investigation and experimenting to gain new knowledge, or to expand existing knowledge. Academics' role is to give pre-service teachers a problem or a case to be solved. Clear guidance from academics is essential, whilst students are allowed to freely solve a problem by applying their thinking. Moreover, students are expected to reflect (*figure 1*) on their journey of learning. Reflecting gives pre-service teaches a golden opportunity to critically analyse skills that they have acquired in the process of learning. Reflection can independently be done by students for every module that is part of their programme, or with the guidance of academics, where academics provide students with the tools to reflect on what they have learnt (Kizilcik and Daloglu, 2018).

Serafín and Havelka (2015:593) argue that as much as the guidance from academics is important, pre-service teachers must be in the position of relevant proficiencies to stand on their own for curriculum implementation when a constructivist theory of learning is applied. A deficit of guidance must not be an issue due to the fact that constructivism is not only used at tertiary level of education. The constructivist learning theory is also a prominent approach to implement a curriculum for basic education. If basic education is a foundation for tertiary education, lacking of competence to use the constructivism approach must not be a problem. Additionally, the constructivist theory of learning is not only for identifying a problem, it is also more appropriate to solve identified problems. The following diagram illustrates the use of an inquiry-based approach in constructivist learning theory:

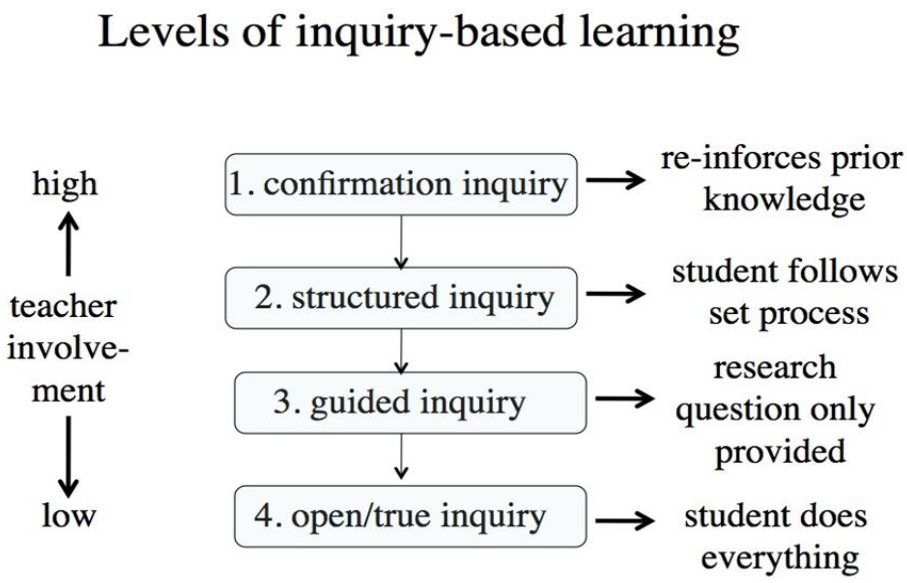

Figure 2: Levels of inquiry-based learning (Adapted from Banchi & Bell, 2008:28)

According to Banchi and Bell (2008) there are levels to be followed when an inquiry-based approach to learning is used: *Reinforcing prior knowledge* (figure 2) to assess what pre-service teachers already know. The first level is vital to get a hint of what is expected when *structured inquiry* (figure 2) is engaged. Level two is where pre-service teachers are introduced to inquiry which may be a problem, case, experiment or investigation. In *Guided inquiry* (figure 2), academics provide clear guidelines to students which must be followed when the task at hand is approached. Ambiguous statements must be avoided when academics offer those guidelines if quality is expected in outcomes. *Open inquiry* (figure 2) allows students to apply their minds to the task provided. Students must be provided with an opportunity to prepare the task without any intimidation from their lecturers. If all levels are implemented in a healthy manner, then inquiry-based learning is implemented though constructivism.

Noel (2015) suggests that educational setting can support pre-service teachers in using an inquiry-based approach. The support must promote social engagement everywhere. Using modern technology is identified as suitable strategy for students to share ideas. Social networking cannot be excluded from use in implementing teacher education programmes through constructivist learning theory. A question that may be

posed is whether academics are ready or not to guide and facilitate the integration of ICT for teacher education. First-year pre-service teachers are the ones who need more attention from academics, they are new to the educational environment at a higher level where they are trained as prospective teachers (Trepule, Tereseviciene & Rutkiene, 2015). Bognar, Gajger and Ivić (2016) agree that if guidance of pre-service teachers is not facilitated well, students reduce the use of technology only for accessing notes from lecturers on Moodle, rather than for networking with other students. Learning by incorporating constructivism can be properly done only if students are actively exchanging ideas. The following diagram illustrates the positive and practical way on how a social network or online learning may be implemented in constructivist learning:

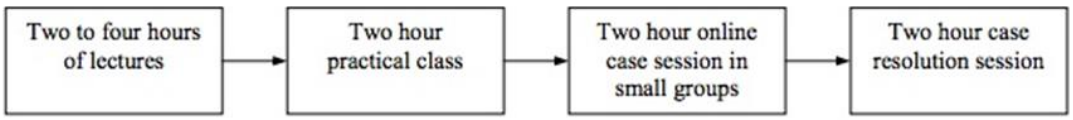

Figure 3: Implementing online learning (Adapted from Marcus, Taylor & Ellis, 2004:580)

The first two hours can be allocated for normal lectures, while the other two hours may be used for practical lectures (figure 3) that include experiments, cases studies, investigations and problem-solving activities. After practical lectures, an online session (figure 3) can be opened for students, and small groups are recommended to create space for everyone to benefit. Two hours are suggested for online sessions. The last two hours are used to give feedback (figure 3). Feedback sessions must take place where all students are present to make it beneficial to everyone (Marcus, Taylor & Ellis, 2004).

However, Alsharif (2014) is of the view that understanding and use of a constructivist learning theory at primary and secondary schools are weak and limited. Teachers do not understand how to integrate the theory in learning of learners. Teachers do not have strategies to get prior knowledge out of their learners, and they cannot manage to guide learners when they are working in groups. A learner-centred approach at primary and secondary school is only documented; it is not practical. One can assert

that learners get into tertiary institutions without understanding and knowledge of constructivist learning theory and critical pedagogy. That alone gives academics more work to be done when curriculum is implemented through constructivism at universities.

Nayir, Yildirim and Koştur (2009) point out that a constructivist learning theory cannot be used for a teaching and learning process only that does not include assessment. In the classroom that uses a constructivist learning theory as an approach, the assessment strategy must as well be suitable for the same theory. In most cases teachers avoid asking questions that need critical thinking to learners in written assessments. Such questions require teachers to spend more time to mark learners' assessment before they give feedback. All these are reasons for pre-service teachers to lack the competence and skills to understand the constructivist theory of learning at their first year of study at the tertiary level of education.

Petchtone (2014) reveals that using the constructivist theory of learning as an approach for teacher education gives pre-service teachers strength to use factors of the surrounding environment positively when their curriculum is implemented. Critical pedagogy assists in creating and sharing information that one obtains from different settings of society. Such opportunities are not available in the tradition approach, where the process of curriculum implementation is centred around academics who are responsible to facilitate teacher education.

Regardless of the environment that should be understood by pre-service teachers when they are applying their skills from prior learning at tertiary level, Janjai (2012: 1163) theorises that constructivist theory learning plays a significant role when students apply their critical thinking to prepare for different lessons for learners from different societies. This happens when pre-service teachers are out for teaching practice. Mentors are only responsible to guide, not to teach pre-service teachers on how everything should be done in classrooms. Furthermore, Büyükduman and Şirin (2010) voice out that pre-service teachers' experience being accountable for their

work, and that teaches them to do work independently. They are also able to identify their strengths and weaknesses without any pressure from facilitators and mentors. In the process, students learn to avoid being reckless with regard to their learning. Subsequently, supervision is required to get feedback from academics and mentors.

Despite the guidance and coaching that pre-service teachers should receive from academics and mentors, Sarıçoban (2014) discloses that language impacts on using the constructivist theory for implementing pre-service teachers' curriculum. This mostly happens in the universities that are rural-based. Most students in rural-based universities attended underprivileged schools to access basic education. In such schools, resources such as libraries and computers to access internet are severely limited. The language of teaching and learning to implement curriculum in many universities causes a problem for some pre-service teachers to comprehend ideas of other students when they are working in groups.

Nonetheless, Pillay (2010) argues that the evolution of education is very fast, so it is pertinent for academics to allow pre-service teachers to bring their different thinking to the classroom. Active learning through a constructivist learning theory can be a solution to find what students have on their minds for a better approach to their learning, rather than assumptions based on what had happened before. Furthermore, workshops on active learning for pre-service teachers are essential to succeed in its implementation. These workshops are relevant to determine students' expectations of the teaching and learning process when active learning is used as an approach. Besides, students become aware of the expectations of them from academics in the process. Lastly, workshops may assist students and lecturers to reflect together on the process of implementing pre-service teachers' curriculum.

3.3 EXPERIENTIAL LEARNING THEORY

This theory has generally dominated education systems. The roots of the theory are found in the work of Jean Piaget, John Dewey and Kurt Lewin towards the end of the

1800s and the beginning of the 1900s. David Kolb in the mid-1980s started to develop and advance the theory. The researcher decided to use the lenses of David Kolb through experiential learning theory to underpin this study. This has been done to complement the constructivist learning theory that has been discussed above (Miettinen, 2000). Haddara and Skanes (2007) view the experiential learning theory as learning through the experience of what is happening at the workplace. If learning through experience is well incorporated with teacher education programmes, the student, institution and employer must benefit at the end of its period. Students benefit by tasting the real workplace before they acquire their qualification, and they must be provided with incentives for their services. An institution that is responsible for training students benefit indirectly by producing students who are well prepared to be ready to serve the employer. The advantage of giving students an opportunity to serve for experience is to get work done at a small cost for the prospective employer. Prospective employers also use that opportunity to recruit young and motivated future employees to their organisations. Experiential learning theory is found in every branch or structure of higher education across the world. It is also useful to implement the programmes of teacher education. Furthermore, the theory is not only appropriate for tertiary institutions situated in urban areas; it is also relevant when rural-based universities implement their programmes. As such, the diagram below (figure 4) presents the cycle that was developed to comprehend the use of the experiential learning theory in the implementation of curriculum for pre-service teachers (Kolb & Kolb, 2005).

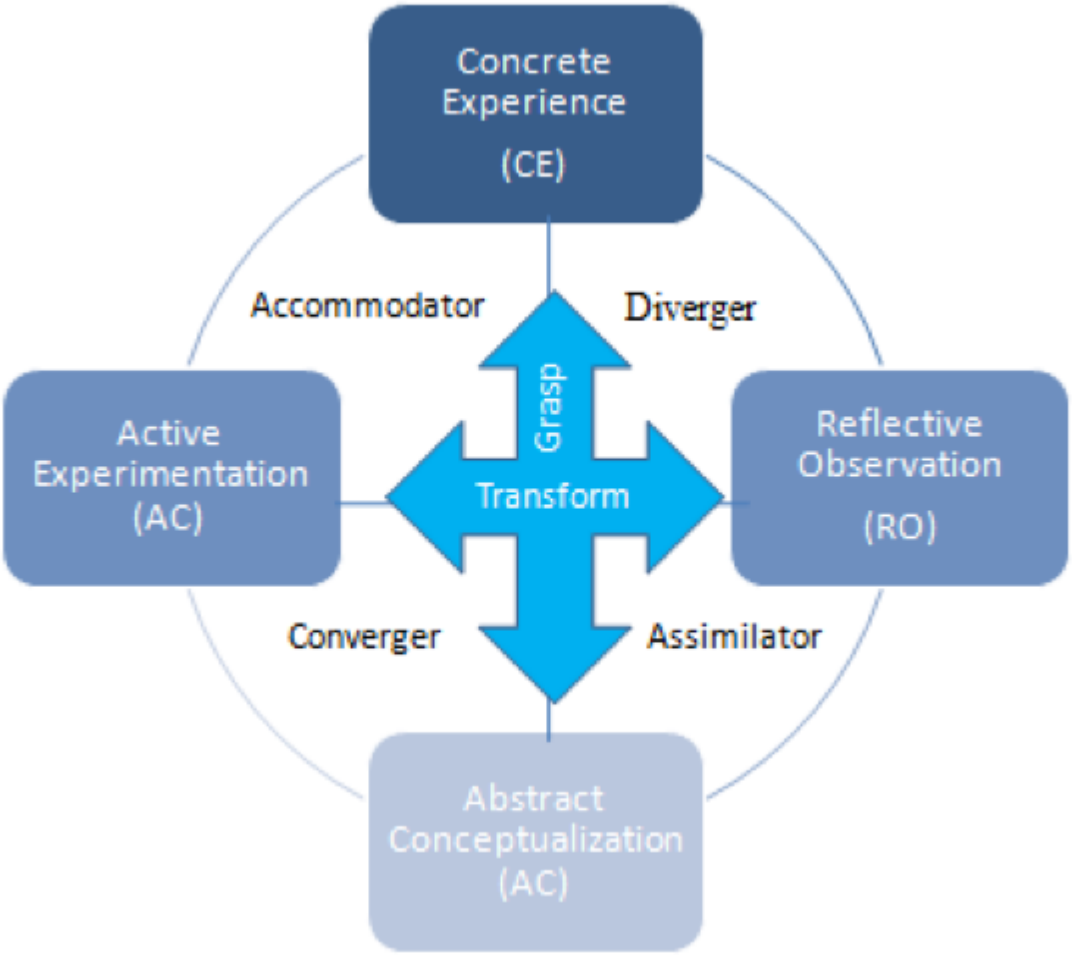

Figure 4: The cycle of experiential learning in curriculum implementation (Adapted from Kolb, 1984)

According to Kolb and Kolb (2009), the cycle presents that learning does not have an ending; *concrete experience* is mastered through reflection that takes place in the process of learning. Any reflection that takes place while learning must provide meaning (*abstract conceptualisation*) to pre-service teachers. Thinking that is allocated with meaning must be *actively experimented* by pre-service teachers to produce more real experience (see figure 4). Moon (1999) points out that *reflecting* (see figure 4) in learning is significant for pre-service teachers while they are in teaching practice. It gives students an opportunity to internalise a prospective teacher in them, whilst the *concrete experience* that is needed in practice after one has obtained his or her qualification, is acquired in the process. Reflection on teaching practice is normally done through journals that students are supplied with before going for teaching practice.

Dewey (1938) asserts that reflecting that gives *abstract conceptualisation* while creating concrete experience must be guided (see figure 4). Pre-service teachers must be provided with clear guidelines to be followed. Guidelines are provided by academics who are given a mandate to mould prospective teachers. Mentors at schools cannot be ignored; their experience is critical to the learning of students. The climate of schools where pre-service teachers are practising to gain experience is significant to produce future teachers. Inner readiness from pre-service teachers plays a huge role for them when they are involved in active learning. Roberts (2006) supports the idea of using experiential learning theory in teacher education, but proposes that it must be used in cooperation with other theories to develop a strategy for producing a well-balanced teacher for the future.

To develop theories that may be cooperated with experiential learning theory, De Villiers, Lubbe and Klopper (2007) identified action research as one of the solutions. Action research may be used to identify the positive and negative impact of experiential learning to formulate a strategy to address the destructive impact and encourage positive results of the theory. It is important to reflect on the process to test the methodology that is applied for action research. Reflection must be considered while the process of investigation is under way, rather than taking the reflection as a final stage for the whole process.

Daniels (2007) identifies the importance of integrating academic service learning through experiential learning theory in the programmes of teacher education despite listing action research. Pre-service teachers come from different social environments. Some students have attended schools that are under resourced, and others acquired their basic education from schools that are well resourced for teaching and learning. Therefore, the academic service learning approach plays an important role to give students exposure to both environments. It also assists to give pre-service teachers a chance to be part of a particular social environment while they are practising as prospective teachers, assuming that they had once experienced a particular social environment while they were learners. Furthermore, Hlongwane, Govender, Makhubu,

Makhonza, Kent, Ochiogu, Gumede, Nzima and Edwards (2018) transfer the concept of *ubuntu* into experiential learning; emphasising that one is not born with an understanding of this concept. The focus of the study is on a rural-based university, and the university mostly supplies rural schools with teachers. In most schools *ubuntu* is promoted, so if the university adopts academic service learning, academics have the responsibility to introduce the concept of *ubuntu* to pre-service teachers.

Nevertheless, Bringle and Hatcher (2007) state that South African universities' students are not ready to engage themselves with service learning. In teacher education programmes, service learning is not clearly integrated. Pre-service teachers are only allowed to go for teaching practice. Learning through experience in South Africa is not complete when compared with other countries such as America globally, and Nigeria, locally. The pre-service teachers' curriculum for tertiary institutions from other countries is aligned to academic service learning. All stakeholders are aware and ready to participate in the process of implementation. Erasmus and Van Schalkwyk (2011) raise the pertinent point that members of the community are not part of the process from the beginning, where planning takes place. They only receive students without any clear communication between the community and tertiary institution. In most cases the community is not clear on their responsibility when service learning is implemented. Additionally, lack of communication and training of community members where students are expected to serve are identified as obstacles in the process. A reflective approach as part of experiential learning theory is suggested to identify challenges for future implementation of service learning.

Academics view experiential learning as one of the central approaches to implement a pre-service teachers' curriculum. Experiential learning is viewed as the only approach that gives employers a chance to participate in the learning of pre-service teachers before they become employees to them. An experiential learning strategy is also viewed as the only strategy that may be used to convert theory that is received by students in the classroom into practice. This is expected to happen before students experience the real world of being employees (Fester & Haupt, 2006). Leal-Rodríguez and Albort-Morant (2019) claim that experiential based learning must be introduced to

students at the beginning of their academic programmes, rather than being introduced at the end of their academic programmes. This is vital for students to get an opportunity of reflecting with one another on their experiences, as well as with their lecturers. Students may also use this opportunity to bring what they have experienced during teaching practice into the classroom.

However, Schwartz (2012) strongly believes that academics, mentors and pre-service teachers should develop a strategy of assessing the experiential learning together. This may assist to put everyone on board for expectations and outcomes at the developmental stage. If that is not the case, learning through the experiential learning theory may become useless. Up to this far, mentors at schools and academics at universities are not in clear partnership on how to participate in the implementation of teaching practice. This bodes ill to implement experiential learning at rural-based universities. This view is supported when Kolb and Kolb (2017) review the theory of learning through experience by identifying that not only a learning cycle is essential to use experiential learning theory; Style and space of learning are added to receive attention from academics, mentors and mentees to have a well-structured teaching practice for pre-service teachers.

Regardless of the issues of style and space that need attention from academics, mentors and students, Wurdinger and Allison (2017) agree that experiential learning when it is well planned and instituted, shows positive results for the programmes of teacher education that are implemented for pre-service teachers, although in the process there are challenges such as large numbers of students who are in the same class. Insufficient time for integrating experiential learning theory with the whole curriculum is also a negative factor. Among other things, there is a demand for continuous professional development for academics, whereas resistance to change continues as a stumbling block to the new curriculum. However, Marin (2015) argues that even in the event of challenges that may be encountered, the purpose of using experiential learning theory must not be lost. Pre-service teachers must be at the centre and claim their learning from academics. Students who had gone out for

experiential learning must not return the same as before. They must be at the forefront in overcoming challenges that may be obstacles in their learning.

3.4 CONCLUSION

This chapter expounded on constructivist learning and experiential learning as theoretical framework to the study. Other related studies were reviewed to evaluate how constructivist and experiential learning theories have been applied. Most of the studies revealed that constructivist and experiential learning are crucially important in implementing teacher education with regard to contemporary strategies that are now used for total quality education.

The following chapter broadly discusses the methodology that was employed to conduct this study. In other words, the next chapter reveals the road map that was used by the researcher to conduct this research.

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The previous chapter attempted to synthesise a theoretical framework to create a base for the thesis to take its course. Suitable theories were visited by the researcher to find out what other scholars did to achieve the objectives of their respective studies. This chapter provides a detailed methodology that the researcher used in this thesis to achieve the following objectives:

(1) Identify the challenges faced by South African higher education institutions in the curriculum implementation for pre-service teachers' preparations;

(2) Find out how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparations; and

(3) Investigate the views of academic staff on continuous curriculum review for pre-service teachers' preparations.

Thus, this chapter presents the research design adopted by the study; the research paradigm that informed the study; the population and sample procedures; research instruments used for data collection, data analysis and presentation procedures; trustworthiness and ethical considerations.

4.2 RESEARCH PARADIGM

The comprehensive construction of academics' experiences was done in an interpretivist paradigm. The interpretive paradigm brings a new understanding of facts about the chosen phenomenon. New comprehensive meaning has been made of the challenges that face a South African tertiary institution in implementing the pre-service teachers' curriculum (Falk & Blumenreich, 2005). The interpretivist researcher concurs

with Bassey, (1999:43) that "*description of human actions are based on social meanings, people living together interpret the meanings of each other and these meanings change through social intercourse*". Aspers (2009) states that the interpretive paradigm gives one an opportunity to describe and interpret social setting, beliefs, experiences and ideas of participants to the study.

The position of the thesis was found within the interpretivist paradigm; the reason, it had to interpret and record the challenges that are facing South African tertiary institutions in the implementation of teacher education. In doing so, documents and experiences of academics were interpreted to find the real meaning of these challenges. Perspectives of the individuals responsible for implementing a curriculum of pre-service teachers were pertinent as direct information. The interpretivist paradigm provided the researcher with better space to deliberate on the challenges at hand by giving meaning to the perspectives of academics (Creswell, 2014).

Additionally, Crotty (1998) asserts that assumptions based on social structure interprets everyone's work constructed by them as they put their perspectives on certain issues. Interpretivist researchers employ in-depth questions to collect views from participants. Participants use their beliefs and wellbeing which are based on their background to inform their understanding of the world. Therefore, the pertinent part for the qualitative researcher was to gather first-hand information from different interpretations to construct his understanding, which was based on his experiences and beliefs. This basically took place when the researcher personally interacted with the participants of the study.

4.3 RESEARCH DESIGN

This is a comprehensive strategy to reveal how a researcher planned to do the research. This strategy was used to ask certain questions to achieve stated objectives. The researcher could choose between the qualitative and quantitative approach or use both approaches as a strategy. Burns and Grove (2003:195) view research design

as "*a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings*". Baškarada (2014:5) emphasise that "r*esearch design logically links the research questions to the research conclusions through the steps undertaken during data collection and data analysis"*".

The researcher decided to use the qualitative approach to investigate the challenges of South African higher education institutions in implementing a pre-service teachers' curriculum. The qualitative approach was also used to collect views of academics and to establish strategies that may be employed to address challenges that are facing teacher education in South Africa. Teherani, Martimianakis, Stenfors-Hayes, Wadhwa and Varpio (2015) view qualitative research as "*systematic inquiry into social phenomena in natural settings. These phenomena can include, but are not limited to, how people experience aspects of their lives, how individuals and/or groups behave, how organizations function, and how interactions shape relationships*". In qualitative research, a researcher uses an opportunity to interact with participants to get their views about what thesis intends to achieve. The researcher draws conclusions from the perspectives of participants without analysing numerical information to find a phenomenon (Hoepfl, 1997). Holloway and Wheeler (2002:30) agree that the qualitative approach is "*a form of social enquiry that focuses on the way people interpret and make sense of their experiences and the world in which they live*".

Qualitative data are employed to extract information from the participants in the sample. The participants are used mainly because they are concerned with the "why" and not the "how" part of the topic through the analysis of unstructured information, which in the context of this study was the analysis of interviews. These data are chosen because they do not only rely on statistics or numbers, as would be the case with quantitative data. The main purpose of the researcher is to dig deep in getting understanding through looking closely at people's words and actions while responding. In accordance with Tracy (2019), open-ended questions of the interview were used for qualitative investigation, because they provide rich and personal data; possible answers are unknown; and it is exploratory and appropriate to solicit participants'

views. Creswell (2014) additionally remarks that qualitative data usually involve direct interaction with individuals on a one-to-one basis, or in a group setting.

A qualitative research method was suitable for this study because the researcher received the data first-hand from participants. The researcher did not employ any person to collect data; he was the one who interacted with participants to get data. In adopting a qualitative research approach, "*the researcher seeks a deeper understanding of the views of a group or a single individua*l" (Creswell, 2014:140). The prominence of a qualitative research approach was in advancing a different and special setting instead of focusing on a general setting. Therefore, the important meaning was the one that was sensitive to participants. Being sensitive revealed how participants viewed a particular aspect of matter (Lune & Berg, 2016).

Moreover, qualitative research employs different strategies to activate sensitivity from participants. It was important that strategies of gathering data was emerging through the comfortable environment in which participants were exposed (Creswell & Poth, 2017). Thus, the researcher chose a qualitative research approach to include academics in the gathering of data. On that note the researcher had the opportunity to involve that sensitivity to academics who were participants to the study. Additionally, the researcher used a rare opportunity to rephrase questions that were asked to academics in order to give more clarification. In the qualitative strategy follow-up questions from the researcher were also pertinent in the collection of data. The qualitative approach provided the researcher with the opportunity to select reliable and suitable academics to give appropriate answers in addressing challenges that are facing South African higher education institutions to implement a pre-service teachers' curriculum.

The challenges that face South African Higher education institutions required this type of approach to provide an understanding of what caused all these challenges. The researcher adopted a *case study* design within the qualitative approach to establish an understanding to address challenges in teacher education. Through the case study,

prevalent data were collected to establish a comprehensive understanding of a particular setting chosen (Creswell & Poth 2017). Kumar (2014) views a *case study* as "*an approach for studying a social phenomenon thorough analysis of an individual case*". On that note, the researcher chose one rural-based university to gather information for conclusions to be drawn.

Furthermore, a case study method assisted the researcher to pay more attention to get deep understanding of the phenomenon observed during the course of the study (Yin, 2009). Maree (2010) emphasises that any case must be treated differently, as a unique case, to identify a real meaning and in-depth comprehension. That was done by giving every participant the chance to share experiences of a certain condition to establish meaning of the investigated phenomenon. Tellis (1997:3) shares the same sentiments that a case study "*strive(s) towards a holistic understanding of cultural systems of action and satisfies the three tenets of qualitative methods namely, describing, understanding and explaining the phenomena of interest*". Additionally, the following are some of the advantages of a case study that the researcher used to his advantage:

- According to Zainal (2007:1), case study "*allows the exploration and understanding of complex issues. It can be considered a robust research method particularly when a holistic, in-depth investigation is required*". This study utilised in-depth interviews that assisted the researcher to gather broader matters that affect teacher education at South African universities.

- Williams (2007:4) avers that the case study is helpful to the researcher because it "*explores in depth a program, an event, an activity, a process, or one or more individuals*". Individual experiences of academics were gathered to be interpreted within the interpretive paradigm and similar qualitative experiences were clustered together to come together with a meaningful conclusion.

- "*Qualitative case study provides tools for researchers to study complex phenomena within their contexts*" (Baxter & Jack, 2008:545). The study used features of a case study with a qualitative approach to investigate the

experiences of academics in order to draw conclusion about the phenomenon under study.

4.4 POPULATION AND SAMPLING PROCEDURES

Flick (2008) discusses sampling as an imperative stage of research where the researcher has to identify an appropriate method to select participants. The procedure of sampling is guided by an approach and paradigm that the researcher has already employed for the study. In this study, purposeful sampling was employed. Best and Khan (2003) add by discussing population as clustered communities according to their collective interest. They share comparable features and in most cases, they are working towards a common goal. For this study, the population of one rural university was used to select a manageable set of participants to the study.

Furthermore, chapter one of the study revealed that the study was based at a rural university located in KwaZulu-Natal. Through purposeful sampling, sixteen academics were identified and used as participants to the study. The academics used were selected on their experience or number of years in the academic fraternity. Five years of experience of implementing curriculum for pre-service teachers from academics was suitable in this study to establish the required experiences that would make this study a success. Two academics per department from eight departments of the Faculty of Education were purposefully selected as participants to the study. The population used was appropriate because the study took place in the period where the old curriculum was phased out and a new curriculum was being introduced. The new curriculum is prescribed in a new policy document called *Minimum requirements for teacher education qualification* (MRTEQ) and Higher Education Qualification Sub-framework (HEQSF).

All initial teacher education qualifications must comply with the two mentioned policy documents. The Minimum Requirements for Teacher Education Qualification (MRTEQ) (2011) is based on the Higher Education Qualification Framework (HEQF)

of (2007) which initiated regulatory changes to the qualification framework. The purpose of the new teacher education programmes is to develop professionally qualified teachers to fulfil the required competencies and roles in a complex teaching environment. The curriculum provides academic and professional subject matter, and ensures that classroom based experiential learning opportunities for the practice of teaching take place. In order to fulfil the above and to ensure that graduates achieve the exit level outcomes required for this qualification, the university has matched the curriculum to the requirements and prescripts of MRTEQ. This was done as per advice of Creswell (2014) that the researcher must motivate the position behind using purposive sampling for selecting participants.

Cohen, Manion and Morrison (2011) posit that when purposeful sampling is employed by the researcher to gather data suitable for the study, it is prudent to choose participants who are relevant. This assisted the researcher to draw conclusions that remain appropriate for the phenomena under investigation. The reason for choosing purposeful sampling was based on the kind of study questions that seek an in-depth understanding from participants. Therefore, the researcher had to purposefully select appropriate participants from the population that was too huge to draw a conclusion. Rule and John (2011) share the same sentiments that in purposeful sampling the researcher is the only one who has the authority to select the scope and participants for the study.

4.5 RESEARCH INSTRUMENT

4.5.1 In-depth interviews guide

The researcher decided to use individual in-depth interviews to collect data from academics who were used as participants in this study. Kamberelis and Dimitriadis (2005) state that individual interviews create the freedom of space for participants to speak all his or her mind on the research question. All participants felt that there was a freedom to speak as privacy was guaranteed by the researcher. Additionally, De

Vos, Strydom, Fouché and Delport (2005) claim that broad interviews ought to collect extensive information from participants and this took place under strict order of privacy and secrecy where the researcher promised to keep all participants as unidentified. This was done between participants and the researcher in planning for interviews.

As part of planning for interviews, there was an arrangement that was done through phoning and emailing between the researcher and participants about the date, venue and time for interview schedules. The researcher made participants aware that audio recording of interviews would take place during interview processes. All sixteen participants agreed to be audio recorded, and two devices were used to record all the interviews. The second device was used as a backup to the first one to safeguard the data collected from participants. The devices used to record will be kept in a safe place for a minimum of five years, which is required by the policy of the university under study. Creswell and Poth (2017) confirm that using audio recordings is reliable compared to notes taken when interviews are done for research purposes. The advantage of using an audio tape was that all answers and questions were captured and recorded to be replayed later for transcription purposes.

Additional to the above advantages that audio recording of interviews may possess, the following were some of the advantages of employing in-depth interviews as a method of collecting data from participants:

- "*Allows for nuances to be captured and for questions to be clarified and adapted or improved*" (Gray, 2009:372). Indeed, participants were granted with that opportunity to ask for clarifications if ever there was a question viewed as ambiguous.

- Wahyuni (2012:71) points out that interviews assist researchers "*to understand the social world from the experiences and subjective meanings that people attach to it, interpretivist researchers favour to interact and to have a dialogue with the studied participants*".

- Participants are not limited to express their views on a tabled concept. They avow all experiences they have without being conditioned by whether the researcher or environment. All questions are open ended, so that participants may provide answers freely (Henning, Van Rensberg & Smit, 2004).

- Interviews that are done face-to-face between interviewer and interviewee are very explicit and avoid a waste of time. An interviewee answers questions by an interviewer very quickly. The researcher expects to be in the possession of information immediately after the interview schedule (Opdenakker, 2006).

- Boyce and Neale (2006) state that using extensive interviews provides the researcher with broad data compared when data are collected by other methods of data collections. The interview schedule also provides both interviewer and interviewee more control over a well-organized and calm session to have free interaction than when a survey is taking place.

- The interviewer manages to identify gaps in answers that are provided by the interviewee before the interview. The interview process proclaims reality when questions are answered by participants (Alshenqeeti, 2014).

Therefore, the researcher opted to use in-depth interviews to get collect extensive and sufficient data for conclusion and recommendations. Since the study was targeting the academics as participants, it was certain that they can express themselves for qualitative study. Besides, it was also advantageous for the researcher to have follow-up questions where necessary. Interviews gave a researcher an opportunity to interact with the participants to get first hand answers. Unlike where a participant can ask anyone to answer the questions on behalf.

4.5.2 Document analysis guide

It was briefly stated in chapter one that the document analysis technique was also employed to collect data related to the implementation of a pre-service teachers' curriculum at South African higher education institutions. Bowen (2009) discusses document analysis as one of the techniques used to collect data when a qualitative approach is used to conduct research. This data collection technique is also used when research is informed by the interpretivist paradigm to draw conclusions from data collected. Merriam (2001:126) agrees that "*documentary data are mostly good sources for qualitative case studies, since they base an inquiry in the perspective of the problem being explored*".

Therefore, documents were analysed to give support to the themes and categories that were formulated from collected data through interviews. This was done based on the main aim and objectives of the study. Analysing the documents was also useful to close the gaps found from the data collected through interviews. Some of the documents were provided by the Faculty of Education and other documents were already available on the website of the rural-based university where the study was conducted. The following documents were requested from the Faculty of Education:

- Minutes related to curriculum review and implementation;
- Reports related to curriculum review and implementation;
- Documents related to teaching practice; and
- Policy documents on assessment.
- The new MRTEQ aligned teacher education programmes

Apart from the documents that were requested from the Faculty of Education, the following documents were available on the website of the university that was used for conducting the study:

- Calendars;
- Faculty brochures; and
- Course curricula and assessment.

4.6 DATA ANALYSIS AND PRESENTATION PROCEDURES

Data analysis and presentation took place as it has been stated in chapter one. After all interviews had been completed, the researcher searched for meanings from data collected to establish themes. Simons (2009) suggests that to run the process of data analysis, qualitative data must be reduced to data that is pivotal to create themes and categories that are essential to present information in order to draw conclusions on questions that had been asked in the introduction of this thesis. Bogdan and Biklen (1998) explicate data analysis as the practice that takes place technically to organise information to expand comprehension and obtain meaning of data that are presented to the body of knowledge. The interpretive paradigm has guided the researcher to understand and decide on data that had been collected from participants.

Face-to-face interviews were used to collect data; an interview schedule (see Appendix A) was used in order to provide direction on the kind of questions to lead the process. The responses to the open-ended questions of the qualitative investigation were captured *verbatim* on a matrix. Responses were analysed to identify commonalities, trends and themes in the use of common and recurring words. Thematic analysis was an essential method, which reports the experiences, meanings and reality of participants. The steps followed to analyse the data are described in the table below.

Chapter one indicated transcription of data as one of the vital stages after qualitative interviews have taken place. This happened after all interviews had been collected from participants to the study. Olsen (2012:35) emphasises and discusses the importance of data transcription as "*writing down or typing out the text of an interview or other sound file and as insight into mechanisms, processes, reasons for actions, and social structures as well as many other phenomena*". Furthermore, themes and categories were based on sub-questions raised for this thesis to conclude on the qualitative interviews that had been conducted with the participants. The following are the questions that were used to base themes:

- What are the challenges faced by South African higher education institutions in implementing the curriculum for pre-service teachers' preparation?
- How do the South African higher education institutions respond to challenges faced while implementing the curriculum for pre-service teachers?
- What are the views of academics on the continuous curriculum review for pre-service teachers' preparation?

Table 1: Procedure for analysing qualitative data (Interviews)

Step 1	Conducted interviews.
Step 2	Transcribed interviews.
Step 3	Read transcribed interviews.
Step 4	Put all codes in a table with a description of each.
Step 5	Grouped codes together to establish themes that emerged.
Step 6	Put themes in thematic networks with the codes that informed the themes in order to gain an overall picture of the data collected.
Step 7	Trimmed the codes and added them together to give a better coherent picture, and worded the themes that were found more coherently
Step 8	Wrote chapter five, where the themes were described in detail in relation to answering the research questions as set out at the beginning of this chapter.

Table 1 summarises procures that were followed for data analysis. Step 1 shows that all interviews were conducted following the interview guidelines. Audio recorder was used to record all interviews. All participants were interviewed by the researcher. Step 2 is about transcribing of data. All data was transcribed immediately after interview of every participant. Data was transcribed manually. Computer was used to transcribe data. Step 3 was done several times by the researcher to establish and highlight which codes occurred. Step 4 was about showing all the codes by using columns to give an

indication of how often this particular code was mentioned by the participants (verifying data saturation). Step 5 was for establishing themes, and themes were established by grouping similar codes from different participants. Step 6 reveals that themes were formed and written down to take an informed decision. Step 7 shows that decision taken in step 6 was not final to put information together that was logical to process codes. Therefore, there was a need to identify the most relevant codes from data. Step 8 reveals how themes were allocated to relevant objectives that were expected to be achieved by the study.

4.7 TRUSTWORTHINESS

The researcher is passionate about the importance of trustworthiness. The researcher worked very hard to ensure that trustworthiness involved features such as credibility, dependability, transferability and confirmability. Themes and categories that had been established during the analysis of data by the researcher may be different to the views of other researchers, but did not waive the aim and objectives of the study. Gunawan (2015) advises that to "*ensure the rigour and trustworthiness, the qualitative researchers consider to do member checking, triangulation, detailed transcription, systematic plan and coding*". Thus, transcriptions of data extracted after interviews were sent back to participants for verification whether the transcribed texts were true reflection of their experiences and suggestions or not.

4.7.1 Credibility

Credibility acknowledges that reality is subjective, and that it may be influenced by many perspectives. Credibility is therefore the correspondence between the way in which the researcher interprets and presents the research findings, and the meanings and perspectives of the research participants (Merriam, 2009:213-215). Research findings of this study were presented as they are. The researcher did not tamper with the findings to give them personal direction. Additionally, findings were scientifically presented, and relevant literature was used to create an argument between other

researchers and the findings of this study. Patton (2002) emphasises that findings of the study show credibility when they can be reproduced when the study is conducted by any researcher.

4.7.2 Dependability

Dependability comes from the manner in which findings of the study have been developed. This involves the study methodology and instruments that had been used to collect data to produce findings. If scientific methodology had been followed and the study had been correctly guided, that creates faith and belief to a reader (Anney, 2014). The study used a qualitative approach and employed interview schedules and document analysis as instruments to collect data. A purposeful sampling strategy was used to identify the population that was used to gather information. The study purpose was to investigate challenges in the implementation of teacher education. Therefore, academics were used to give their experiences about teacher education implementation. Hence, that gave the findings of the study adequate strength for the researcher to depend on them for drawing conclusions.

4.7.3 Audit trail

The audit trail provides documentation of the decisions and descriptions of the research process, with particular attention paid to the collection and analysis of data (Merriam, 2009). In this study, chapters 4 and 5 provide this documentation of the exact process involved in the completion of this study, including description of the data collection, data analysis and interpretation processes. Moreover, all letters and raw interviews that served as a permission to the researcher to conduct this study were kept safe for only authorised persons as per national and University of Zululand research ethics.

4.7.4 Transferability

Transferability is the degree to which the context of a study has been described to ensure internal validity so that other researchers may know the extent to which the study can be applied to other contexts (Given, 2008). Merriam (2009) suggests that we need to think of generalisability in ways appropriate to the philosophical underpinnings of qualitative research, namely that the findings of research can be transferred to certain other contexts if the contextual influences are documented in the research in question, and are applicable to other situations. This study was limited to the Faculty of Education at one of the rural universities in South Africa, but could be transferred to any other rural university that could be seen as related in terms of situation and context.

4.7.5 Confirmability

Confirmability captures the traditional concept of objectivity, and refers to the degree to which the research findings reflect the meaning intended by the participants, rather than the preconceptions of the researcher (Klenke, 2008). In order to achieve this, the method of data verification was used. The researcher verified with the participants during the interviews whether he had correctly understood the concerns and realities they raised.

Furthermore, after analysing data, the researcher has asked peers to provide their views on themes and categories that the researcher has identified for this study. This took place while the researcher was still holding the view of using an interpretive paradigm for this study. Indeed, the study did not lose the posture of being informed by the interpretive research paradigm. The purpose of using peers to review themes and categories that were used to analyse data was done to test the trustworthiness of data used to draw conclusion. Shenton (2004) supports the step that the researcher took and emphasises peer scrutiny of the research project as one of the pertinent steps to assess the trustworthiness of particular project.

4.8 ETHICAL CONSIDERATIONS

Flick (2007:122) points out that "*ethics are becoming increasingly relevant in the context of research. Most research has to be approved by institutional review boards. As qualitative research is almost always research with human beings in one way or the other, it has to be subjected to examination by institutional Ethics Committees quite regularly*". According to Munro (2011:148), ethics is a set of widely accepted moral principles that offer rules and behavioural expectations of the most correct conduct towards experimental subjects and participants, employers, sponsors, other researchers, assistants and students.

The University of Zululand's policy and measures on Research Ethics and its Policy and Procedures on Managing and Preventing Acts of Plagiarism, Research Ethics Guide (2015) were adopted by the researcher to conduct this study. Views and suggestions of other scholars on consideration of ethics were incorporated to conduct this study. The researcher has understood them as written and set out in the university policies. The researcher has taken the following into consideration:

- Obeyed the law, internationally and nationally following acceptable standards governing research with human participants and presented the proposal to the institution's research board, for approval;
- Obeyed all rights of the participants and to follow an agreement and protocol that clarify the nature of the research and the responsibilities of each party have been explained;
- Produced an informed consent process that has outlined the purpose all the time when specific steps were required; disclosed the duration before participation took place, the researcher had been transparent and informed participants about their right to decline to participate and withdraw from participation at any time and the

consequences of withdrawal and there would have been no risks at all for participants;

- Conducted research that was voluntarily. Participants were requested not to expect any personal benefit and personal details of participants were not disclosed for any reason. They have remained as confidential;
- Individual participation was needed and participants were requested to participate without expecting any payments and participants were provided with the informed consent declaration form to sign (**See Appendix F**);
- Complied with the requirement to make sure that the researcher avoid risks, obligations and limitations to the participants; not involve any deception, if any is to be occurred. The researcher made sure that nobody was caused any physical pain and that only human beings have participated in this study;
- Complied with the reporting standards and regulated citation standards;
- Abided to the rule of anonymity and confidentiality of the participants all the time;
- Kept all transcripts and the recorded materials and the recorded information safe and locked for the purpose of confidentiality;
- Complied with the publication credits, as for a requirement and made the work available to share with other researchers to allow verification of results;
- Informed and reminded all professional reviewers that they must respect the confidentiality of the propriety rights;
- Tape recorders were kept in a safe place. This is recommended by the university in its rules and ethics of conducting a study that is registered with the university;
- Ethical clearance certificate was issued by the university's ethics committee (**See appendix C**);
- The researcher received permission from the university where the research was conducted (**See appendix D**) and the faculty where the study was conducted also granted permission to access participants to collect data (**See appendix E**).

- All the material and sources used were acknowledged as references. The researcher engaged with the university's policy and procedures on research ethics, and managing acts of plagiarism, and understood the grounds for the authorities' consent. The supervisors and the researcher considered and discussed the ethical issues that arose from this research.

4.9 CONCLUSION

Chapter four outlined the methodology of the study by explaining in detail the extensive procedures that were followed to conduct this study. This chapter presented the research methodology under the following main headings: research design; research paradigm; population and sample; research instruments; data analysis and presentation procedures; trustworthiness; and ethical considerations. The following chapter will present the detailed analysis of data. It will also present the themes and categories that were generated to reach a conclusion and make recommendations on the research conducted.

CHAPTER FIVE

PRESENTATION AND ANALYSIS OF DATA

5.1 INTRODUCTION

The research methodology was outlined and discussed in the previous chapter. Appropriate research design and research paradigm were discussed in detail to clearly describe the research methodology that was followed for the study. Suitable sampling procedures and instruments for data collection employed were also clearly outlined in the previous chapter, under research methodology. In this chapter, the researcher analyses and presents qualitative data that were collected through interviews and relevant documents. Interviews were used as the main source for data collection, while relevant documents were used to enhance data collected through in-depth interviews. Subthemes were conveyed under three main themes based on the objectives of the study that was conducted. The researcher followed the procedure that Creswell (2014) suggests as follows:

- The researcher read the data to identify meaning from the pool provided by participants as it was;
- Data were read repeatedly and thoroughly to relate to what participant was trying to convey as an individual;
- Common meaning was searched for in order to form categories and small units of the data collected; and
- Lastly, organisation of data was done to small units that had been clustered by the researcher.

The following themes were identified from the in-depth interviews and document analysis:

5.1.1. Identifying the challenges faced by South African higher education institutions in the curriculum implementation for pre-service teachers' preparation

- Highest qualification related to curriculum implementation of pre-service teachers;
- Professional qualification related to curriculum implementation of pre-service teachers;
- Years of experience as a member of the academic fraternity;
- Years of experience in implementing curriculum for pre-service teachers;
- Problems or challenges encountered when implementing curriculum for pre-service teachers;
- Challenges encountered that related to teaching practice;
- Resources necessary for implementing curriculum; and
- Availability of necessary resources.

5.1.2 Determining how the South African higher education institutions address the challenges they face in implementing the curriculum for pre-service teachers' preparations

- Approaches used to overcome related problems or challenges in curriculum implementation for pre-service teachers;
- Approaches used to overcome problems or challenges related to teaching practice.

5.1.3 Investigating the views of academic staff on continuous curriculum review for pre-service teachers' preparation

- Views of academic staff on what informs curriculum review internally;
- Views of academic staff on why curriculum at higher education institutions is always reviewed;

- Views of academic staff on how reviewing of curriculum impacts on curriculum implementation;
- Preparation and strategies to curriculum review and implementation;
- Present state of pre-service teachers' curriculum at the university;
- Guiding documents used for curriculum review and implementation;
- Views of academic staff on how to overcome challenges encountered in implementing curriculum;
- Views of academic staff on continuous review of the curriculum for the future; and
- Feedback from the Department of Basic Education about university products.

No comparison was drawn between answers of participants. Participants' answers from interviews were outlined, described and interpreted. Participants to this study were indicated by the codes LA; LB; LC; LD; LE; LF; LG; LH; LI; LJ; LK; LL; LM; LN; LO; and LP.

5.2 ANALYSIS AND INTERPRETATION OF IN-DEPTH INTERVIEWS AND DOCUMENTS ANALYSIS

5.2.1 Identifying the challenges faced by South African higher education institutions in the curriculum implementation for pre-service teachers' preparation

5.2.1.1 Highest and professional qualification related to curriculum implementation of pre-service teachers

This information was regarded as important as it provided a profile of each participant of the study.

Table 2: Highest and professional qualification

Participants	Highest qualification (NQF)	Professional qualification (NQF)
LA	PhD (10)	PhD (10)
LB	PhD (10)	PhD (10)

LC	PhD (10)	PhD (10)
LD	PhD (10)	PhD (10)
LE	PhD (10)	PhD (10)
LF	Masters (9)	Masters (9)
LG	PhD (10)	PhD (10)
LH	PhD (10)	PhD (10)
LI	PhD (10)	PhD (10)
LJ	PhD (10)	PhD (10)
LK	PhD (10	PhD (10
LL	Masters (9)	Masters (9)
LM	PhD (10)	PhD (10)
LN	PhD (10)	PhD (10)
LO	Masters (9)	Masters (9)
LP	Masters (9)	Masters (9)

Table 2 above reveals the highest and professional qualifications of academics that implement curriculum for pre-service teachers of a rural-based university. Both qualifications were used to determine whether academics meet the minimum requirements of implementing pre-service teachers' curriculum. According to the university's norms and standards, to implement curriculum for pre-service teachers, an academic must be in position of at least a relevant master's degree at NQF level 9. Therefore, it was found that all academics who participated in this study met the minimum requirements of implementing curriculum for pre-service teachers.

Regardless of the fact that all participants met the requirement in terms of qualifications, there is persistence of challenges facing South African tertiary institutions when it comes to the implementation of a pre-service curriculum.

5.2.1.2 Years of experience related to academics in general and to curriculum implementation of pre-service teachers

Table 3: Experience in academic fraternity and in pre-service teachers' curriculum implementation

Participants	Experience as a member of academic fraternity	Experience of implementing pre-service teachers' curriculum
LA	22	22
LB	10	10
LC	18	9
LD	12	12
LE	10	10
LF	25	25
LG	20	5
LH	5	5
LI	11	11
LJ	9	9
LK	13	13
LL	11	11
LM	13	13
LN	33	11
LO	14	14
LP	12	9

Table 3 above shows that all academics that participated in this research had more than five (5) years of experience both as academics in general and in implementing pre-service teachers' curriculum. Moreover, 88% of participants had spent many years of experience in implementing curriculum for pre-service teachers, and only 12% had a difference between years spent in implementing pre-service teachers' curriculum and as an academic in general.

Additionally, 69% of participants had more than 10 years of experience in implementing teacher education. That gives sound evidence that those academics had implemented more than two different curricula for pre-service teachers. Beside, all academics that participated in this study had implemented more than one curriculum for pre-service teachers. Therefore, all academics who participated in the study were expected to be able to provide suitable answers to challenges that face South African institutions of higher learning.

Qualitative Description (QD), table 2 and 3 injected in the study, which simply mean that qualitative content analysis is often supplemented by descriptive Statistic to describe the study sample. QD involves low-inference interpretation. The researcher only wanted to capture the profile of the participants as criteria to justify their selection in the study.

5.2.1.3 Problems or challenges encountered when implementing curriculum for pre-service teachers

5.2.1.3.1 Overcrowding in lecture halls

Overcrowding in lecture halls was identified as one of the main challenges that hinders the smooth implementation of curriculum for pre-service teachers. This was revealed by all participants to this study and it was also found in the document published by the university on facts and figures on enrolment and permanent academic staff that was expected to implement curriculum for pre-service teachers. The total number of permanent academic staff in 2013 was 299; that number was expected to serve 16 591 students. In 2018, the total number of permanent academic staff was 295 and they were expected to serve 17 952 students. However, the faculty under study listed 4 934 students as pre-service teachers. A decrease in the number of permanent academics that was discovered while there was an increase in the number of students enrolled supports the concern raised by the current academics that are expected to implement pre-service teachers' curriculum (Unizulu, 2018).

In a study done in the United States of America, Li and Guo (2015) confirm what the participants stated, namely that large class size was seen as one of the factors that cause a massive negative impact on implementing teacher education. Furthermore, in a study t done in Kenya, Waita, Mulei, Mueni, Mutune and Kalai (2016) validate the reasons that were raised by participants regarding the challenges that come with the size of the class. The issue needs more attention, as this might also help to address the issue of quality education. Marais (2016) argues that the challenge of overcrowding of students in classrooms in South Africa does not only affect tertiary education. Overcrowding has also been identified as one of the dominating challenges in basic education. This means the sector of education as a whole in South Africa has long suffered from the issue of inadequate space to deliver quality education.

The following points were stated by different participants to relate on the issue of overcrowding:

LA: "*You know what, it is different here. Lecture halls are fully packed in such a way that it's not easy to remember the students that you are teaching. You remember some, but you always recognise new faces."*

LB: "*Numbers of students are too big compare to the number of academics that are implementing curriculum for pre-service teachers."*

LC: "*It is very difficult to implement curriculum due to big numbers that I have in the classroom."*

LD: "*I find it difficult to lecture, because there are too many students in my class. It is like punishment working with so many students. We try but not easy for us."*

LE: "*You cannot teach in the way you wish if your class is very big."*

LF: “*if you are teaching many students as I normally do, it very difficult to see whether they have understood or not.”*

LG: “*It is a big group because I teach a core module. It is done by every student, sometimes you find that you want to have creative and innovative things that you would like to do, for the group is not easy. Obviously, the assessment methods will be affected by the bigger groups.”*

LH: “*I have a number of challenges such as the issues of big classes, which to me limits the kind of interactions we should have with students.”*

LI: “*I am not saying all of them but I find it very difficult to engage them, other challenges is that we have very large numbers and is not easy to assess the content that you have just delivered to them.”*

LJ: “*We have many students that have been enrolled into the programme, so it very challenging to handle big numbers and it is very difficult to do justice in terms of teaching and learning.”*

LK: “*Assessing in the classroom and marking are some of the challenging things to do if you check the number of students we have for the programme.”*

LL: “*Ever since I joined the university I have been teaching a class of a thousand students alone. It means I am going to be failing somewhere in terms of administration because numbers are too big, and sometimes marking becomes a problem.”*

LM: “*If I can tell, the module that I teach has a lot of practical work, which means I need a specific number of students that I can manage, which is not the case. They end up doing practical tasks in group.”*

LN: *“To develop reading and writing skill you need to have small sizes of classrooms to keep them writing activities, and give time for feedback.”*

LO: "*It is really frustrating to teach in this situation, you have to mark scripts, you have to do other administrative work. It is difficult to copy."*

LP: "*As we speak we have 200 pre-service teachers. Mind you the space, it is still the same space. We have moved from 100 to 200, almost doubled in this 8 years. For me that is a challenge because we need to see them when they answer questions. You are not so sure if the quality is still the same, and the spaces also, the infrastructure is not good enough."*

5.2.1.3.2 Physical infrastructure

Eighty-eight percent (88%) of participants identified slow development in the infrastructure as one of the concerns that hinders the appropriate implementation of a pre-service teachers' curriculum. They believe that slow development of infrastructure contributed to the problem of overcrowding of students. Basically the lecture rooms that had been used seven years ago are the same lecture rooms that are used currently, even though the number of students enrolling has drastically increased.

An Ethiopian study declared that Ethiopia faced the same situation in 2007, where there was overcrowding of students due to a shortage of universities in the country at that time. The Republic of Ethiopia resolved the issue by building 13 universities. One of the main reasons for building these universities was that quality assurance for teacher education was compromised by the *status quo* (Van Deuren, Kahsu, Mohammed & Woldie, 20161). Theresia and Bangun (2017) argue that the most affected party in the issue of infrastructure building consists of the academics who find themselves using unsuitable infrastructure to teach pre-service teachers. These academics are expected to do wonders in an unconducive environment.

Participants stated the slow development in physical infrastructure as a concern, adding that most of the lecture halls are without functioning air conditioners to cool down the heat. Most of the lecture halls do not have movable chairs to facilitate incorporating different strategies when teaching. Furthermore, participants also mentioned that equipment like audio-visual projectors commonly overheat and stop

working while the lesson is in process. Moreover, the faculty under study does not have the privilege of exclusive use of the lecture halls; they are shared with other faculties. Sharing lecture halls impedes the ad hoc use of lecture halls for tutorials.

Participants said:

LA: *"I have taught in so many universities, but I have never faced this situation. Same type of lecture rooms, there is no flexibility, chairs are fixed. They are also small to fit the number of students admitted for B.Ed."*

LB: *"There is a problem of overcrowding that is developing from small lecture halls. Lecture halls are small and has no air conditioner."*

LC: *"Sometimes lecture theatres are very hot, and becomes difficult for one to be in class for a long time because is hot."*

LD: *"New lecture halls were built in not so many years ago, but they still do not assist when they are compare to the number of students that we have in the faculty. Another thing, these new lecture halls are shared by all faculties. We would like to have lectures that are suitable for grade R classroom teaching"*

LE: *"I would say the basic infrastructure like lecture rooms is there, although it is difficult to use it in the current set up of teacher education."*

LG: "*We have large groups to teach in a small lecture theatre. Maybe I would talk about bigger issues like infrastructure, we might need more lecture rooms because really at this point in time I teach at chapel. The new Lecture theatre (LT) are also a challenge as student cannot move around and engage in active student interaction. It is difficult to do group activity or practical formative tasks."*

LH: *"There is physical infrastructure on campus that limits you to different strategies in implementing curriculum for pre-service teachers."*

LI: *"I think as we go to lecture halls because of the large numbers maybe our lecture halls are no longer suitable for smooth implementation of teacher education.*

LJ: *Available space does not accommodate the number of students that the university has accepted to the programme."*

LK: *"Lecture rooms do not have enough space to accommodate all students."*

LL: "*Classes must be conducive for learning and teaching to take place. If a class does not have an air conditioner in a hot environment, it will cause students who are a big group to sleep, to be chaotic, and there is no learning that takes place in such environment. Most of the time when we go to our classes we find that classes are hot, air conditioners are not working. It takes time to get some body that can fix a problem."*

LM: *"Both new and old physical building have limited space to be used for lecturing."*

LO: *"lecture rooms are too old to suit the current standards. Current strategies cannot be easily applied. These lecture rooms were used when I was still a student at this university."*

LP: *"In other words we need tutorials and we need spaces we need to have them, let just say a handful of them, 20 to 40 they are working and you can see because in the lecture you not able to pass next each other to able to see what they do. Like we don't have spaces for tutorials to split them into smaller groups. So the infrastructure, now remember when they were 100 if I were to split them, I would split them into 50:50. The smallest venues that I have used accommodate 40 people. Those you can easily get free, then you would have to squeeze this 10 somewhere. So, somehow the tutorial was running."*

5.2.1.3.3 Technology and technical support

Czerniewicz, Ravjee and Mlitwa (2006) reported to the Council on Higher Education about the growing importance of integrating technology in implementing a pre-service

teachers' curriculum. The availability of technological materials and other relevant equipment to be used when teaching and learning was identified as a matter of urgency. Isaacs, Kazembe and Kazondovi (2018:115) argued that many academics have personally started to engage with ICT although suitable training and technical support is not available for them. Funds allocated to purchase appropriate and modern materials and equipment are not enough. There are delays from those who are responsible for requisition of "hardware and software" tools. Indeed, Faroa (2017:10) emphasised that *"ICTs can be viewed as useful in engaging students in meaningful ways and responding to students' needs and interests*".

Lubis, Idrus and Sarji (2018:289) asserted that ICT has provided many positive changes in the implementation of teacher education as a whole at various institutions of higher learning. Among other things are pointed out that the time consumed by covering the curriculum is well managed through ICT and quality has been improved with regard to teaching and learning. No one disputes the benefits of ICT in teacher education, but Agabi, Agbor and Ololube (2015) revealed that there are different elements of challenges from one country to another that obstruct the integration of ICT in teaching and learning in higher education.

Other things that had been identified as challenges by some of the participants include the absence of appropriate technological and different technical resources in the implementation of pre-service teachers' curriculum. Resources such as a data projector, computer labs, technicians, access to connectivity, smart boards, and computer software were major concerns for positive and smooth implementation of teacher education.

Participants stated that:

LB: "*There is a shortage of computer labs and computer technicians."*

LC: "But sometimes you find that resources when you go there is either power projector has been vandalised or stolen or is not working."

LD: "*Technical resources such as computers for students in the faculty is lacking. Students are expected to share computer labs with all other students in the faculty."*

LE: "*I would say as the time goes on there will be so much technological advancement in a teaching and learning situation. I would say the basic infrastructure, the basic resources can be there, but there is always potential development in terms of technological advanced teaching and learning situation."*

LF: "*There have been times where there have been problems like try to introducing how to use ICTs in the teaching of languages. I would find that the equipment is not working in the lecture theatres and that becomes a bit problem. I have taught at like about four universities, you would get into the theatre you find that equipment is working. You also not have to carry your personal lab top to the class. You just have to bring your USB to put it on then everything starts working. Here I have to use my personal lab top, sometimes I found that there was nothing working in the lecture theatre."*

LG: "*Sometimes you find that you want to have creative and innovative things that you would like to do. For the group is not easy even the network system is not that much functioning. One of the challenges we have it is the network system that is up and down, now and then."*

LH: "*I think we could do better, right now I have situations where projector is not working the whole semester. I have situation where you have to teach a class of 500 students without voice enhancements, volume enhancements. We don't have kind of technology that we need for complete interaction and complete academic interaction."*

LI: "*Maybe our lecture hall must have screens on the walls so that whatever you are doing everybody in the lecture hall whether they are 600 or 500 they are able to see and if they any activities that you want them to present everybody in the lecture hall must benefit. I would love to see us using modern technology because the pre-service teachers that we are working with are going out to the schools and we need to be current with the technology that is used to enhance the teaching and learning activities."*

LJ: “W*i-Fi is not always working in lecture halls. That alone distracts the teaching and learning for pre-service teachers. Overhead projectors were installed in lecture halls, but in most classes are no longer working.”*

LK: “*We experience technical challenges when it comes to technology. Computers that are placed to be used in lecture rooms are dead and normally not repaired, and that can only be recovered when we go for teaching in lecture rooms.”*

LL: “S*tudents must be exposed to seminars, but we don’t have venues for such things considering the numbers. We need a bigger space for our learning and teaching materials (learning aids) such as posters, charts. So we need a bigger space to design such materials. Resource centre is too old, it is always like that ever since 1983 when I was also a student here. We also need a computer place or lab. Not the one that we have for more than 16000 students. It can be said that one computer is for 20 students. We need our own computer lab in our faculty where student can learn on how to use computers. Smart boards are there in our classrooms but they are not compatible with the system that was put there. So they are not working. We use them as white boards instead of using them as smart boards. In some areas you find that the data projection is not working in some lecture halls.”*

LM: “*We don’t have useful laboratory as the faculty to do practical activities. We are depending on other faculty for assistance, which is not reliable. We cannot use their laboratory freely, or at any time we wish to do so.”*

LN: *“It should be a board (smart board), in terms of innovative resources, you need a USB and a lab top to do power point representations. We are still behind when we compare ourselves with other universities in terms of innovative resources.”*

LO: “*It takes time for our students to understand the technical systems in using technology in the faculty. We do not have full support as a faculty. Students are usually introduced to the use of technology at the later stage of their programme. Computer labs are very limited compare to the number of students we have as the university. We don’t have computer labs that the faculty can depend on them.”*

LP: "*In terms of using technology we are behind compare to universities that are in cities. We opted to use free software that was downloaded to do some graph sketching, because the university has failed to buy these types of software. I also feel like as a staff we need training. Let us use the correct word "re-skilling" or "up-skilling" because we need to be in the technology world, green economy, yes. Those are some of the challenges that are here."*

5.2.1.3.4 Human resources

Other than the issues of technology and technical support system that were raised by participants to the study, there was the issue of human resources or staffing in the faculty. The challenge was also evident by overcrowding in every module that is offered in the faculty. The students that the faculty has are not aligned to the number of staff in the faculty.

According to Mambo, Meky, Tanaka and Salmi (2016), sufficient and qualified staff is key in delivering and implementing a quality curriculum for pre-service teachers. Enough manpower is important to ensure that academics get enough time for both teaching and research. Administrative support from suitable administration staff is also pertinent to give academic more space for teaching and research rather than focusing on administrative issues. Among other challenging things, the staff establishment policy of tertiary institutions is not available to everyone for scrutiny. Therefore, it is very difficult to determine whether there is sufficient manpower for implementing pre-service teachers' curriculum. It is also believed that public universities understate students' enrolment when they report. Understating of numbers is done intentionally to cut costs that are supposed to be paid for by human resources (McCowan, 2018).

Participants were asked this question "*Have you encountered any problems/challenges when implementing curriculum? If any, what are those challenges?*" and these are some of their responses:

LA: *"Staffing is one of the biggest challenges at our university. We are not sure of the policy that governs the issue of ratio against the number of students that have been enrolled for the programme each year."*

LB: "*Shortage of* human *resources in the faculty distracts the strategies that could be used to get what is best out of the students."*

LC: "*I don't think we have enough people to share the burden that the faculty or department has to teach the number of students that we have."*

LD: "S*taffing, I will tell the reason why I said that. There are three-part time lecturers that we have used since maybe for four years. Their contracts have not been renewed, because of that they have only honours degrees. Now the challenge is to find masters people will only work for one year on a contract. So we did not find people who have master's degree to work only on one-year contract. So staffing is an issue, when we write down these curriculum documents we also write down that how many staff we need, but in reality we are getting the staff. We motivate for staff and documents go through senate, they go through all the structures, they go through government structures and then we don't get the staff."*

LE: "*Human resources is one of the persistent issues at the university. Numbers in the classroom don't lie."*

LF: "*I'm not the only one who is teaching the module but I hope for more assistance. I would still recommend for another colleague to come on board. Burden is too much for us."*

LG: "*There are those that become a long term challenge sometimes, like staffing. Last year we made a request and offered opportunity to get markers. As much as we have got those challenges I am not very sure if and I can't say they are not taken care of and sometimes I can't say the response is quick and positive."*

LH: "*You do need full package of human resources in order to implement curriculum without glitches. Other than that, it is very hard to do the best."*

LI: "*It is not easy to have small groups of students in the class rooms since we don't have manpower to teach many group of students."*

LJ: "*I'm the only one who is teaching level three students and the module is done by everyone. I don't think is possible to do the best, we need more people to come and help in teaching these students."*

LK: "*I've been here for some time and I've been hoping for the best, but since then I've been in other universities as well. Teaching here is not easy. You are teaching so many students alone. In other universities you find that they share module according to a particular proportion."*

LL: "*I believe number one is human resources, let us start with human resource. Ever since I joined the university I have been teaching a class of a thousand students alone. So it shows that there is no balance between a lecturer and students ratio at the university. We have big classes and less manpower. So that for sure is compromising our quality, no matter how good I can be in teaching, it means I am going to be failing somewhere in terms of administration because numbers are too big, sometimes marking becomes a problem, I have to rely on markers from outside who have not taught my students, and then I must give them my scripts so that they can assist me finish marking. At the end of the day it cannot be same if I were to mark myself, I can do better because I know what I taught the students. The other person would not know, he relies on the memorandum, and most of the time there is no insight of what was done in the classroom. Those are little things that we need in terms of human resources."*

LM: "*Since I have stated that the module I am teaching is involving practical work, that means we need more staff, which is not the case for now. To give quality work, we need to have more people for the module."*

LN: "*Human resources are important because skills that we have to develop in English language education is reading and writing. You find students who are competent in speaking when they come here, but in reading and writing they are not. To develop*

reading and writing skill you need to have small sizes of classrooms to keep them writing activities, and give time for feedback."

LO: "*Personally, personal resources are very important before we address any other issues for teacher education. We cannot manage at all. It's like the issue is not resolved and there are signs for that."*

LP: "*For me, I think the personnel is not enough. I think I functioned better when I had 100 students. When I have 200 students I feel over worked. Remember now if they are 200 you teaching from the front, when you see that these people are behind, so I think the personnel, in terms of staffing. You got to have high quality lecturers. I am trying to say the personnel that you have I have learnt it is very important. The personnel, I am saying it is high quality because you got to make sure that the subject that you want to implement has people who expertise. Expertise in terms of the content, expertise in terms of the pedagogy because we are teachers we are not only dealing with crunching numbers. We want to talk about how we teach, so you need to have staff component that can actually strike a balance between the two. Such that the content is very clear and other things."*

5.2.1.3.5 Other respective challenges

On top of the common challenges stated above there are those that originated from different participants, which were not common, but could not be ignored. These challenges affect the course of implementing the pre-service teachers' curriculum for different departments, academics and modules. Thirty-eight percent (38%) of participants indicated other challenges apart from the common challenges alluded to by all participants. Below are challenges that were stated by different academics from different angles and experiences:

LB: "*Shortage of funds as in capital and there is delay in deliveries."*

LC: "*When implementing curriculum sometime the challenges that we encounter is that you find things are changing very faster and the curriculum might become*

redundant is talking to what is happening out there, as a result you might be forced to come with things that are not actually said in the curriculum that is given to as a mandate that you look up to by the higher education, because you want to catch up."

LH: "*I believe anyone who is in education in general and in teacher education to be specific would have experience some challenges. One for me, I feel that students that are brought and come to us are not prepared for higher education, in particularly for becoming teachers. They come here with a lot of challenges that range from language, understanding of what it means to be at university first and also what it means to interact academically towards becoming a teacher."*

LI: "*I would say I have encountered challenges, because when you implement curriculum especially as lecturers when you go to the lecture hall you engage with these pre-service teachers and find that many of them are not able to apply theory into practice in showing that they understand the curriculum that you are presenting or the module that you presenting and they don't really have potential to align it with the actual classroom practice. I am not saying all of them but I find it very difficult to engage them."*

LL: "*My greatest challenge at the university is that the university environment when we started did not allow the bridging of theory and practice. So university would concentrate more on research to the neglect of professionalism."*

LN: "*There is also a challenge with the faculty of education of constant changing in curriculum to be in line with the school curriculum, so as result you find that as soon as you settle in the curriculum it is time to change, like there was OBE now we moved on to CAPS, and MRTEQ as well. I think those are some of the problems in implementing curriculum because curriculum becomes old so quick."*

5.2.1.4 Challenges that are related to teaching practice

5.2.1.4.1 Code switching and language barrier

Changing from one language to another while the process of teaching and learning is in progress keeps teaching and learning going at an uneasy pace. Learners' home language was used to explain some of the key issues and aspects of different subjects. Code switching was also used commonly in the informal assessment during the process of teaching and learning. Challenges are experienced when formal assessment is administered, where there is no opportunity for a subject teacher to explain some of the issues in learners' home language. In short, learners may look good in the classroom when teaching and learning is taking place, but the results of formal assessment contradict what is happening during the teaching and learning period (Chavez, 2016; Childs, 2016; Hahl, Järvinen & Juuti, 2016).

Among one of the reasons for teachers and learners to exchange one language for another is the language barrier. More than 86% of the subjects' curriculum is implemented in English at secondary schools. For that reason, teachers are expected to be fluent in English as it is used in teaching and learning of all subjects except the home language. Most of the pre-service teachers and learners find it difficult to comprehend content of the respective subjects due to the barrier of the language of teaching and learning. Learners also do not easily understand questions that are asked during assessment period. That may be caused either by the ambiguity of the question asked, or by a barrier to language of teaching and learning from the side of learners (Flynn & Curdt-Christiansen, 2018; Macken-Horarik, Love & Horarik, 2018).

Participants were asked this question, "*Are there any challenges you have encountered that are related to teaching practice? If any, what are those challenges*?" These are some of their answers:

LA: "*Code switching has been the culture to teaching for most of the student teachers. I don't know if the language barrier is with the student teachers or learners. I have also notice that most of the lessons have been rehearsed by the student teachers with the learners. They did not display its originality."*

LH: *"I teach compulsory modules during practice teaching I am expected to go for teaching practice and assess and evaluate student on a particular subject. That's ok, the problems that may be there for me or what I have seen is the same thing that I have eluded earlier is that I find students in my view who are not prepared or not ready or we teach student who do not understand the value of being a teacher."*

5.2.1.4.2 Mentoring of pre-service teachers

Mentoring is expected to be done by mentor teachers who are entrusted with the responsibility to mould pre-service teachers during teaching practice period. According to Modipane and Kibirige (2015), very often, the expected mentoring is not taking place at schools. Lack of resources and mentoring skills from schools and mentor teachers are identified as some of the things that make mentoring ineffective. Nkambule and Mukeredzi (2017) argue that weak mentoring of pre-service teachers is caused by a weak partnership between the universities that are responsible for teacher education and mentoring schools. Beside, Tshuma and Ndebele (2015) emphasise the importance of identifying suitable mentor teachers for quality mentoring of pre-service teachers. Identifying of mentor teachers remains a responsibility of the tertiary institution. Identification of these mentors should be based on what that tertiary institution wants to achieve during the teaching practice period.

The researcher is of the view that teachers who are expected to be mentors of pre-service teachers during teaching practice are not clear about their responsibilities. These in-service teachers are given the responsibility of mentoring without being given any guidance. Moreover, officials of the university failed to provide the researcher with evidence where they have met mentors to discuss expectations in order to have a common understanding with mentors. There is no memorandum of understanding between the university and schools on teaching practice that the researcher could be provided with by the university. The researcher tried several times by pleading for a memorandum of understanding without any success.

Another question that was asked to participants was, "*Are there any challenges you have encountered that are related to teaching practice? If any, what are those challenges*?" Participants said:

LC: "*Sometime when student teachers go out, you may find some of them telling you that the mentors are not giving them support and we not so sure whether the student educator is trying to pre-empty that please be lenient when you are critiquing me because, they will tell you hey I haven't had a mentor to care of me or the mentor here is the principal and is always been out attending the meetings. So, I'm not so sure whether the student educator is trying to appeal to your lenience."*

LD: "*Yes they are challenges such as distance where students do practice, staff to assess students felt that students were not being mentored and assessed, some of the schools are necessary not receiving the best support as teachers are also struggling in interpreting the curriculum."*

LJ: "Most of the challenges have to do with mentorship. Some mentors are new and would want some orientation as to what is expected of them by the university. Some of the student teachers find it difficult in analysing school curriculum content."

5.2.1.4.3 Conditions of teaching facilities in schools

Infrastructure, furniture, technical facilities and books that are not suitable and sufficient to implement curriculum in some of the schools frustrate teaching practice for pre-service teachers (Mpolomoka, Muyangana, Banda, Dube, Mabenga, Kangwa & Muyoba, 2017). On the other side, Liu, Tsai and Huang (2015) argue that in a school where digital facilities are available, pre-service teachers better understand how to use these facilities compared to their mentor teachers. Pre-service teachers find themselves teaching their mentors on how to integrate technology instead of being guided by mentor teachers. Regardless, lack of infrastructure does not only directly affect pre-service teachers when they want to use it for curriculum implementation; learners at schools also become demotivated by the lack of physical facilities that could enhance teaching and learning (Adesua, 2016).

Apart from the fact that students are made aware of the conditions that prevail in schools, some of the conditions do not allow teaching and learning to be implemented. The researcher upholds that lack of infrastructure and other teaching facilities do not only affect the performance of pre-service teachers, but also the eagerness and intention of becoming a teacher. Physical facilities play an instrumental role in producing a good outcome.

The next question asked to participants was, "*Are there any challenges you have encountered that are related to teaching practice? If any, what are those challenges*?" and participants' answers were as follows:

LE: "I have seen that in quite few instances where student teachers find it difficult to execute the knowledge, the practical level in front of the classroom because of technical drawbacks, like the basic facilities in the classroom. It is a bit of the problem for some of the students who are practicing rural areas. If something could be done to rectify that situation because those students are at the disadvantage position because of being placed in those schools. It is always that gap of infrastructure."

LK: "Students are complaining that they are not getting materials that they supposed to be using to deliver their subject."

5.2.1.4.4 Pre-service teachers' preparedness and behaviour

Ma and Cavanagh (2018) identify the integration of theoretical programmes and practical programmes as something missing from initial teacher education. Thus, pre-service teachers find it difficult to adapt during the period of teaching practice. Pre-service teachers lack the confidence to face common challenges found in schools. Furthermore, Roble and Bacabac (2016) affirm that pre-service teachers do not show any confidence in selecting suitable strategies of teaching and classroom management. Above all, Bannister-Tyrrell, Mavropoulou, Jones, Bailey, O'Donnell-Ostini and Dorji (2018) state that most pre-service teachers struggle to manage exceptional learners in the classroom, be it those learners who are talented and gifted,

or those who are unable to cope with the pace of learning in the normal learning classroom.

Beside the unpreparedness of pre-service teachers to teach, Crosswell and Beutel (2017) identify extraordinary behaviour from pre-service teachers that is caused by the unexpected surprises of a too heavy workload that is experienced during teaching practice, and lack of support from teacher mentors.

As a result, Nesheim, Moran and Pendleton (2014) posit that mentors experience unpreparedness of pre-service teachers during teaching practice. Some pre-service teachers have no clue on how to start their lesson and also have no idea of how to end their lesson. Mentors also notice negative behaviour in some of the student teachers while they have their teaching practice. Academics find it difficult to give realistic and accurate scores when they assess pre-service teachers due to poor performance of pre-service teachers in the classroom.

Participants said the following in response to the question of some of the challenges that related to teaching practice:

LG: "Preparedness of our students is not really enough. You arrive at teaching practice class wherever they are placed, you realised that they don't really have much. In terms of methods they are not really prepared. I thought myself that they would be prepared when they are there, but how much theory they leave the university with when they are going for teaching practice. Sometimes I struggled with that. I found them lacking when it comes to methods, teaching aids, and other material that they have used."

LO: "Students lack professional discipline and commitment. Mentors have submitted that student teachers absent themselves from teaching practice after they have been assessed by the lecturers from university."

All pre-service teachers were supplied with journals as a guiding document for teaching practice. Documents were designed separately for each level from level 1 to level 4. BEd 1 pre-service teachers were expected to visit schools for experience through observation in term three, in the second semester. First-year pre-service

teachers were expected to observe their mentors on school functionality, classroom management, and teaching approaches. The faculty handbook shows that BEd 1 students had their module on classroom management in the second semester when they were back from their school experience. Additionally, first-year students would be doing their pedagogical studies on curriculum development only in year two, first semester. A comparable case happened to Postgraduate Certificate in Education (PGCE) students where they had visited schools for teaching experience every Wednesday, in semester one, before they had acquired skills on educational management (UNIZULU, 2019). This also indicates that even if students were exposed to further work integrated learning (WIL), they would still find it difficult to be competent during practice teaching.

5.2.1.4.5 Staffing and manpower to assess pre-service teachers

Participants revealed so many challenges that emanate from a shortage of academics when the university offered the period of teaching practice. Challenges included the different ways in which lecturers assessed pre-service teachers. Academics experienced those challenges while rushing to reach all pre-service teachers that are part of teaching practice during that specific period.

Participants said the following:

LB: "*There is issue of pre-requisite for students to go for teaching practice. There is always shortage of teaching practice supervisors. Students change schools up to the last meeting due to the fact that there might be many students with the same subject place in one school."*

LF: "*There so many problems with our teaching practice, the instrument that is used for our teaching practice creates many problems. The time that students spend at schools, the number of visit that we make it so different from other universities. We only given a certain number of weeks (days) while we have large number of students*

to be supported. Someone students panic or experience anxiety on that day and it does not show a real picture of the instructional process as prepared by the students."

LI: "*During the school visit when our students are in schools I have noticed that we as lecturers, it's like we not giving the uniform information to the pre-service teachers in relation to lesson presentations, the steps that the teacher should follow that will make a good lesson to learners, especially the PGCE students, many of them are not well vest with the appropriate teaching strategies that they can employ to enhance the understanding of the learning content and sometimes you find that many of them just present the lesson for the sake of impressing the lecturer that is evaluating the student.*

LM: "*We have been normally allocated with many students to assess during teaching practice period. We find it not easy to do justice on their assessment. They are too many to handle."*

LN: "*Challenges with teaching practice, firstly you find that the placement of students it's not done in acceptable radius. It is only year level 3 that go to teaching practice. The rest of the student in other year level still need to be taught so we end up juggling so many activities during teaching practice. Student who are struggling during school experience they are visited until the lecturer is satisfied and proper guidance is provided but time constrains may force one to give the responsibility to other colleagues who might not focus on the gaps that one had previously identified from the student."*

LP: "*The only problem that I usually have, I don't know how would be resolved. I would be required to go and evaluate students in schools and at the same time I would be having classes to teach here. You find now during teaching practice I am doing two things. I have to rush to schools and come back or I have to suspend classes and go to teaching practice when I come back I have to rush over the content. So is very difficult in terms of balancing evaluation of students during teaching practice and teaching."*

5.2.1.5 Resources that are necessary for implementing curriculum for pre-service teachers and availability of necessary resources

There are primary resources that any institution of higher or basic education cannot compromise to have in order to implement curriculum. These resources are regarded as fundamental resources for implementing curriculum for pre-service teachers at any tertiary institution (Xu & Brown, 2016). The fact of the matter is that most universities do not sufficient resources due to the rapid evolution of technology (Atzori, Iera & Morabito, 2017). Besides the rapid changes in technology, Eggleston (2018) avows that there is a shortage of funds to buy sufficient resources. Sometimes funds are misdirected due to a lack of consultation.

Participants were asked the following questions: *"What resources are necessary for implementing curriculum? Are all necessary resources available*?"

Participants' answers are revealed in the table below:

Table 4: Necessary resources and their availability for implementing pre-service teachers' curriculum

Participants	Necessary resources	Availability of resources
LA	*Personal resources, technical facilities and reliable network.*	Not adequate
LB	*Human resources, capital as in funding, computers, computer labs, lecture halls.*	Not adequate
LC	*Teaching technology as well such power projectors and computers.*	Not adequate
LD	*The staff, grade R classroom.*	Not adequate
LE	*Human resources, technical facilities, classroom, and physical resources.*	Not adequate

LF	*Modern technology in the classroom, such as lab tops.*	Not adequate
LG	*Lecture rooms, air conditioning in suitable lecture rooms and more staff.*	Not adequate
LH	*Infrastructural resources, academic resources, human resources, technological resources and flexible lecture rooms.*	Not adequate
LI	*Appropriate equipment for technology and staff.*	Not adequate
LJ	*Big and suitable lecture halls, appropriate smart boards and air conditioner in lecture hall.*	Not adequate
LK	*Physical resources, technical staff and more lecturers.*	Not adequate
LL	*Human resources, computer lab for the faculty, modern smart boards, recent books, and adequate resource centre.*	Not adequate
LM	*Useful resource centre, well-conditioned classrooms and strong Wi-Fi.*	Not adequate
LN	*Morden smart board, power point projectors, and human resources.*	Not adequate
LO	*Lecture rooms in good condition, equipment for practical work.*	Not adequate
LP	*Staff, relevant technology and lecture halls.*	Not adequate

Table 4 above reveals all resources that are pertinent for teacher education according to all participants. It also indicates that not all resources that are significant according to participants are sufficiently available to implement pre-service teachers' curriculum. Hundred percent of participants were not satisfied with the condition of the lecture halls, staffing, technical facilities, practical materials, the condition of the resource centre, and availability of recent text books at resource centre.

5.2.2 Determining how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparation

5.2.2.1 Approaches used to overcome related problems or challenges in curriculum implementation for pre-service teachers

Firstly, it must be acknowledged that in most challenges facing South African institutions, the academics do not have powers vested in them to resolve those challenges. Thus, policy and procedures in the code of conduct for staff state that the only thing that academics can do is to report hiccups to their immediate supervisors (UNIZULU, 2013). Participants indicated that challenges are reported, and then some of those challenges are not solved in good time. Other challenges are not solved at all and participants cannot understand why these problems are not solved. They find themselves burdened with old problems that were reported a long time ago.

5.2.2.1.1 Approaches to overcome overcrowding in lecture halls and shortage of human resources

Nigeria has begun the process of privatising higher education due to the steadily increasing cost that government had been carrying. One cannot dispute that citizens of the country are affected the most as all the costs have been shifted to them (Adetunji, Adetunji, Adeleke & Madubuike, 2017). Regardless of the major decision that Nigeria took as a country, Muthusamy (2015) argues that quick intervention is needed to overcome challenges that come with overcrowded lecture halls. Moreover, if overcrowding is allowed, it compromises the quality of education for students. Quality of education that is compromised tarnishes the qualification, knowledge and skills acquired and the reputation of the tertiary institution. Overcrowding of students in lecture halls cannot be unilaterally addressed; shortage of staff has been an issue for many years and other universities have opted for technology to address a challenge. Having opted for technology, human resources are still needed to operate technology without any pressure to deliver quality education (Aibieyi & Henry, 2015).

Consequently, overcrowding in lecture halls has been experienced by academics of the rural university for more than a decade now. Overcrowding is an issue that does not need to be reported by any junior or senior staff: The problem has been affecting curriculum implementation for too long already. In short, there is no clear strategy that the senior management of the institutions has shared with academic staff on how they plan to solve the challenge.

Participants responded to the question of how to deal with overcrowding and shortage of human resources and said:

LA: "*I report to my immediate supervisor when I try to address challenges that are there. I don't know where she takes them to, because I don't know all the structures that supposed to work on those challenges."*

LB: "*There is always temporal solutions such as contract lecturers and lecturers who are part time."*

LD: "They are not treated, they are ignored."

LO: "As the faculty, we are trying to share most of the challenges, but there are those you cannot resolve on as the faculty, and they are persistent. We are hoping for better in future."

5.2.2.1.2 Approaches to overcome shortage of physical Infrastructure

Abdullahi, Yusoff and Gwamna (2017) suggest that related research studies may be consulted to overcome challenges that are caused by the lack of physical infrastructure. Furthermore, if poor physical infrastructure is used to implement curriculum, that alone may weaken the quality of the curriculum to be taught to pre-service teachers. Dania, Obro, and Owhorhu (2016) argue that tertiary institutions must employ a leadership team that knows and understands how to develop physical infrastructure at a tertiary institution. To find such individuals, the university must headhunt and consider the most relevant experiences for the situation at hand.

Additional to using related research studies and experienced individuals to resolve physical infrastructural challenges, Aithal and Aithal (2019) enlighten that tertiary institutions must understand the competitive environment of the higher education sector. Tertiary institutions compete for research outputs and students. Thus, any tertiary institution that wishes to survive must invest in suitable and modern physical infrastructure.

The researcher believes that the shortage of lecture halls and lack of appropriate lecture halls cannot be solved solely within the faculty of education. Academics who are responsible for implementing pre-service teachers' curriculum do not have the power to deal with that. The only thing that academics can do, is to report all the challenges that come with physical infrastructure. Participants indicated that they repeatedly reported that much of the equipment in lecture halls is broken or out of order. Moreover, the air conditioning is poor and in many of the lecture halls not working, thwarting the effort to have a smooth teaching and learning process. Lecture halls are not furnished with relevant equipment to enhance quality teaching and learning. Although all challenges had been reported, it has taken a long time to be fixed. Some of the challenges have never been overcome at all, and teaching and learning becomes even more of an effort in that environment.

The participants responded as follows to the question of, "*How were related problems/challenges treated at your university*?":

LC: *"One will say because it is the university responsibility to provide for venues for teaching that are conducive where curriculum should be implemented without any hiccups. If they are not there, the implementers of curriculum will find themselves challenged and you are not able to make sure that the curriculum is implemented to its finality without having interruptions or making some short cuts."*

LD: "*They are not treated, they are ignored."*

LF: "*Sometimes they do respond, most of the times nothing happens, you report something that is not working and nothing happens or it takes months before something is fixed."*

LG: "*Sometimes we submit requesting for help, sometimes it comes back positive and sometimes it does not come back positively. At the moment what I can say is that as we move with the process of addressing the challenges, challenges they remain challenges some of them since I have arrived in 2015."*

LH*: "Some not treated, because the problems I had at my first year here I still have to this date. So, not treated."*

LK: "*They keep on promising, although for some of the challenges they attended on them without assisting results."*

LM: "*Most of the problems need higher structures to be solved. My scope is very limited. We are used to them, it is normal, they are part of us."*

5.2.2.1.3 Approaches to overcome lack of technology and technical support

A tertiary institution without well-established digital infrastructure in these years that is sufficient evidence to classify that tertiary institution as disastrous. Although many rural universities are still lagging behind in using digital infrastructure, they are trying to improvise with different strategies (Aithal & Aithal, 2019). Sayan (2016) identifies the use of WhatsApp for academic programmes as one of strategies to be used when there is a large number of students for a specific programme or module. WhatsApp also assists academics when a student-centred approach is followed to teach a module or programme.

Besides, Mampane, Omidire and Aluko (2018) declare that using modern technology and informed technical staff erases the era of the traditional approach. Using technology correctly also works as a strategy for many universities that work towards

decolonising higher education in South Africa. Hence, pre-service teachers should be made aware of this evolution in technology and its technical aspects.

Therefore, participants commented on how they try to overcome the challenges that emanate from the use of technology in implementing a pre-service teachers' curriculum. In the following quotations, participants revealed the frustrations that developed from a lack of modern technology and poor technical support:

LI: "*We report and make motivations that this is we require and these are resources that would make us at least prepare pre-service teachers for the reality but the feedback that we get is that they will provide and they really not taking it very serious, they are not taking as the priority since teaching and learning is a core business of the institution."*

LJ: "*I normally don't get a positive response, and it is demoralising."*

LL: "*It takes time to get some body that can fix some of the problems. For some, nothing is happening."*

LN: "*If you look at challenges of going to class and waste a lot of time trying to set up things, and nothing has happened then you have to go through other challenges. It seems like nothing really works."*

LP: "*So I am simple saying the challenges sometimes are in terms of the little we have how do we make sure is secured. Yes, they are building, yes they are trying to put technology in these venues but they get vandalised. I guess maybe is students or people from outside I don't know, but what I have seen is like you do the same thing over and over because it gets stolen."*

5.2.2.1.4 Approaches on other respective challenges

Participants presented the strategy that the faculty has implemented to train teachers who possess strong content of different subject. On the other side the handbook of the faculty under study shows that all content modules for primary school teaching are taught in the faculty from year one to four (UNIZULU, 2019). This can cause some lecturers to have more workload than others in terms of their specialisation.

A participant said the following:

LP: "*Those are some of the challenges, of cause, there have been issues around that how we improve the issues of quality education. The university has actually streamlined our programmes such that teachers for high school are actually trained from other faculties, for instance if you are doing maths for high school you are taught the same maths as the BSc person. Of course that has its own problems, but we say at least they have higher content. If you do English, you have to go to the faculty of Arts so it has its own complications. We are managing through negotiations that how can we better this and how can we do this. That is how we do it.*"

5.2.2.2 Approaches used to overcome problems or challenges related to teaching practice

Adu and Abongdia (2015); Agudo and de Dios (2016) consider the communication or feedback to the university by mentors as pertinent strategy to overcome challenges related to teaching practice. Additionally, early school experience can play an important role to help pre-service teachers identify themselves with the career of teaching. According to Ausiku, Likando and Mberema (2019), training of teacher mentors before they had been allocated to students cannot be implemented in order to improve teaching practice. In this vein, Chipato (2017) argues that all qualified teachers are capable to mentor pre-service teachers. There is no need to train them for mentorship.

Hence, participants sounded very emotional when it comes to the manner in which issues that develop from teaching practice of pre-service teachers are addressed.

Most of the challenges remained unresolved for many years. Some of the challenges are common to those challenges experienced in the teaching and learning period.

The participants said the following:

LA: *"I have submitted all the issues that I found during the period of teaching practice. It is up to them in the department responsible for teaching practice if they overcome them or not."*

LB: *"Temporal staff members are employed but they only come in the afternoon some students do not want to attend this afternoon classes"*

LD: *"We have been facing these challenges for many years and people tried to solve them and it cost down to money."*

LE: *"The institution takes all the problems that we have encountered during teaching practice and they try to solve it in the coming year."*

LG: *"When we finish teaching practice we are given the opportunity to write a report. I personally submitted the report with all recommendations. I do not know why the coordinator does not analyse the results to inform the practice. These reports can provide us with more data in improving our teaching practice."*

LH: *"We contact specific office for teaching practice to handle all logistical problems that one faces out there, but as to how to make sure that students are prepared to go out for teaching practice, that's a complex matter because it starts from and talks to the entire programme. This is not only a university problem as such, is bigger than that because it starts with the kind of students that we get. It's depending on the level at which a student comes with at the university, it determines the kind of interaction they will have when they get here. Last year we had INDABA to talk to schools that are actual bring in students to our university to say we have a problem as a community and how are we going to do with that."*

LI: *"When we finish the teaching practice session we always get together in meetings and do the post-mortems and report flaws and the challenges that we see amongst pre-service teachers, and you notice that some of the lecturers are trying because when you go the following year you will notice that there are improvements though are not yet there where we wished them to be before they join the work environment."*

LJ: *"They are those which is difficult to resolve on them due to financial constraints. We also have different suggestions and it is not easy to reach the consensus when it comes to teaching practice issues."*

LK: *"We are trapped to the same and old issues, there is no solutions. We kept on reporting to the teaching practice coordinator."*

LL: *"There will be no more students that are going to be transported now because we trying to save money. At the same time, we also want students to get a feel of how it is like to be a working person. That is going to give students that kind of experience of being a working. Students staying at their respective homes for teaching practice."*

LM: *"I don't think that the problems we face out there the university has something to do with them."*

LN: *"I think is very difficult to resolve the problems, because somehow the number of student we have is too big. The number of student does not match the staff. Unless if they can give us staff, more staff. That is when the issues of teaching practice can be resolved. The other universities happened to have the same radius, but it cannot happen here because of the shortage of staff."*

LO: *"I try to ask my colleagues to check whether they have had face the same challenges or not. If they have had faced the same problems, I asked for different opinions."*

5.2.3 Investigating views of academic staff on continuous curriculum review for pre-service teachers' preparations

5.2.3.1 Views of academic staff on what informs curriculum review internally

Participants to the study did not give similar answers about what informs curriculum review internally. There were participants who indicated that they were not playing any part to influence the review of curriculum. Some of the participants revealed that they understand the process that informs the curriculum review. Among the participants, there were also those who had no clue at all about what informs curriculum review internally. The university has a policy on programme reviews that states the following: *To remain relevant and responsive, the life cycle of academic programmes must always respond to the market forces; the needs of civil society and the economy. South African higher education faces multiple stakeholder demands for greater responsiveness to societal needs and the programme accreditation system seeks to be responsive to the objectives of higher education transformation as reflected in various policy and legislative documents* (CHE, 2004).

Participants said:

LB: "*Department of Higher Education and Training (DHET) pronounce that curriculum need to be reviewed every after three (3) years."*

LC: *"Curriculum review is informed by the requirements by the DHET, and also within our faculty we share information about what is happening around us and also looking at what is appropriate for the student to be able to go and deliver when he completed his studies."*

LF: *"I would think of the needs of the students, the needs also to look at our offerings, what we offer, if still relevant and think those are the things the review of curriculum should be based on them."*

LG: *"It is time frames that are mentioned by the structures like the council of higher education (CHE). When the curriculum is being approved, it is approved for certain period of time. So obvious we have to remain accredited for a particular programme. So for us to review that it is more based on the time frame, but also what is the current trend and what is going on around us."*

LH: *"Once a programme has been approved, there is only a percentage of movement that academics have once it is approved. So, I will speak for within that, let us say you can change only 10 percent of the content or of the structure of the entire module for an example. So, for us what proms they need to review certain things, we look at trends in terms of practice with other institutions on a certain aspect. We also look at how knowledge on that particular area has changed over the years and how it impacts practice for teachers. Not that the idea is to teach students and give information. We want to prepare students to deal with what is coming no matter what it is, shortly that's what drives curriculum review internally."*

LP: *". The rules allow that you can do a certain modification for a certain percentage to address certain limitations of your module or programme."*

It can also indicate that participant were part of the Recurriculation of the current MRTEQ aligned programmes but they do not have any guidelines on what informed programme review. This can imply that most academics do need read and have understanding of programme qualification Mix (PQM) of the university understudy par participants also said these:

LD: *"I have been involved in one curriculum review, I cannot remember what it was, but I was just part of the panel and I was not directly involved in developing the self-evaluation report (SER). I had to do my own documents on teaching portfolio. I'm guessing that there is chance that our BEd programme could be reviewed in 2022. I don't know how the internal process goes if there is. Nobody told me how to do that, there are no instructions for that you should be reviewing curriculum every year internal or whatever."*

LN: *"I think firstly that it should involve someone who is objective and someone who is knowledgeable about discipline itself. I think it should be set criteria of the review that what it is looking for. The review can go beyond that."*

5.2.3.2 Views of academic staff on why the curriculum at higher education level is under constant review

Frequent changes in curriculum needs of the society had been identified as the main reason to frequent review of curriculum at higher education level. The strength of the university in responding quickly with its PQM to socio-economic trends, challenges and opportunities, is one of the competitive advantages that puts it ahead of competitors and makes it attractive to students, sponsors and the industry. This view resonates with Mayaba's (2015) assertion that the needs of the local community that the tertiary institution serves must be considered when programmes are developed. Designed programmes should not only be developed based on the needs of the national community.

Participants expressed these views:

LB: *"This is done to check if it is still relevant to needs of the society the institution is serving."*

LC: *"Curriculum has to be reviewed I mean these student educators they are meant for the market out there. So if things are changing out there in the market then the curriculum has to be reviewed to catch up because we moving in a very fast way in terms of technology, even the teaching requirements what one should be taught are changing, the curriculum has to be changed to fit what is required in the market."*

LE: *"Development of curriculum is primarily based on the review process. It has to be reviewed to meet the challenges of the curriculum needs in terms of its relevance. Curriculum has to be relevant to the time, to a particular generation is being delivered*

to. There are so many aspects that calls for curriculum to be reviewed with specific purpose."

LF: *"As I said I would think the needs of the students' change, the needs of the country change, and the experiences of academics. The kind of a teacher I was in 25 years ago when I started is different now. I think it responds to the needs of students and the country. In fact, even the international community because some of our student after qualification they go and teach in other countries."*

LG: *"The main purpose of higher education is to meet the current challenges of the country. So now they keep reviewing because old programmes may be talking to old things while here we train people to go to world of work, and the world of work is the dynamic system that keeps changing all the time."*

Other reasons apart from changes of societal needs, research practices, schools' curriculum, educational trends and demand of teachers in schools had been identified as reasons to review curriculum at higher education level. Furthermore, it is stated in the CHE document that the HEQC may delegate the responsibility for reaccrediting its own programmes through a process of institutionally managed programme evaluations to the institution, and it is therefore important to have a system that is sufficiently robust to meet these needs (CHE, 2004).

On the question, "*Why is the curriculum at higher education institutions always reviewed?*", participants said:

LD: *"Quality assurance will be my reason."*

LH: *"Trends, what works, research practices, practices on the ground for people we serve, that's it, that's what drives curriculum changes."*

LI: *"So if we stay with the same curriculum I think we will end up being the faculty that is grooming teachers that are going to be irrelevant in the real environment where they are expected to implement the curriculum in the schools."*

LJ: *"Curriculum has to be reviewed I mean these student teachers are meant for the market out there. So if things are changing out there in the market then the curriculum has to be reviewed to catch up because we moving in a very fast way in terms of technology and expectation from the department of education as the employer."*

LL: *"Many of our teachers are not employable because of that. It is even worse when you pair Life Orientation with Languages. We have got many of them that are frustrated. So if the curriculum is reviewed we have to take into consideration such things. What is it that the province wants, what is it that the nation also wants."*

LN: *"I think it has to be reviewed because there are so many new trends at higher education. We must also give pre-service teachers a more current curriculum. For an example the decolonisation of the curriculum. If we do not review our curriculum we will be actually marginalising of African texts."*

LP: *"Policy requirements. The department of education has changed policies so we need also to change how we train teachers. When you look at maths curriculum there was a time where by geometry was not the part of school curriculum, the reason was not there. There would be the question that why do you need to train teachers in this field which is no longer relevant. So, for me those are some of the reasons of curriculum review."*

South Africa as a country is healing from the wounds of apartheid that advocated segregation of universities. There were universities formally known as white universities, and those that were formally known as rural universities. Rural universities were dominated by the blacks. So, it was identified that rural universities were disadvantaged compare to other universities. Therefore, the democratic state resolved after democratic elections to review the curriculum for higher education institutions (Edwards, 2015; Ndimande & Neville, 2018). Schoenfeld (2016) therefore notes that there are different trends that cause a need for the curriculum to be reviewed. Evolution from demands and needs of the society are some of those trends that oblige a sitting government to review the curriculum in force. Beside, some of the trends are the political views of the ruling political party.

5.2.3.3 Views of academic staff on how reviewing of the curriculum impacts on curriculum implementation

It is never a smooth journey to implement curriculum at any level after changes. While the change may be beneficial to the society and community that the university is serving, it may not be easy for academics as the implementers of curriculum. The reality is that academics experience heavy workloads during the transition period from an old curriculum to a new curriculum. Beside challenges that are experienced during transition, the new curriculum never fills all the gaps discovered from the old curriculum (Glatthorn, Boschee, Whitehead & Boschee, 2018). Clifford and Montgomery (2015) reveal that academics have no power of decision about what is included in the content of curriculum. That alone means academics need more time to understand the new curriculum while they are implementing the same curriculum.

The participants said the following:

LA: *"it is not easy, throwing away something you have been doing for a while and you have been used to it, here is something new that you have to do."*

LB: *"It always brings new knowledge and improvement. So it demands us to work hard to adapt on changes."*

LP: *"Look, change is always painful because sometimes you part with what you like, currently we are implementing programme that is set to be aligned with MRTEQ. That is what we talk about. But when MRTEQ comes in it says to us, you must have intermediate qualification, you must have senior and FET qualifications. What did we have before? We had intermediate and senior phase, we had FET separate, and we have particularly grown for myself in this intermediate and senior phase and FET. We have got accustomed to it. We know what it can give and we are told part with this one and there is always be a frustration, particularly for me."*

LC: *"Right, review of curriculum is impacting on the implementation of the curriculum in the sense that sometimes especially when we have two curriculums that are running at the same time, the one is being abandoned and the new curriculum coming in, we*

find is either you end up having an overload of teaching as some students need more support to be phased out"

LD: *"It depends on what we mean of the reviewing of the curriculum. So we have through three changes of BEd foundations programmes in the last few years. It was implemented in about 2010. Now we have this new curriculum. So in a sense redoing curriculum is reviewing of the curriculum in a sense that we have this curriculum."*

Another pertinent issue raised referred to involving every member of academic staff when curriculum changes were effected. It was stated that if you were not part of the team that was doing the review, the curriculum changes were more straining to implement. Participants summarised that as follows:

LG: *"I am not sure how to answer this one. I think when we are reviewing curriculum most people must be involved in the reviewing of the curriculum. You might actually not be agreeing with some of thing that are part of the package of the module. The process of reviewing itself may need to be look at."*

The issue of space is difficult to ignore if one is addressing the impact of implementing a new curriculum. Supporting this fact from literature, participants said:

LH: *"Students who have failed in the older programme, who still want to complete their programme, and we have these students who are coming in for new programme. When we have got more than one programme running parallel, it has got logistic problems such as space. They cannot be in the same class with the other ones, and even resources. These impact negatively on venue allocation and more staffing. For an example in our case, I can be teaching two modules in the new programme and two other in the old programme. That means I'm offering two programmes, it is like double teaching. Then you have too many planning and hinders one to be effective in providing quality teaching."*

However, not all participants were demoralised about curriculum changes. One participant revealed that if one was part of the reviewing team, one received more exposure and more experience from working with different academics and the

curriculum specialist of other institutions. Rambe (2016) argues that reviewing of the curriculum needs academics who are willing to work in the team responsible for Recurriculation. This team of curriculum review includes different stakeholders such as the curriculum specialist and academics from other institutions, representative of the state.

A participant said:

LI: *"When we review curriculum I also become part of Recurriculation team and as we engage as academics and collaborate with other institutions for benchmarking, it also developing my way of approaching the curriculum implementation. It develops me in terms of looking at the new innovative and transformative strategies that one can reinforce to the pre-service teachers. So I really appreciate the curriculum review because we cannot be at the same level we need to move on and adjust to changing world we are in currently."*

If new curriculum has to come in, it must be supported with resources to make it a success. If old resources are no longer appropriate for the new curriculum, relevant resources need to be brought in. Otherwise, it may be difficult for academics to be judged about something that is not fully supported with suitable resources. Besides, the curriculum needs to be monitored and evaluated at a later stage. Without full resources, monitoring and evaluating the course may be compromised (Romiszowski, 2016). Participants were not happy about the way transition was taking place. The curriculum structure revealed that more academics should be employed by the university across all departments. Employment of new academics has not yet happened, and that means it has been difficult for serving academics to implement the curriculum.

One participant said this:

LL: *"The new curriculum has started already, but this curriculum will experience problems when students get into level three because in level three the curriculum says academics must specialise. For instance, in the intermediate programme the student specialised in four teaching subjects and the foundations phase they will still do the*

tree learning areas. This will imply that students will be supported by more than three university supervisors"

5.2.3.4 Preparation and strategies to curriculum review and implementation

Participants were given an opportunity to list the training sessions and workshops they had attended to prepare for curriculum review and implementation. There were those academics who were not part of the curriculum reviewing panel, but who are expected to implement curriculum and there were those academics who were part of curriculum reviewing panel and expected to implement curriculum. Themane (2011) argues that standards for accreditation must not be prioritised over finding out strategies to design a curriculum that offers quality education. Moreover, the designed document may be not clear to some academics. Absence from meetings intended to be instrumental to discuss challenges is a challenge on its own.

Most of the participants indicated that they had never been involved with curriculum reviewing. This is evidence to the fact that they had never been trained or supported for curriculum review and curriculum implementation. Participants articulated this as follows:

LA: *"What training? I don't remember any training to prepare for curriculum review. It never happened for me. I'm not sure about other academics."*

LD: *"I have attended different conferences and there were different academics from different institutions, but I have never gone for any training to prepare curriculum review or implementation."*

LH: *"I don't know who supposed to provide support to academics. Especial at the higher institution, as we are here as academics. The question would be who supposed to support who? I don't know what kind of support, because the only thing that needs to happen is people need to get together and talk about how they going to implement the new curriculum. Like I said who is going to train who, remember we are the training institution. So people who work here are supposed to be change makers, people who*

are going or determine ways of how curriculum should be implemented. So all of us are academics, the question would be who should train who. There need to be more conversation on this matter."

LL: *"So far I don't see any support, nothing has changed, and the new curriculum has been introduced but it is very difficult to get new lecturers that we want. Instead we were told to employ them on part time basis. Even when we need more people for marking, we don't get such people sometimes. We were told that there is no money budgeted for that. Lack of money make it difficult for employment of full staff."*

LP: *"I have never received any training that supports curriculum review. Training was not available at all."*

Some of the participants articulated that there had been no preparation or training received. Rather than formal training, they had received informal support from peers and superiors. The only formal training that they had received was not based on the new curriculum review and implementation. Instead, the university encouraged staff to register for a postgraduate diploma in higher education teaching. One of the modules exposed academics to knowledge of curriculum development and review. Many academics complained that a heavy workload had prevented them from following this programme. However, it was regarded by the university as one of the initiatives for continuous staff development (UNIZULU, 2018).

Participants said:

LC: *"Postgraduate diplomas studies have been offered to the academic personnel to keep them abreast about what is happening out there and also to enable them to implement the curriculum."*

LE: *"There is always informal way of learning about the curriculum as you proceed with your teaching and learning in daily basis. From interaction with your colleagues and from interaction with the staff as a whole. There is always support from every corner from role of understanding curriculum review process. I don't think there is shortage of information with regard to how one has to be prepared for all these*

processes. I am not sure if some of the workshops that we attended can be formally called curriculum review workshops."

LG: *"Yes the verbal support if would say. Otherwise there was no support in the implementation of any change. There was no training at all for me."*

There are those academics who received that an opportunity for exposure to a number of workshops, both internally and outside of the university. Participants revealed that even though those programmes were available to them, it was not enough. This can also imply that academics are not well prepared, developed or sufficiently empowered for the HE environment. However, Shava (2016) posits that in striving for a threshold level of quality assurance, many Australian universities compel all academic staff who are new to teaching to undertake an initial teacher preparation programme in the first year of employment. This is provided with the hope of preparing them for the high demand of their volatile job environment and to deal with the complexity of teaching in HE. Due to many challenges, academics in teaching higher education in South Africa are encouraged to study towards the Postgraduate Diploma in Higher Education teaching (PGDHE). The qualification is widely regarded as a compulsory criterion for promotion at many universities. The knowledge and skills equip lecturers for teaching in an HE context.

Participants said:

LB: *"DHET always recommend curriculum specialist to assist academics. There is also quality assurance unit to assist academics at universities. There are a number of workshops planned to assist academics. Workshops are arranged in such that they are planned for each and every stage of curriculum development. Although, I don't think support and training programmes were sufficient."*

LI: *"When we implement a new curriculum, we always have a session as a department at department where we empower each other and we outline the content that we think is relevant and we share how we can best put this curriculum across our pre-service teachers. So sharing those ideas and liaising with colleagues in other institutions who are implementing the same modules. This also encourage internal peer support. We*

sit as a faculty and we are provided with the document that is outlining everything in relation to new curriculum that is to be implemented. I don't think it is enough. I wish that we can make it continuously."

LN: *"We have received support here in the faculty, support comes from the mangers, and it also comes from quality assurance. It also comes from the teaching and learning centre. The person from quality assurance when make those changes she oversees those changes. We do not have any training for curriculum review, but training was not enough."*

The researcher's view is that academics find themselves in a difficult position to deal with preparation for curriculum review and implementation since they are commonly allocated with other responsibilities such as administrative duties, research, teaching and community engagement. The shortage in human resources is one of the major factors that subject academics to difficult conditions. While workshops and training may occur as frequently as possible if there are weak or slow students that remain behind when the old curriculum is phased out, the developed strategy may not work.

5.2.3.5 Present state of pre-service teachers' curriculum at the university

According to Pillay (2019), the tools used to evaluate the curriculum in place must be accessed and clear to all academics who are responsible for curriculum implementation. However, if academics are not aware of the criteria and standards for curriculum accreditation, they might not be aware of the present state of curriculum that is implemented by the faculty under study. All participants that were part of the study confirmed that their understanding of the present state of pre-service teachers' curriculum at their university.

The question that was asked to participants was, "*What is the present state regarding curriculum review at your university?"* Participants' answers were as follows:

LC: *"At the moment I think the undergraduate programmes curriculum review is complete, we are moving on to honours or postgraduate programmes where we have*

honours and masters which I think they are in line, definitely, the had to be done in stages and phases. We have started with honours programmes they are almost done, we are now moving on to the masters, which is quite ok."

LF: *"I would think for undergraduates we seem to be fine at the moment, we have just receive that we could go ahead with all the programmes. We still busy with post graduates programmes, a kind of reviews which requires us to do a lot of work for our honours and masters and PhDs off-ramps."*

LG: *"I may not be able to answer for the university but with department, I think we have submitted and we were all participating in the department. The only programmes in which I did not participates is undergraduates' programmes. For the postgraduates' programmes we are ok and submitted everything and we are waiting for approval."*

LH: *"I would not know what is happening regarding the university. It is not the information I'm privileged to. I only know what is happening in the faculty under study. I know that are programmes have been approved at least by DHET and SAQA and whatever relevant structures, so, I also know that it was a long and intense journey for those who participated in the programme."*

LI: *"We have reviewed undergraduate programmes and we sent them to DHET, two were fully accredited and we have implemented them. We are still waiting for FET and senior phase that should be accredited. The PGCE one was also approved and accredited. We have just Recurriculated the postgraduate programmes, (honours) in the department."*

LJ: *"We are waiting for the result of the new programme of postgraduate to be approved and then we will take it from there.*

LL: *"We have done it and we have received feedback that the curriculum that has been designed is thee thing, but I am unfortunate what I have observed there are certain people that eventually become expect of this. Sometimes expect power is never challenged. If they commit mistakes, we are not trained in reviewing curriculum and*

we end up taking suggestions from one person even if he is leading us to a pit we go there, because not all of us that are informed regarding that."

LP: *"Let me just give an example that this year we are only going to be reviewed on post graduate qualifications, like honours, masters and the upward. So we are told in advance that they will come and review, but usually I think they always specify things that they are going to look at in terms of the programmes. Like they will look at your content and they will look at the credits, all those things."*

5.2.3.6 Guiding documents used for curriculum review and implementation

Currently there is a national document that provides guidelines on minimum requirement for teachers' qualifications, commonly known as MRTEQ. Most of the participants were aware of the MRTEQ document which provides guidelines and procedure when recurriculating a programme in teacher education. The document provides guidelines, distribution of the credit to knowledge mix, including the number of weeks for work integrated learning (DHET, 2015b).

Participants provided different answers as follows:

LA: *"We have document called MRTEQ. I think that was the document they have used on Recurriculation."*

LC: *"I think we have all received the government policies, I think we received SAQA document, we received what is this…the MRTEQ and also from the Council of Higher Education. All those documents we have been provided with."*

LE: *"DHET has got certain stipulated policies that governs curriculum review. We are actually bound by those regulations formulated by DHET. From time to time DHET does publish regulations. So, we are always governed by those regulations."*

LF: *"At the moment I think the document called MRTEQ, they are trying to state clearly what the minimum requirements for initial teacher education are, the CAPS documents and those are policy documents that one could use."*

LG: *"I know we follow certain documents like MRTEQ. We also have been re-looking on our master's programmes. We sat together in the boardroom when we were dealing with those programmes. I am happy about that because we followed certain policies."*

LH: *"For us in education the only document that guides curriculum review currently is MRTEQ. Minimum requirements for teacher qualifications. So that is the only document that guides our curriculum review at the moment."*

LI: *"We use MRTEQ that is the policy document that is guiding us as we do Recurriculation and review our curriculum. Whatever we suggest or decide to incorporate into the reviewed curriculum, it is informed by the MRTEQ document."*

LL: *"I referred to MRTEQ, that's what was guiding us. I have been told that this MRTEQ will be also reviewed, just like at schools. It is all about reviewing, and we told that MRTEQ is not what was envisaged by the country. I don't know when, but we have heard that MRTEQ will be substituted as well."*

LK: *"I know that government provides us with guiding documents to do all what is required. Curriculum cannot be reviewed without any document guiding the process."*

Guidelines for implementing a curriculum that has been recently reviewed are listed in the faculty handbook as the purpose of a module; description and code of the module; content that should be covered in a particular module; types of assessment to be done in a module, and the methodology that should be used to facilitate the module. The assessment marks for each module are stated very clearly. However, the resources and materials that should be used to implement the curriculum were not stated and the distribution of content and allocation of time in which content should be covered were not mentioned in the handbook (UNIZULU, 2019).

5.2.3.7 Views of academic staff on how to overcome challenges encountered in implementing curriculum

Exclusion of stakeholders when there are changes in curriculum was stated as one of the things that can be corrected to overcome the challenges of implementing curriculum. Beside exclusion of stakeholders, frequent review of curriculum was also mentioned as a cause of challenges in curriculum implementation. The following are remarks from the participants:

LB: *"Stakeholders must be involved and feedback be given to relevant personnel. Curriculum should be at least for the period of 10 years to allow teachers to master it."*

LC: *"I think I will suggest that there always should be constant feedback from school principals of what they are seeing on our product whether they are performing well or not and even pointing out areas where they think should be enhanced by the university"*

Apart from stakeholders that are side-lined when the curriculum is implemented, short staffing was pinpointed as one of the hindrances for the smooth implementation of curriculum. Ajisafe, Orifa and Balogun (2015) posit that staff members who are not stressed by work overload produce the best quality results. The volume of work that is expected to be performed by workers has a direct influence on the performance of an organisation as a whole. Similarly, McCowan (2018) identifies the shortage of staff as one of the barriers in Kenyan universities. Suitable infrastructure and other technical resources also remain as challenges that are hard to deal with, and they compromise the effectiveness of curriculum implementation of pre-service teachers (Scherer, Tondeur, Siddiq & Baran, 2018).

The question asked to participants was, **"***Do you have any suggestions to deal with the challenges encountered in implementing curriculum in general*?" Participants' answers were as follows:

LD: *"Staffing. University must employ more staff. Understaffing compromises quality"*

LE: *"Everyone will understand that the implementation of the curriculum if you take it as a practice that takes place in the related to human resources and technical aspects of the classroom infrastructure, because we have a very large classes. So, basically the effectiveness of the lectures that can be delivered is affected. Those are issues."*

LH: *"Better technology, venues which are flexible not with these mounted desks where people cannot move, can we have other ways to have academic resources online to avoid printing, can we have human resources, other people to come and enter this space so that we can see how to do this."*

LI: *"I would just suggest that the institution is supposed to be honest, because when we submit the new curriculum we also have a business plan. We always say we need so many fulltime lecturers, we need so many coordinators of the programme, but instead we are using part time lecturers who were not part of the curriculum review. I feel we are not doing justice to the new curriculum that we have reviewed and decided to implement which is fully accredited by the DHET."*

Apart from the shortage of staff, suitable infrastructure and other technical facilities, the unavailability of formal training and mentoring of new academics were seen as some of the most pressing concerns to the journey of academics. Cleary, Jackson, Sayers and Lopez (2017) state that mentoring of new academics is one of the most significant steps that tertiary institutions can initiate. However, if there is shortage of academics in the institution, that important step may remain only a dream to accomplish. To assign the task of mentoring to academics requires a pool of academics to choose from, due to the fact that academics have many responsibilities to fulfil. Abugre and Kpinpuo (2017) maintain that universities in developing countries are still behind in implementing a strategy for mentoring young academics.

Participants were asked to suggest how to overcome the phenomenon, and one responded as follows:

LF: *"I would think that new staff should be properly inducted. They should properly induct you, unlike what happened to us, it is different environment that you just thrown*

to it and nobody mentors you and nobody that introduces you to the culture of university. I think it is important to have mentors and people who can introduce you to the culture of university."

5.2.3.8 Views of academic staff on continuous review of curriculum for the future

The issue of involving stakeholders from the beginning was mentioned as something that could not be ignored when changes in the curriculum were still to be done. Stakeholders must be involved in the entire process, from the beginning up to the end of the process when a trained teacher is employed. Although there are different factors that cause influence the frequency of the curriculum review, relevant stakeholders must be part of the process. Moreover, a community based review process is suggested (Vangrieken, Meredith, Packer & Kyndt, 2017). Gillgren, Støttrup, Schumacher and Dinesen (2019) aver that an integral part of curriculum review is consultation with all stakeholders. Consultation must not exclude academics or students as they are directly involved with the implementation stage.

Participants addressed that as follows:

LB: *"Continuous review is good because it addresses issues of relevance for all the programmes in curriculum implementation. We need to invite more people to come on board from the beginning to the final stage."*

LG: *"There is nothing wrong with reviewing really of these programmes. There is nothing wrong, it is just that people should be involved a lot in the reviewing processes, especially for those who will be responsible for their implementation."*

LH: *"I don't think there is a suggestion that I can give in terms of what should happen, but what I can comment on is maybe we need more stakeholders to come in. I think we need more community members to come in to curriculum review processes such as business people, so that they can talk to what is relevant for their context. For me I wish that students themselves could be there, schools should be there in the process*

to understand it from this point going forward, in saying this is how we are going to prepare teachers for you at least for the next five years."

LI: *"I think it is a good idea that we need to continuously review the curriculum. As we continuously review we must be in liaison with the department of basic education so that what we give out as a product must be relevant to what the department of basic education expect from a qualified teacher."*

Another issue that comes with the continuous change of the curriculum is to find a smooth way of phasing out an old curriculum. One participant answered to that evidenced fact as follows:

LC: *"My feeling is that if the curriculum is being reviewed it should not make teachers who have specialised in certain subject redundant, it is either should be a plan for them to come back to universities or go to other institutions where they can be, what one can say re-educated because. The rumour that is there is that ok Life Orientation is going to be done away with and replaced by history, what that means to those who specialised in teaching Life Orientation."*

Continuous review of curriculum was stated as one of the ways to keep the standard quality higher. Participants stated that:

LD: *"Positive, it has to happen. It should happen. Well I am not against the fact that it should be done. I think is very good idea and very useful for quality assurance and for keeping up to date with the latest research, but my suggestion on how, I don't know."*

LE: *"As I said earlier, review of curriculum as an institutional practice has to be undertaken on regular basis, especially the major reasons will be that you need to make sure that the curriculum is relevant to the needs of the students. So, simple because of that there are quite the few of other reasons, the review of curriculum has to be undertaken at certain level, there is no question of that."*

LF: *"I think they are necessary and they should be done because they should reflect the needs of the students, the needs of the learners they will go and teach at schools.*

I think is something that should be done in every three years or so." "I would think after I have seen what we are trying to do it is important for the university to train staff on curriculum review and curriculum implementation before they embark on any kind of review and then starts with the training."

LP: *"I actually support it. I actually like it, in the sense that let us say in three years there are things that we notice which we would definitely say these things we need to discuss and there are things that we discover as shortcomings and that we need to beef up. So the review when it is like that it can help us a lot"*

Involvement of DHET officials from the beginning of the process of reviewing and Re-curriculation has been indicated as the preferential manner to conduct continuous review of the curriculum. The DHET provides support by guiding universities on corrections that should be made. Participants stated further that:

LI: *"Although as faculty we identify people from other institution to come and advice, but I have the feeling that even the DHET officials should come on board so that whatever we do and prepare as we review curriculum they give proper guidance. Not that they wait until we submit and they reject or they accept, because when you submit a new curriculum is either will be accepted and be accredited or they say no we cannot give accreditation. You just go back and redo A, B and C. That takes time and feel if they were part of, it could have helped because the aim is to assist the pre-service teachers that we are servicing as the higher institution of higher learning."*

From the above statement it is clear that some academics do not understand the processes of programme accreditation, from the internal structure at university level and the external body that reviews programme according to the requirements as stated by DHET, HEQC and SAQA as the quality assurance body for accreditation. Guidelines to review the curriculum should be there to guide the process, not to influence the process to a particular position. Academics of the institution must be given the freedom to come up with something that would be appropriate for their students.

One participant answered as follows:

LL: *"I would say, the university is an institution of higher learning. They must sit down and draft policies on basis of experience they have in the teacher education field. It must not be something that come from up there, but everybody must be involved at university. It much better if it is done by the lecturers."*

New trends and educational issues are asserted as major factors of continuous curriculum review at any institution of higher learning. South Africa as one of the developing countries in Africa has engaged itself in different ways in transforming the education system as a whole. Current trends show that many of the developing countries are moving towards using technological tools in research and teaching (Olelewe & Okwor, 2017). Participants stated this:

LN: *"I think the curriculum it should be continuously reviewed, because if it is not reviewed you cannot get to expose you students to the latest trends in education." "Also important to note that curriculum at higher education is evolving with time, you have to keep the essence of how is evolving, and make changes that are necessary. You have also to be familiar with current issues that are happening globally and locally to integrate what is happening around."*

5.2.3.9 Feedback from the Department of Basic Education about university products

Generally, any producer of a particular product should be interested in responses or comments from the people who use that product. Producers are eager to hear about their product in order to effect improvements if there is any dissatisfaction. In the case of universities that are preparing pre-service teachers to become teachers, the faculty is reasonably expected to know about their students, and they can only get that information from the schools where students are employed as teachers after completing their qualifications (Mansfield, Beltman, Broadley & Weatherby-Fell, 2016). Therefore, the question that participants were asked was, "*Did you get any feedback from the Department of Basic Education about your output (students)*?" Answers to questions were these:

LA: *"Most of the things I know about our students I got them when I visited them for teaching practice."*

LB: *"It seems as if the system is as where every new minister will come and implement policies in her or his mind, without considering department of basic education."*

LC: *"They did come, but we were not talking about students that we teaching per se. they were just pointing areas where they just need more man power and there are subjects where they need more man power and the ones that are over supplied. I think there are subjects we need to lower the intake because the department at the moment is over supplied. There are no jobs for such a specialist. So that was a feedback, but in terms of our products whether were performing wonderfully or not, we only get that information from the principals when we were visiting schools, not directly from the department of Basic Education, but from schools as end product users they informed us."*

LD: *"Not a formal feedback, no formal feedback. We hear sometimes that our students are not performing well by use of a word of mouth, we got feedback from students that cannot find jobs here in KZN. Many of them go to Gauteng, I got the idea from one student who reported back to me that she has the possibility of getting a job because she has IsiZulu as a home language, so in that way our feedback is positive, but not that I am aware of. There is been no formal feedback from the DBE."*

LF: *"I have not seen any, maybe it goes to deans or people of quality assurance. I haven't seen any kind of report like that."*

LG: *"Maybe this one is too much for me. I don't know, I have not done any evaluation about the schools. Maybe other structures within the faculty do sit with the department of education and get some feedback."*

LH: *"Personally I haven't received any feedback from schools, as whether faculty has, I don't know."*

LI: *"We do because we have relations with the King Cetshwayo district and Ilembe district, as we send out our students to assist in scarce skill subjects like maths, accounting, and geography among others. We do have sessions with them and they have recently told us that we are producing a lot of intermediate phase teachers who are not easily absorbed in the system. So such discussions are cautioning us to sit and look back and see how we can put more volume in the scarce skills phases or programmes that they will be easily absorbed in the market."*

LK: *"Normally students tell us about what is happening at schools when they are out for teaching practice. It is very rare to get a chance and speak to mentors."*

LL: *"For me, it never takes place. I am not sure if there is a section that supposed to collect that information."*

LM: *"Maybe the office of the dean has that information. To be honest, I am not exposed to such information."*

LN: *"We got feedback, we got it generally when we go to schools. They tell us about students while they are there for teaching practice. We also got a feedback when principals were here for Indaba. Some principals told us that they prefer PGCE students because they believe that they are in better position of the content than BEd students, but some also complained that PGCE students have content but they do not have strategies to teach. They have also said they have observed the attitude of PGCE students is not the same as BEd because this is not their calling. They wanted to join the private sector instead, and you know because of scarce of jobs than the decided to do teaching. In the old curriculum there was no line of methodology which is not the case in the new curriculum. Teaching of methodology was happening accidentally."*

LO: *"It happened in most cases when I meet people who used to be my colleagues in shopping centres. I am not sure if we have the structure that is responsible for that in the faculty or university."*

LP: *"I have not heard from the department of basic education, possibly maybe the people who are in the administration, but myself as a lecturer in the classroom I rely*

mainly on what I get from the public. Public means being school teachers, principals and other stakeholders because those are the people we interact with. Sometimes they give us valuable information in terms of for instance, they wold be saying guys we understand that you are training teachers but your teachers are not able to teach a particular content."

The researcher believes that there is no communication between the departments of higher education and basic education. There are no formal gatherings where representatives of local schools can meet representative of the university to discuss concerns about the training of pre-service teachers. One may assume that pre-service teachers will be hosted mostly by the schools in the vicinity of the university. However, all participants' comments evidenced the fact that the university is not part of any structure where its output can be discussed.

5.3 CONCLUSION

Analysis and presentation of data had been done in selected themes and sub-themes were developed, based on the objectives of the study. Data analysed and presented were the result of interviews of participants to the study and related documents reviewed such as the faculty handbook, pertinent policy and procedures, and facts and figures to support data that were established from interviewing participants. The next chapter will provide a summary of the whole study. Findings and recommendation of the study will be also presented in the next chapter.

CHAPTER SIX

SUMMARY, FINDINGS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter summarises and concludes the investigation of how challenges faced by South African higher education institutions in implementing curriculum for pre-service teachers are managed. This chapter also presents the findings that developed in chapter five. Finally, this chapter discusses recommendations that conclude the study. Chapters that were helpful to get to this chapter are as follows:

Chapter one stated the plot of the study; chapter two provided a synthesis to the study through review of different literature that were used in the study; chapter three discussed the constructivist learning theory and experiential learning theory as theories that underpinned and supported the study throughout; chapter four outlined the empirical processes conducted under research design and methodology; and chapter five presented the data and findings that had been obtained through interviews with participants and document analysis. Finally, the study objectives are reviewed in order to provide a summary, discuss findings and provide recommendations.

6.2 SUMMARY OF THE STUDY

The study intended to attain the following objectives:

- Identify the challenges faced by South African higher education institutions in the curriculum implementation for pre-service teachers' preparation;
- Determine how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparation; and
- Investigate the views of academic staff on continuous curriculum review for pre-service teachers' preparation.

The study aim was to investigate the how challenges faced by South African higher education institutions in implementing curriculum for pre-service teachers are managed. Five chapters were compiled for this study. Here follows a brief summary of these preceding chapters:

Chapter one provided the orientation of the study stated the problem that informed the study, developed the aims and objectives of the study; and asserted the knowledge that the study aimed to increase. Operational terms used in the study were defined. Moreover, attention was given to the research methodology, research paradigm, research design, sampling procedures, research instrument data analysis and presentation. Finally, the ethical concerns of conducting a study were addressed.

Chapter two extensively discussed suitable literature in investigating the challenges of South African higher education institutions in implementing teacher education. The chapter outlined the background to challenges faced by South African higher education institutions in implementing curriculum for pre-service teachers. Furthermore, global and international challenges on preparing pre-service teachers both in Africa and South Africa were reviewed. Additionally, chapter two dealt with South African higher education institutions' challenges on the transition from basic to higher education for pre-service teachers; South African higher education institutions' challenges with regard to teaching practice of pre-service teachers; and examined approaches used by South African higher education institutions in pre-service teachers' preparation. Thereafter, chapter two highlighted pertinent issues when continuous curriculum review for pre-service teachers' preparations is done. The following are some of the important and common issues identified from the literature reviewed in this study:

- The rapid and constant evolution of technology is a threat and challenge to many countries. Mostly, rural areas are affected by this;
- Implementation of inclusive educations has long been challenging different countries and parts of the world;
- Poor mentoring of pre-service teachers is experienced in many parts of the world;

- Strategies of implementing new curriculum for pre-service teachers are defunct in many tertiary institutions of higher education;
- Poor communication skills in English in many countries has been long experienced in teacher education; and
- Critical pedagogy has been noted as one of the missing mechanisms in implementing of pre-service teachers' programmes.

Chapter three broadly discussed how successfully through the constructivist theory and experiential learning theory as theoretical framework to the study challenges faced by South African higher education institutions in implementing curriculum for pre-service teachers are managed. Chapter four comprehensively discussed research paradigm, research design, population and sampling procedures, research instrument (in-depth interviews and document analysis), data analysis and presentation procedures, trustworthiness (credibility, dependability, audit trail, transferability and confirmability) and ethical considerations. Chapter five provided an analysis and presentation of data that had been collected through interviews with participants and document analysis. Finally, chapter six presents the summary, findings and recommendations of the study.

6.3 DISCUSSION OF FINDINGS

6.3.1 Identifying challenges faced by South African Higher Education institutions in the curriculum implementation for pre-service teachers' preparation

Findings revealed that all academics entrusted with the responsibility of implementing curriculum for pre-service teachers hold a master's degree as minimum qualification as is required for all academics. Among the 16 academics that participated in the study, 12 of them hold a doctoral degree which is the highest NQF level in South Africa for as regulated by SAQA. Therefore, this means all academics participated in the study were qualified to provide useful information.

Furthermore, the data revealed that the experience of participants as academics responsible for pre-service teachers' curriculum was between 5 and 25 years. The average experience of academics in implementing teacher education was 12 years. This study was conducted when the newly aligned HEQSF for initial teacher qualification curriculum was replacing the former norms and standards. In saying that, all participants had adequate experience to identify the challenges faced by a South African higher education institution in the curriculum implementation for pre-service teachers' preparation.

Regardless of the qualifications and experience that academics possess, the findings revealed numerous and persistent challenges that hinder pre-service teachers' curriculum implementation for South African higher education institutions as follows:

- Overcrowding in lecture halls is one of the challenges that has stayed unresolved with tertiary institutions for many years. Oluremi (2019) states that overcrowding in lecture halls is one of the causes of the poor performance of pre-service teachers. Overcrowding makes it very difficult for academics to use different strategies for teaching.

- It was also found that physical infrastructure is poor to allow contemporary strategies for teaching and learning to be used. Immovable furniture and other teaching and learning tools that are found in lecture halls compromise the innovative aspect of teaching and learning. The shortage of suitable lecture halls for foundation phase students disturbs clear planning of implementing curriculum aligned to expectations. Lecture halls and other buildings of the faculty under study are too old in structure to be used in modern days where a constructivist learning is advocated and recommended. This finding concurs with the assertion by John (2019) that the setup of environment and physical infrastructure has an influence on the entire performance of both academics and pre-service teachers. If the setup is fully supportive, it creates positive teaching and learning.

- The findings revealed poor technology and technical support as additional impending challenges. It was found that the faculty under study does not have computer labs or technical staff to support pre-service teachers. Students therefore have opted for buying their own laptops in order to have access to internet and other computer needs. Wi-Fi and internet hotspots that are frequently weak for sustained internet access have been commonly experienced by academics and pre-service teachers. If the Wi-Fi is up and strong in that moment, students are found all around to access the internet as there is no dedicated place or room that could be used. Other technological tools that are found in lecture halls are not always in a working condition, and in many cases are found broken. Jeong (2017) asserts that to create active teaching and learning for students regardless of the presence of academics, strong internet and proper technological tools are imperative. Since there is a shift from the traditional way of learning to constructivist learning, there is no turning back; a student-centred learning approach is imperative in producing excellent prospective teachers.

- Findings also showed that there is a shortage in staffing or human resources. This result did not reveal the number of students that must be allocated per lecturer as norm when allocating the duty load for academics. Beside the heavy teaching responsibility due to large numbers of students for academics, it is difficult for academics to perform additional duties such as research and community engagement. Hence, Adetunji (2016) posits that a too heavy burden of teaching pre-service teachers limits academics from using different strategies of teaching and assessment. This causes many academics to become devastated and demotivated to do their work.

Other findings expose the challenges that emanate from teaching practice. Challenges related to teaching practice revealed as follows:

- Code switching from English language to home language has been found dominating between student teachers and learners at schools. The English language barrier has been identified as a main cause for code switching. It was found that English as language of instruction affects the confidence of many of the pre-service teachers during teaching practice period. The English language barrier also affected the performance of learners on assessment because all assessment questions were in English except for their home language subject. There was no opportunity to interpret for students into their home language. Songxaba, Coetzer and Molepo (2017) also consider code switching and the language barrier as some of the critical issues that negatively affect the performance of learners in South Africa and other African countries.

- Mentoring of pre-service teachers was found to be one of the weakest links during the period of teaching practice for student teachers. There has been no clear strategy of how mentors could empower pre-service teachers with relevant information. It was found that mentor teachers leave pre-service teachers alone with the entire responsibility. Moreover, it was found that mentor teachers are not aware of their responsibilities to concerning the mentoring of student teachers. Results of the study confirm that meetings between mentor teachers and academics to discuss the mentoring of pre-service teachers is non-existent.

- Conditions of teaching facilities at schools have been identified as one the factors that contribute in disrupting the teaching practice of students. Findings revealed that many of the schools used by students for teaching practice are under resourced. Therefore, resources and materials that pre-service teachers have been taught in theory are not available at their chosen schools for teaching practice. Pre-service teachers find it difficult to adapt in those conditions. Tshabalala (2016) posits that poor management of teaching facilities is an

unfortunate issue that South African schools have failed to deal with. Mismanagement of funds by officials of the Department of Basic Education has been one of the contributing factors in poor maintenance of facilities.

- Unruly behaviour and unpreparedness of pre-service teachers during teaching practice were noticed and reported to academics. It was found that pre-service teachers after they have been assessed for their practice teaching have a tendency to disappear from schools. Findings indicated that pre-service teachers fail to balance between content knowledge and strategies to be used when teaching. Some of the students had challenges in incorporating relevant teaching methods aligned to the content and assessment to be used, while other students were weak in commanding content. Additionally, it was revealed that BEd 1 students went for their school experience without understanding classroom management and pedagogical concepts related to curriculum development. Postgraduate Certificate in Education (PGCE) pre-service teachers were also expected to visit schools for school experience in term one (Unizulu, 2018), before they had acquired knowledge and an understanding of classroom management and concepts of pedagogy.

- There is a shortage of staff and other human resources to support and evaluate pre-service teachers. It was found that this is also caused by teaching and learning and teaching practice that run concurrently. BEd 3 and PGCE students go to teaching practice while BEd l 1, 2 and 4 students are at university for teaching and learning. Results show that not all academics do follow the same protocol when they assess pre-service teachers.

6.3.2 Determining how the South African higher education institutions address the challenges they are facing in implementing the curriculum for pre-service teachers' preparations

Mukhwana (2017) argues that universities are expected to perform beyond any challenges to produce quality students. In the 21st century only strategies that involve innovative ways to overcome challenges that hinder quality education should be used.

From the insights of this study, the approaches that had been used to overcome overcrowding in lecture halls and the shortage of human resources have nothing to do with innovative strategies. It was found that academics continue to report on the challenge at hand, but only temporary solutions have been provided. Part-time and temporary lecturers have been employed to assist where there is a shortage of lecturers. As for overcrowding, academics have no power invested in them to deal with the problem, except for reporting to senior management.

On approaches to overcome shortage of physical Infrastructure and lack of technology and technical support, the findings revealed that the problem is not only the shortage of physical infrastructure and lack of technology, but there is broken physical infrastructure that remained in use very long without any repairs or maintenance. Furthermore, the findings exposed that academics have been reporting *ad frustra* about broken physical infrastructure and technological tools but they did not get any feedback or assistance. It was also found that only temporary solutions had been offered in some cases, such as using movable overhead projectors and laptops. One of the disadvantages of using movable physical infrastructure is that it needs more time for the setup. Richter, Daelmans, Lombardi, Heymann, Boo, Behrman and Dua (2017) argue that taking care of physical infrastructure has to do with the upbringing of an individual. Students lose the culture of taking care of teaching and learning facilities at an early stage of their upbringing. Additionally, the rapid evolution in education cannot be ignored as a contributing factor to the shortage of physical infrastructure. Contemporary physical infrastructure is always needed to be updated with recent and modern strategies to implement curriculum for pre-service teachers. Financial constraints are also part of the challenges when recent facilities are needed (Moreira, Ferreira, Santos & Durão, 2017).

On the other hand, findings on teaching practice revealed certain approaches that have been used to overcome related challenges. Among these are that academics meet prior to teaching practice to discuss the logistics and processes to be followed during teaching practice period. It was also found that academics are expected to report any immediate challenges to the designated coordinator of teaching practice

and report those challenges that are not pressing after teaching practice. Some of the challenges are reported but academics find it difficult to reach consensus on how to resolve them.

Additionally, it was divulged that there is a teaching practice unit that organises all the logistics prior to teaching practice. It was found that although the academics meet after teaching practice to discuss the challenges that had been experienced, the same challenges are persistently experienced every year. However, the study could not reveal how mentor teachers report the challenges they encountered during mentoring of pre-service teachers. It was also found that most approaches to teaching practice were hindered by a shortage of manpower. Academics are expected to visit pre-service teachers at schools while teaching other students at the same time. Zhang, Clarke and Lee (2018) state that any pre-service teachers' programme that lacks quality in teaching practice is entirely compromised. During the period of teaching practice, the entire programme is practically tested. Therefore, the more challenges are experienced during teaching practice period, the more difficult it becomes to evaluate strengths and weakness of the whole programme.

6.3.3 Investigating the views of academic staff on continuous curriculum review for pre-service teachers' preparation

Findings of the study showed the following:

- It was revealed that academics are aware of principles and procedures that internally inform curriculum review. It was expressed that the time to review curriculum had always been prescribed by the DHET. It was also admitted that before curriculum review takes place, the DHET analyses trends on how the curriculum should be structured that develop from the needs and demands of a market. However, once the curriculum has been approved, there is only limited scope for academics responsible for curriculum implementation for pre-service teachers to suggest changes on the prescribed curriculum. The findings of the study concur with Tao and Gao (2018) that trends do not only influence

the curriculum for pre-service teachers, but also influence the knowledge of in-service teachers. Therefore, continuous curriculum review cannot be separated from continuous development.

- On why the curriculum at higher education institutions is always reviewed, the findings discovered that to address challenges that face society; the skills required as well as accuracy of content and knowledge are mostly served by the institution. Societal needs and demands that regularly change can also influence the review of the curriculum. Moreover, study findings revealed that the curriculum is reviewed to meet certain standards for quality assurance. Lafont (2015) theorises that when policies are reviewed in a democratic country, the views of society and public are considered. Needs and demands of a particular society are known to its members.

- On how reviewing of curriculum is impacting on curriculum implementation, findings revealed that academics have different feelings. Some academics are not happy that curriculum review is done so quickly. Other academics are of the view that it is good if curriculum review is done but not so quickly. Moreover, it was found that when curriculum review is done, not all academics are brought on board to be part of curriculum reviewing. Regardless, the transition period is not smooth due to the fact that the duty load increases for academics. Academics find themselves teaching two different groups at the same level while phasing out an old programme. Additionally, findings revealed that the way the new curriculum is structured requires more staff for a smooth implementation. From the point of view of the academics, Strangleman (2017) claims that even if changes bring better ways of operating at any organisation, it takes time for employees to accept changes. It is also common for people who have been in a particular institution for so long to resist any or all changes, even if it is clearly change to for the better.

- On preparation and strategies for curriculum review and implementation, it was revealed that no clear strategy was employed, nor formal training ever organised for academics before curriculum review is performed. Subsequently this means academics were implementing curriculum without being prepared

or with sufficient conceptual knowledge of the design. The findings also revealed that academics are encouraged to register for formal qualification to upskill themselves. De Vries and Korotov (2016) suggest that any organisation implementing changes should offer training and workshops. The process of adapting to change becomes easier if all people had been involved through training and workshops when the changes were made.

- Findings on the present state of pre-service teachers' curriculum at the university revealed that curriculum review of undergraduate and PGCE programmes had been completed and was already under implementation. The faculty under study was also in the process of phasing out the old curriculum.

- On guiding documents used for curriculum review and implementation, it was found that the relevant policy document called MRTEQ was used to review new curriculum. It was also revealed that the policy document used was provided by the DHET and was applicable to all other universities. Nel and Adam (2014) emphasise the importance of following a certain route when curriculum review is done. Following guidelines assists one tertiary institution to easily benchmark with other tertiary institutions. Besides, the South African universities that offer pre-service teachers' programmes are governed by certain rules and policies that set common ground for all universities to design and develop curriculum.

- On how to overcome challenges encountered in implementing curriculum, the findings confirmed that all relevant stakeholders must be consulted and involved for them to understand the curriculum being implemented. It was also revealed that tertiary institutions must bring the Department of Basic Education as represented by the schools on board to make them understand of their expectations and objectives for teaching practice. Among other things, findings showed that academics must be involved in all processes to find solutions to the challenges.

- Findings on the continuous review of curriculum for the future revealed that academics accept the continuous review and Recurriculation of curriculum as

long as participation remains open to all academics and other stakeholders from outside the university to contribute. It was also found that the curriculum specialist that is normally sent by the DHET must be involved from the very beginning of the curriculum review process rather than at a more advanced stage.

- Feedback from the Department of Basic Education about university student teacher performance during their school-based work integrated learning showed that there is no formal feedback by the DBE as represented by the school about the pre-service teachers produced at university. In this regard, Appelbaum, Cameron, Ensink, Hazarika, Attir, Ezzedine and Shekhar (2017) emphasise that any project that involves people from the beginning up to the end where one has an outcome, requires proper communication to be successful.

6.4 LIMITATIONS OF THE STUDY AND RECOMMENDATION FOR FURTHER RESEARCH

The limitations of the study empower the reader to appreciate constraints imposed on the study and understand the context in which the research claims are set. Regardless of the scope of the study that was limited to only one university that offers a pre-service teacher education programme and teacher practice, the researcher had to cover all costs to reach all participants. The study presents a reliable result on investigating challenges faced by South African tertiary institutions in the implementation of a pre-service teachers' curriculum, suggests approaches that can be used to overcome challenges, and presents the views of academic staff on continuous curriculum review of pre-service teachers' curriculum. It was not easy to secure the participation of the participants due to their different commitments.

It is strongly suggested to increase the scope of the study at least to all universities offering teacher education programmes situated in KwaZulu-Natal, if further investigation is to be pursued. Future studies could also consider using another method of investigation besides the qualitative. Quantitative methods may bring in the

views of pre-service teachers and mentor teachers to supplement recommendations on how challenges faced by South African tertiary institutions in implementing a pre-service teachers' curriculum are managed.

6.5 CONCLUSION

This chapter broadly summarised the preceding chapters. In outlining the summary of previous chapters, objectives of the study were provided once again. The theoretical underpinnings of the study and types of literature reviewed were all listed in this chapter. The chapter also mentioned the qualitative approach used for a case study to design the methodology that was followed to conduct this study. The findings of the study, based on the stated objectives of the study, were also thoroughly discussed in this chapter. Recommendations provided in this chapter were informed by the following factors: challenges faced by the academics who are responsible for implementing a pre-service teachers' curriculum; approaches that may be used to overcome challenges faced by academics in implementing this curriculum; and lastly, lecturers' views on the continuous review of pre-service teachers' curriculum.

Moreover, this chapter outlined the limitations that had been experienced during the process of this study. Unavailability of some of the academics, due to different reasons, has emerged as one of the most detrimental impediments to the study. The researcher also identified different reasons for further investigations that could be done in the same field of study. The study's major findings on aspects that need special attention are as follows: Shortage of staff; overcrowding; inappropriate planning; lack of technological tools; lack of participation; shortage of physical infrastructure; lack of reliable internet access; and lastly, challenges relating specifically to teaching practice itself.

Alongside, findings of the study revealed that constructivist learning and experiential learning theories are not only framework of this study, but they also give framework to curriculum designers on what kind of curriculum should be designed for pre-service teachers. The study findings also showed that both theories are pertinent when designed curriculum is being implemented. They give different strategies that can be

used to implement curriculum. Academics should guide students while they play a major role of their learning, and that can be based on constructivist learning theory. On the other hand findings showed that using of experiential learning theory while establishing learning experiences of students cannot be ignored. Concisely, findings discovered that integration of experiential learning theory and constructivist theory is imperative for pre-service teachers' preparations.

6.6 RECOMMENDATIONS

This study intended to investigate how challenges faced by South African higher education institutions in implementing teacher education for pre-service teachers are managed supported by a constructivist learning theory and experiential learning theory as theoretical framework. The recommendations proposed are as follows:

- ✓ A clear policy on post establishment must developed, and policy should be based on the number of pre-service teachers per lecturer to create a post. In doing so, at least overcrowding and shortage of lecturers as some of the challenges that hinder implementation of pre-service teachers' curriculum may be partially solved.

- ✓ A resource centre that is able to support a large number of pre-service teachers must be considered by the university. Such a resource centre must be fitted with movable furniture to allow different strategies for teaching and learning. This flexibility will also encourage peer support and learning. A lecture hall specifically for the foundation phase programme must be built. Such lecture halls must be fitted with appropriate equipment and materials relevant to teaching and learning of foundation phase pre-service teachers.

- ✓ Clear policy on the allocation of all lecture halls must be defined, based on the number of students enrolled for a particular module. Besides, security personnel must be allocated for each lecture hall to protect physical infrastructure and other digital tools in lecture halls. Moreover, a campaign against vandalism must be launched to involve all parties that use the university's infrastructure.

- ✓ The faculty must have a committee dedicated to looking after physical infrastructure. The committee should be responsible for formally reporting all broken and unavailable infrastructure to the relevant section of the university.

- ✓ More space must be created to allow pre-service teachers to access internet even when the Wi-Fi network is unavailable. A strong Wi-Fi network must be made available in all lecture halls. This may allow pre-service teachers to access the internet and material on Moodle while a lecturer is presenting. Data screens should be placed at convenient intervals along the walls of the lecture hall for students to see what is projected by a lecturer while the lecture is in progress. The option of outsourcing all technological tools including the maintenance of Wi-Fi could also be considered by the university.

- ✓ Mentor teachers must be trained by academics to prepare them for the teaching practice of pre-service teachers. A possible strategy is to cluster mentor teachers based on their districts and provinces to avoid incurring costly expenses. Moreover, all universities need to have Memoranda of Understanding (MoU's) with the DBE in support of the university in training teachers as mentors that will also provide guidelines for mentoring the pre-service teachers.

- ✓ Pre-service teachers should have been exposed to different experiences during teaching practice. This would have aligned well with Kolb notion of experiential learning and it will provide knowledge and skill in improving student learning. Pre-service teachers should be obliged to conduct their teaching practice at two different schools before completing their qualification. One school must be a school that is under-resourced, and the other school must be well-resourced.

- ✓ Channels of communication between university and schools where pre-service teachers do their teaching practice must be improved; there must be a memorandum of understanding (MoU). This will create accountability and better defined expectations between the university and the partner schools.

Pre-service teachers must be made aware of frequent communication between mentor teachers and university supervisors or teaching practice coordinator. At present, pre-service teachers are aware that there is no communication between university and mentor teachers; that is why unruly behaviour of students is experienced.

- ✓ The faculty responsible for teacher education must be exempted from the common university calendar. The university calendar should cater for teaching practice period to take place while other students are on recess. That may allow academics to visit schools while BEd level 4 is at home on recess. This will alleviate the pressure on academics to visit schools while teaching BEd level 4 concurrently.

- ✓ A clear programme that allows all academics in the faculty to participate in the curriculum review process must be drafted. This may influence the relevant academics to better accept a curriculum that is under review. This may also assist academics to provide their input timeously before the curriculum is implemented.

- ✓ The faculty must find ways to collect recent information from the society that the university is serving. To propose a strategy that can be used, all academics in the faculty must be allowed give their opinion. Forming a committee that is responsible for collecting recent trends and societal needs is one of the ways that may be useful. After collection of information, all information must be presented to the academics in the faculty to have a discussion before adoption. By doing that, all interested stakeholders would be given an opportunity to contribute to curriculum review.

- ✓ Benchmarking must be continuous, it must not happen for the purpose of reviewing the curriculum. More than one university must be used for benchmarking, in order to collect more information that would assist the faculty to be on par with other institutions. This will also assist to improve their practices

and not to be left behind in implementing innovative ideas and techniques in teaching and learning.

- ✓ The representative from DHET must be part of curriculum review at the beginning of the review process. That may assist to close loopholes as early as possible, rather than raising concerns at the later stage of curriculum review.

- ✓ A teaching and learning committee must periodically collect trends and societal needs and feedback from basic education about pre-service teachers that had been produced by the faculty under study. This may assist the university to know about their graduate teachers for future preparation. The Department of Basic Education has the opportunity to compare pre-service teachers produced by different universities. Therefore, this may put the faculty under study in possession of reliable information that can be used positively.

6.7 RECOMMENDED MODEL AND STRATEGIES THAT THE FACULTY MAY USE IN IMPLEMENTING PROGRAMMES FOR TEACHER EDUCATION

The implementation of pre-service teachers' curriculum has been done under persistent challenges. Many universities from different countries faced common challenges, although the researcher noted that the most affected universities are those that are rural-based. Therefore, it is essential to suggest strategies to overcome challenges that affect the implementation of teacher education. The researcher suggests that stakeholders may play an important role towards the implementation of quality teacher education. Hence, the researcher recommends model (figure 5) and strategies that may also be considered in implementing pre-service teachers' programmes.

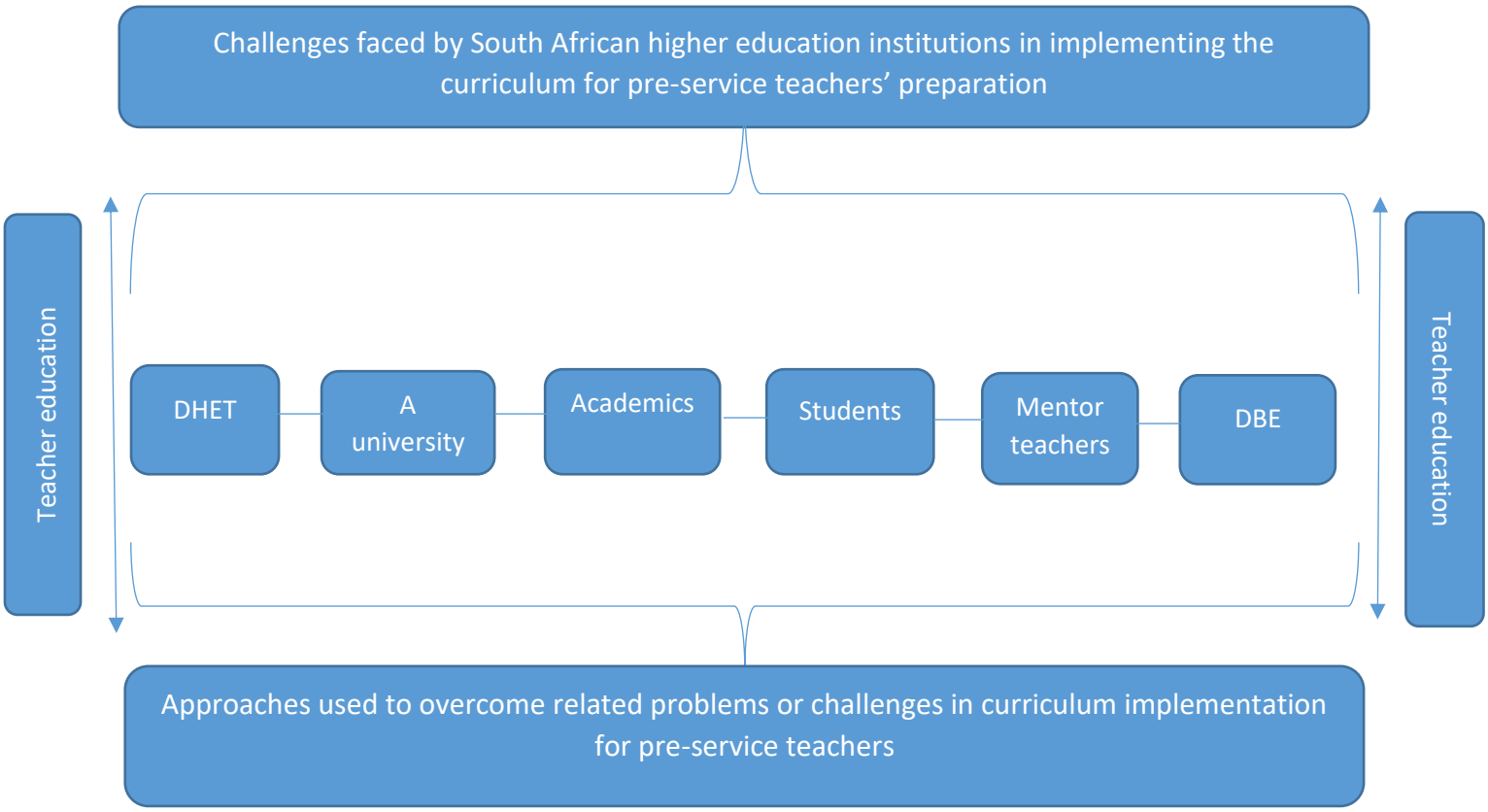

Figure 5: Model of managing challenges faced by South African higher education institutions in implementing pre-service teacher education curricular

The following role players and strategies for curriculum implementation of pre-service teachers are suggested as indicated in (figure 5):

- DHET as a role player:
  - DHET must avail more funds for contemporary materials for teaching and learning;
  - The number of academics that are supplied through the New Generation of Academics Programme (nGAP) must be increased; and
  - The DHET must develop a digital app where all mentor teachers may subscribe to share ideas.

- The university as a role player:
  - The university must create a platform to generate more funds through alumni and other companies for funding modern material that is required for teaching and learning;

- ❖ Strong security measures must be installed to safeguard infrastructure and resources for teaching and learning;
- ❖ The university must use an entrance test to enrol pre-service teachers; this may help to check whether pre-service teachers view themselves as future teachers or not; and
- ❖ The university must develop a reliable digital app for mentor teachers to quickly report about teaching practice on an electronic platform.

- ➢ Academics as role players:
  - ❖ Academics must collectively identify challenges that are persistent for curriculum implementation of pre-service teachers;
  - ❖ Academics must collectively find solutions to the challenges;
  - ❖ Prepared slides may be loaded to Moodle during the lectures for positive e-learning and interactive student engagement and monitoring of the engagement by using data analytics to improve practice and engagement for student success;
  - ❖ Academics may require students to use the digital technology for lesson presentation, assessment and activities; and
  - ❖ Academics must promote the use of a constructivist learning for teaching and learning.

- ➢ Students as role players involved in their learning:
  - ❖ Pre-service teachers must play a leading role in advocating a movement from hard (paper) to soft copies. That movement may promote a strategy of requiring tablets to buy e-resources;
  - ❖ Students must be leaders in demanding the use technology and mobile Apps for a successful teaching and learning process;
  - ❖ Students must engage themselves in the use of constructivist learning as early as in the first term of their qualification;
  - ❖ Students must engage themselves in the use of constructivist learning as early as in the first year experience of their qualification;
  - ❖ Students must associate themselves with the teaching profession before they enrol for teacher qualifications; and

- ❖ Pre-service teachers may form a team of peer educators to deal with professional behaviour as early as possible for peers.

- Mentor teachers as role players:
  - ❖ Mentors must be willing to share their skills for honest mentoring of pre-service teachers as investment in future teachers' development; and.
  - ❖ Mentor teachers must avail themselves when they are needed to attend workshops for mentoring.

- DBE as role player:
  - ❖ The concept of community engagement must be introduced to schools, This may assist in convincing teachers to voluntary mentoring of pre-service teachers;
  - ❖ In reviewing the basic education curriculum, all universities must be invited to be part of the process;
  - ❖ Orientation workshops of teachers at the beginning of each year must involve training of mentor teachers; and
  - ❖ The DBE may engage the South African Council of Educators (SACE) to develop mentoring of pre-service teachers as one of the professional responsibilities for teachers. This will allow teachers to accumulate points as it happens with other responsibilities.

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Appendix A: In-depth questions to participants

TO BE ANSWERED BY ACADEMICS INVOLVED IN THE IMPLEMENTATION OF CURRICULUM FOR PRE-SERVICE TEACHERS

1. How is your professional qualification related to curriculum implementation of pre-service teachers?
2. What is your highest qualification related to curriculum implementation of pre-service teachers?
3. How many years of experience do you have as a member of academic fraternity?
4. How many years of experience do you have in implementing curriculum for pre-service teachers?
5. Have you encountered any problems/challenges when implementing curriculum? If any, what are those challenges?
6. What resources are necessary for implementing curriculum?
7. Are all necessary resources available? Motivate.
8. How were related problems/challenges treated at your university?
9. Are there any challenges you have encountered that are related to teaching practice? If any, what are those challenges?
10. How were problems/challenges related to teaching practice treated at your university?
11. What do you think informs curriculum review internally?
12. How is reviewing of curriculum impacting on your implementing of curriculum?
13. Why is the curriculum at Higher Education always reviewed? Motivate.
14. Have you received any support when implementing curriculum changes? If any, what kind of support have you received?
15. Have you received any training preparing you for curriculum review?
16. Was the training enough compared to the curriculum you are implementing?
17. Do you have government policies to help you deal with curriculum review? If any, what are those policies?
18. What are your suggestions on continuous review of curriculum for the future?
19. What is the present state regarding curriculum review at your university?

20. Did you get any feedback from Department of Basic Education about your output (students)? If any, what was it all about?
21. Do you have any suggestions to deal with the challenges encountered in implementing curriculum in general?
22. Do you have any views about continuous review of the curriculum in general?

Appendix B: Document analysis tool

The following are the documents that will be reviewed to give reliability to verbal reports obtained from participants during interviews:

- Policy documents on curriculum review and development;
- University calendars;
- Faculty brochures and course curricula;
- The policy document on assessment strategies;
- Practice teaching documents/ or policy on practice teaching;
- Minutes and reports related to curriculum development and review, if any;
- Teaching and learning policy of the faculty or university; and
- Other policies on the implementation of curriculum for pre-service teachers.

The following are some of the pertinent things that will be checked for every document:

- Document's availability;
- Dates;
- Person/s responsible to write the document;
- Person/s responsible to use the document;
- Purpose of the document;
- Relevant issues addressed by the document; and
- Implications and effectiveness (from and of) the document.

Appendix C: Ethical clearance certificate

UNIVERSITY OF ZULULAND
RESEARCH ETHICS COMMITTEE
(Reg No: UZREC 171110-030)

RESEARCH & INNOVATION
Website: http://www.unizulu.ac.za
Private Bag X1001
KwaDlangezwa 3886
Tel: 035 902 6731
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ETHICAL CLEARANCE CERTIFICATE

Certificate Number	**UZREC 171110-030 PGD 2018/232**							
Project Title	**Challenges faced by South African Higher Education institutions in implementing curriculum for pre-service teachers.**							
Principal Researcher/ Investigator	TC Ntshangase							
Supervisor and Co-supervisor	Dr MS Mabusela		Prof DR Nzima					
Department	Curriculum and Instructional Studies							
Faculty	Education							
Type of Risk	Medium Risk– Desktop data collection							
Nature of Project	Honours/4th Year		Master's		Doctoral	x	Departmental	

The University of Zululand's Research Ethics Committee (UZREC) hereby gives ethical approval in respect of the undertakings contained in the above-mentioned project. The Researcher may therefore commence with data collection as from the date of this Certificate, using the certificate number indicated above.

Special conditions:

(1) This certificate is valid for 1 year from the date of issue.
(2) Principal researcher must provide an annual report to the UZREC in the prescribed format [due date-13 September 2019]
(3) Principal researcher must submit a report at the end of project in respect of ethical compliance.
(4) The UZREC must be informed immediately of any material change in the conditions or undertakings mentioned in the documents that were presented to the meeting.

The UZREC wishes the researcher well in conducting research.

CHAIRPERSON
UNIVERSITY OF ZULULAND RESEARCH
ETHICS COMMITTEE (UZREC)
REG NO: UZREC 171110-30
STAMP
18 -09- 2018
RESEARCH & INNOVATION OFFICE

Professor Gideon De Wet
Chairperson: University Research Ethics Committee
Deputy Vice-Chancellor: Research & Innovation
13 September 2018

Appendix D: Letter for permission to conduct research in the university

UNIVERSITY OF ZULULAND

University of Zululand, Private Bag X1001, KwaDlangezwa, 3886
W: www.unizulu.ac.za
T: +27 35 902 6731 E: DlaminiA@unizulu.ac.za
Deputy Vice-Chancellor: Research and Innovation Office

Mr Ntshangase T.C
Education
University of Zululand KwaDlangezwa
Per email: tcntshangase@gmail.com

06 September 2018

Dear Mr. TC Ntshangase

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT UNIZULU: "CHALLENGES FACED BY SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS IN IMPLEMENTING CURRICULUM FOR PRE-SERVICE TEACHERS"
Your letter to me, refers.

I hereby grant approval for you to conduct part of your research at UNIZULU, as per the methodologies stated in your research proposal and in terms of the data collection instruments that you have submitted. I note also that the University of Zululand, has issued ethical clearance and having read the documentation, I am happy to accept that.

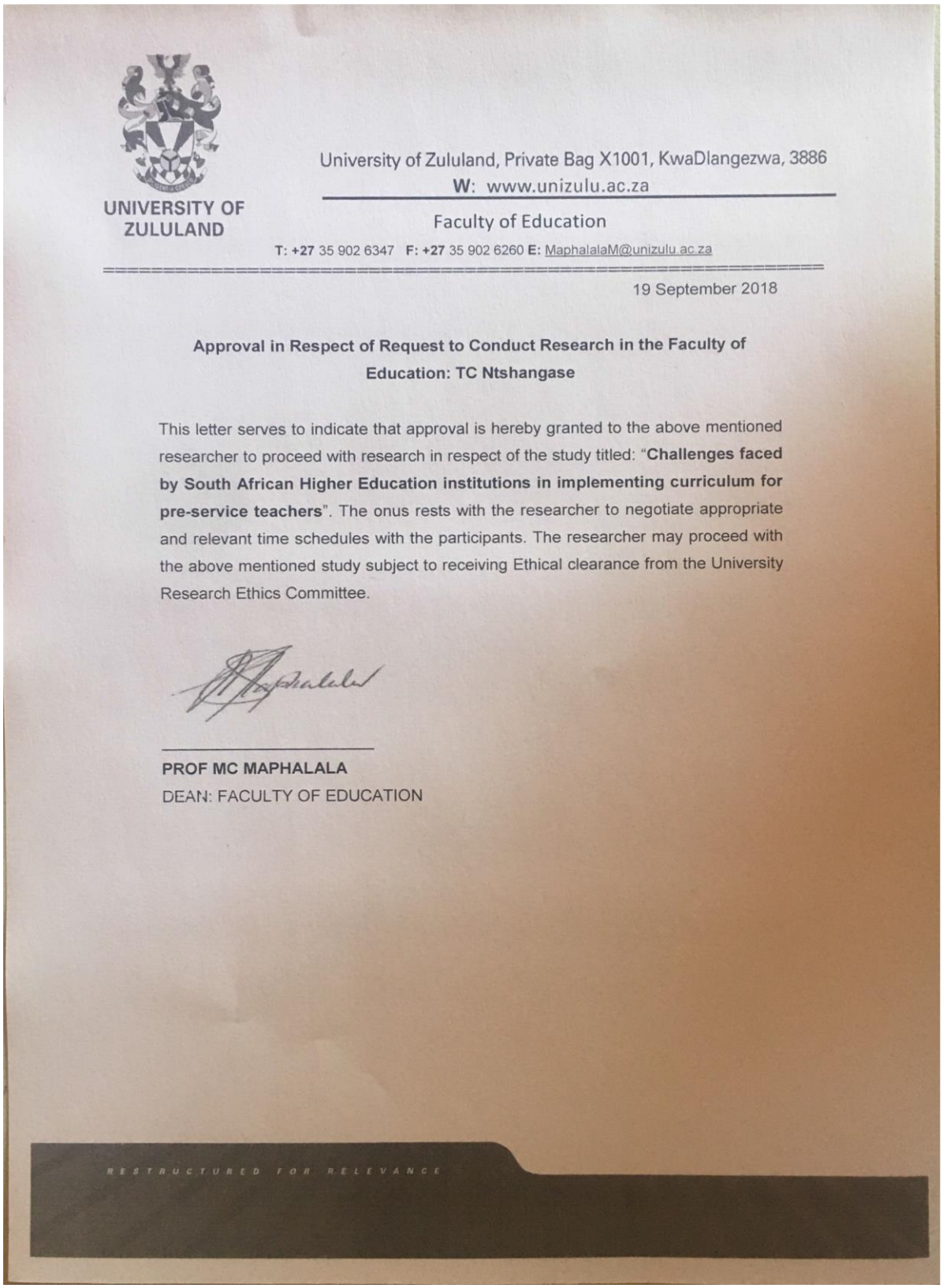
You may use this letter as authorization when you approach the appropriate persons. Please note that permission is based on the documentation that you have submitted. Should you revise your research instruments, or use additional instruments, you must submit those to us as well.

I wish you well in your research.

Yours sincerely,

Professor Gideon De Wet 6/9/18
Chairperson: University of Zululand Research Ethics Committee
Deputy Vice-Chancellor: Research and Innovation

Appendix E: Letter for permission to conduct research in the faculty



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19 September 2018

Approval in Respect of Request to Conduct Research in the Faculty of Education: TC Ntshangase

This letter serves to indicate that approval is hereby granted to the above mentioned researcher to proceed with research in respect of the study titled: "**Challenges faced by South African Higher Education institutions in implementing curriculum for pre-service teachers**". The onus rests with the researcher to negotiate appropriate and relevant time schedules with the participants. The researcher may proceed with the above mentioned study subject to receiving Ethical clearance from the University Research Ethics Committee.

PROF MC MAPHALALA
DEAN: FACULTY OF EDUCATION

RESTRUCTURED FOR RELEVANCE

Appendix F: Informed Consent Declaration Form

INFORMED CONSENT DECLARATION

(Participant)

Project Title: Challenges faced by South African Higher Education institutions in implementing curriculum for pre-service teachers

Mr Thembela Comfort Ntshangase *from the Department of* ***Curriculum and Instructional Studies of Faculty of Education****, University of Zululand has requested my permission to participate in the above-mentioned research project.*

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The nature and the purpose of the research project, and of this informed consent declaration have been explained to me in a language that I understand.

I am aware that:

1. The purpose of the research project is to investigate challenges faced by South African Higher Education institutions that will be turned around to make the curriculum implementation for pre-service teachers' preparations more effective.
2. The University of Zululand has given ethical clearance to this research project and I have seen/ may request to see the clearance certificate.
3. By participating in this research project I will be contributing towards strengthening content knowledge and pedagogy of the current initial teacher programmes in meeting schools, and community needs, producing competent and suitable beginner teachers and in-serving teachers that will serve the Department of Basic Education to implement primary and secondary curriculum, and revealing different challenges on the implementation of pre-service teacher education.

4. I will participate in the project by answering questions that will be asked by the researcher in the interview which will be scheduled between a researcher and participant.

5. My participation is entirely voluntary and should I at any stage wish to withdraw from participating further, I may do so without any negative consequences.
6. I will not be compensated for participating in the research, but my out-of-pocket expenses will be reimbursed.
7. I am aware that there will be no risks associated with my participation in the project
8. The researcher intends publishing the research results in the form of thesis. However, confidentiality and anonymity of records will be maintained and that my name and identity will not be revealed to anyone who has not been involved in the conduct of the research.
9. I will not receive feedback in the form of written report regarding the results obtained during the study.
10. Any further questions that I might have concerning the research or my participation will be answered by **Mr Thembela Comfort Ntshangase**, (cell: 076 116 0316).
11. By signing this informed consent declaration I am not waiving any legal claims, rights or remedies.
12. A copy of this informed consent declaration will be given to me, and the original will be kept on record.

I, …….. Have read the above information / confirm that the above information has been explained to me in a language that I understand and I am aware of this document's contents. I have sked all questions that I wished to ask and these have been answered to my satisfaction. I fully understand what is expected of me during the research.

I have not been pressurised in any way and I voluntarily agree to participate in the above-mentioned project.

…… ……

Participant's signature **Date**