Reimagining Moodle as an effective learning management system through the experiences of Geography lecturers at a selected South African university

By

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This dissertation is submitted in fulfilment of the requirements for a Doctor of Philosophy degree in Education and Curriculum Studies School of Education, College of Humanities, University of KwaZulu-Natal, Durban, South Africa.

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Submitted: April 2019
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Dedication

This study is dedicated to my wife (Ntokozo Zuma), my daughter (Landiswa Zuma), and my mother (Lindiwe Mazibuko). I should especially like to remember here, my late son (Lwandile Zuma), and my late aunt (Sbongile Ndlovu): may their souls rest in peace. My extended family from my mother’s family; “ondlovu, gatsheni, boyabenathi…,” also from my father’s family; “oZuma, Nxamalala, maphum’ ephethe…” I thank them for their guidance, encouragement, love, and support.
Abstract

This research is a qualitative study that utilises a phenomenological research study, by means of five geography lecturers at a particular university in South Africa, to fulfil its purpose. This study employs a critical paradigm. This paradigm has been utilised because the study aims at exploring the reimaging of Moodle as an effective learning management system, through the experiences of geography lecturers at a selected South African university. The methods of data generation employed are reflective activity, use of artefacts, and semi-structured interviews. These methods have been used for the purposive of sampling. Convenience sampling was utilised to select the most accessible participants. This study was framed by the curriculum benchmarks concepts which originate from the curricular spider-web (Van den Akker et al., 2009). This study utilises the Technological Pedagogical Content Knowledge (TPACK) as the theory that shapes the study. Data were analysed through guided analysis in which deductive and inductive methods were deployed. Last, ethical issues that are aligned with a qualitative study were considered. These include trustworthiness, dependability, confirmability, credibility, and transferability. This study employs this collection of research methods, the aim being to answer the following critical research questions:

1. How do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university?

2. Why do lecturers reflect in particular ways on Moodle as an effective learning management system (LMS) at a selected South African university?

3. What lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university?

These critical research questions were underpinned by critical research objectives:

1. To explore how geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university.

2. To explain the reasons for lecturers reflecting in particular ways on Moodle as an effective learning management system (LMS) at a selected South African university.

3. To understand the lessons learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university.
From the literature, three major concepts were generated by the research phenomena (lecturers’ experiences), namely, self/personal-experience, shared-experience, and specialised/professional experience. These concepts were aligned with three categories of the curriculum, namely, the pragmatic, the horizontal, and the vertical.

Findings from the first phase indicate that geography lecturers explained their experiences per the shared-experiences. Geography lecturers are teaching geography using Moodle driven by the needs of the students and they are following a horizontal/competence curriculum. Following shared-experience, geography lecturers’ reflect on specialised-experience, which suggests that these lecturers are driven by the needs of their specialised/content. Lecturers are following a vertical/performance curriculum when teaching geography using Moodle. In the first phase, there are few instances where we find geography lecturers teaching geography using Moodle-driven self-experience. This imbalance of experiences led to the second phase in which self-experience was singled out as the area for attention. Lecturers were workshopped on curriculum benchmarks. The main findings from Phase Two indicate lecturers reflecting on their three categories of experiences, namely, self-experience, shared-experience, and specialised-experience.

**Keywords**: experiences, curriculum, curriculum benchmarks, critical paradigm,
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CHAPTER ONE

RESEARCH SYNOPSIS

Figure 1.1: Structure of Chapter One
1.1 Introduction

This chapter aims at providing the readers with a clear understanding of how this study unfolds. The study identifies a clear and understandable research title which is moulded by the research focus and purpose. It is stated clearly at this level that the purpose of this study is to “explore reimaging Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university”. A rationale for this study is included. This study is framed by the theory of Technology, Pedagogy, and Content Knowledge (TPACK) which is discussed at length in Chapter Three. Above all, research objectives and critical research questions that complement one another are clearly stated and are achieved at the end of this study. Other research concepts such as research design and methodology, research paradigm, research style, sampling, data-generation methods, data analysis, trustworthiness, ethical issues, limitations, and the summary of each chapter, were not merely discussed, but extensive meaning was afforded the readers.

1.2 Focus and Purpose of the Study

The purpose of this study is to explore the reimaging of Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university. The reimaging of Moodle affects the social and professional experience of lecturers who combine these two experiences under personal experiences. This study aims at stimulating personal experiences which is the neglected aspect of a learning management system when teaching effectively; hence phenomenological research study was employed to inform geography lecturers.

1.3 Background to the Study

This study was conducted at a university in South Africa located in the KwaZulu-Natal province. This university was one of the first South African institutions to merge in 2004. Specifically, five independent universities merged into one. This study is projected to the Faculty of Education, which is the one of the highest enrolled faculties in this university. The School of Education encompasses the School of Languages and Art, Social Science, Leadership and Management, Education Studies, Mathematics and Computer Science, and Science and Technology. The School of Education is the largest school in this university with
more than 1000 first-year students taken in per year. This automatically results in large classes, which are difficult to teach without a learning management system.

1.4 Rationale for this Study

In this study, the concept of “experiences” does not merely mean the ability of lecturers to reflect on module knowledge only. It further refers to an ability to apply that knowledge through practise using teaching and learning tools in the form of software and hardware. University lecturers need to explain their experiences on the use of Moodle in teaching students. The study enables the presenting of lecturers’ experiences. Moreover, this study recognises the paradigm shifts of higher education around the world, particularly in developing countries. “Today, higher education like all other sectors in the world has been influenced by different types of technologies especially digital technologies” (Khoza & Manik, 2015, p.192). This includes the universities in South Africa.

As a postgraduate student, I undertake research activities. In my research, I use hardware (computer) and software (Internet) tools. Even though postgraduate students are using textbooks from the university library to gather information, the majority of students are using their own laptops or university computers to Google information, to communicate with their lecturers via Moodle. Some even use Skype. Face-to-face interaction between students and university lecturers is therefore minimal. This creates a learning environment in which students are responsible for their own learning by using the technology available to them. As Moore and Gilmartin (2010) argue, the online component of learning allows students to access the necessary content. The reduced face-to-face engagement with lecturers results in the students being forced to investigate topics themselves or with their peers, rather than depending on the lecturer to provide all the answers in class. Furthermore, this creates a responsibility for lecturers to guide and equip students with necessary computer skills, in which students are enabled to use digital technology such as YouTube. However, not all university lecturers are committed to the use of digital technology in teaching. Be that as it may, the majority of universities around the world use Moodle. (Padayachee, Kotze & van Der Merwe 2010).
As a student, I observed two groups of lecturers: first, those who were digitally committed and those who were digital immigrants (Khoza, 2013 & 2014). Digital commitment suggests that this group of lecturers has a clear understanding of technology and is incorporating digital technology in their teaching strategies. Second, digital immigrants (Prensky, 2001), suggests that this group of lecturers finds it difficult to incorporate digital technology into their lessons. At the same time, the university expects lecturers to utilise technology available to them. In 2016 the Deputy Vice-Chancellor (DVC) phased in Moodle as a compulsory teaching and learning tool. The implementation is in phases: 2016 for undergraduate students, first- and second-year students. In 2017, third- and fourth-year students were included. Finally, in 2018, all postgraduate students were included.

This 2018 vision of the DVC implies that lecturers who are digital immigrants are compelled to use Moodle as their tool for teaching and learning. Furthermore, intervention is essential for transforming lecturers who are digital immigrants, even those who become digital refugees, meaning those lecturers who lack digital knowledge. One of the major questions I have is, “Are the lecturers ready to accomplish this vision as curriculum implementers?” Transformation may be achieved when lecturers share their experiences on daily practices. Therefore, experiences and phenomenological research study is important for this study to transform lecturers who are digital immigrants. Padayachee et al. (2010) states that one of the challenges facing universities in developing countries such as South Africa is the lack of technology usage by lecturers. Geography content demands the use of technology, particularly the Geographical Information System, in which students are expected to learn geography in the computer laboratory space.

From the literature it is clear that many studies have been published around Moodle, or e-Learning, particularly in Western and developed countries (Donnelly, 2014 & Gaskel, 2006). However, none of these studies uses a critical paradigm together with phenomenological research study as a research style to focus on “Reimaging Moodle as an effective learning management system through the experiences of Geography lecturers at a selected South African university” According to Dewey (1922), experience is an important tool to be used by teachers to solve any problem in the classroom. Dewey (1922) further argues that experiences support teachers’ understanding of pedagogical knowledge and teachers’ abilities
to think freely and objectively. More importantly, teachers learn and resolve problems from their teaching action. Khoza (2015) affirms that teachers are helped by reflecting on their experiences before, during, and after their practices. Those teachers who practise experiences in their classroom are able to solve most challenges they come across in the teaching profession.

For these reasons, the outcomes of this study, first, are aimed at informing higher education curriculum designers, clusters coordinators, and university lecturers, particularly those who are teaching geography, about the use of Moodle. Second, this study is aimed at closing the gap found in literature on phenomenological research studies focusing on the use Moodle. Most of the studies focus on students and the use of digital technology, or teachers in primary and secondary schools and the use of technology (Alnsour, Muhsen, Dababna, 2011; Donnelly, 2014; Gaskel, 2006). Last, this study provides deeper theoretical and practical insight.

1.5 Review of the Preliminary Literature

There has been extensive writing on the concept of experiences, writing which includes scholars such as Zeicher and Liston (1987); van Manen (1977); Boud, Keogh and Walker (1985); Ramin (2006); Luigina (2015); and Scoon (1987). Almost all these scholars have built on the work of John Dewey (1922 & 1933). Dewey (1933, p. 9) defined ‘experience’ as “an active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends”. Dewey (1922) states that the aim of experience is to support teachers’ understanding of subject knowledge, offering the capability to think openly, and learn problems from their teaching actions. One of the simple definitions of experience that is deemed necessary for this study is from Hatton and Smith (1995) who define experience as “deliberate thinking about action with a view to its improvement”. The key words used by Dewey (1922) are ‘subject knowledge’, which suggests that teachers are specialists in their subjects; they are responsible for improving the content they teach, and their teaching methods, to improve their subject knowledge.
This may be achieved when teachers reflect on their day-to-day practice. Gubane-Mokiwa and Khoza (2016) posit that learning is not based on the appropriate use of technology available to the teacher, but rather, it is about the ideology (pedagogical approach) that is appropriate in the use of suitable technology. Content knowledge is therefore seen as more important than technological knowledge in the process of teaching and learning. Further, Shulman (1986) posits that there are gaps between pedagogical content knowledge and practice. Akbari (2006) states that the purpose of experience is to promote practical knowledge to balance the theory. To improve the ideological awareness of teachers, teachers should understand the three proposed levels of experience. Van Manen (1977) proposes technical, practical, and critical experience as the way of understanding experiences.

Jan Van Den Akker (2009) defines curriculum as a plan for learning (intended stage). The curriculum is a framework that outlines what a teacher should do in order for learners to learn. Teachers must plan before they act. Pinar (2004) defines curriculum as a plan of learning (implemented and attained), or action before planning. These two definitions of curriculum split curriculum into two; in the first one the focus is on the outcomes (competence curriculum). In the second one, the area of focus is on the content coverage (performance curriculum).

According to Christiansen, Bertram, and Land (2010), the conceptual framework is the set of ideas that shapes the research in order for the study to have an area of focus. This study is framed by the following concepts and their propositions, followed by the proposed questions: teaching targets, resources, content, pedagogical approach, tasks, teaching and learning space, teaching and learning time, assessment, and accessibility. These concepts are generated from the review of the literature. Table 1.1 indicates curricular benchmarks, propositions, and proposed questions.
Table 1.1: Curricular Benchmarks, Propositions, and Proposed Questions (Khoza, 2015)

<table>
<thead>
<tr>
<th>Curriculum benchmarks</th>
<th>Propositions</th>
<th>Proposed question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teaching Targets</td>
<td>Aims: Self-experience, Objectives: Specialised-experience, Outcomes: Shared-experience</td>
<td>What are your targets when teaching geography using Moodle?</td>
</tr>
<tr>
<td>2. Resources</td>
<td>Software resources, Hardware resources, Ideological-ware resources</td>
<td>Which resources are you using to teach geography using Moodle?</td>
</tr>
<tr>
<td>3. Content</td>
<td>Content knowledge, content expertise &amp; curriculum knowledge</td>
<td>Describe the content you are teaching</td>
</tr>
<tr>
<td>4. Pedagogical Approaches/ Lecturer’s Role</td>
<td>Student-centred role &amp; lecturer-centred role</td>
<td>Which approach do you utilise when teaching geography using Moodle?</td>
</tr>
<tr>
<td>5. Tasks</td>
<td>Informal &amp; formal tasks</td>
<td>Which types of geography tasks do you give to students?</td>
</tr>
<tr>
<td>6. Teaching &amp; Learning Space</td>
<td>Computer room &amp; lecturers’ room</td>
<td>In which environment is the teaching and learning taking place?</td>
</tr>
<tr>
<td></td>
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<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>7. Teaching &amp; Learning Time</td>
<td>Hours, days, weeks, &amp; semester</td>
<td>When is the teaching of geography taking place?</td>
</tr>
<tr>
<td>8. Assessment</td>
<td>Formative assessment, peer assessment, &amp; summative assessment</td>
<td>How do you assess students using Moodle?</td>
</tr>
<tr>
<td>9. Accessibility</td>
<td>Community financial and physical support</td>
<td>How do you gain access to the teaching of geography students?</td>
</tr>
</tbody>
</table>

According to van den Akker (2009), the motive for teaching is the response to the question: “Why does the teaching of geography using Moodle take place?” University lecturers are to respond based on proposals provided, personal motives, content motives, and social or contextual motives. Personal motives refer to the internal interests of lecturers teaching geography using Moodle without any external influences such as community or other aspects. A qualitative study conducted by Fawzi and Ishtaiwa (2011) revealed that the majority of lecturers use Moodle mostly for distribution of notes to students; lecturers are more interested in working with computers than with paper. Content motives refer to the policy of teaching geography using Moodle as stipulated in the university curriculum, or studies that informed the teaching of geography. Social motives refer to the external influence of teaching geography using Moodle. These external influences are based on community or the opinions of the society. According to Bentham (2009), any attempts to generate active learning demand that teachers have a proper understanding of the local community issues, which may then be addressed through the use of the content structures in the existing curriculum. The motives for teaching are important for self-evaluation or experience. When lecturers have a clear understanding of these three identified levels or motives for teaching geography they will also be able to utilise relevant teaching and learning tools.
Teaching and learning tools are based on the question of “What?” by what means, or mode is the teaching of geography carried out on students? The answer for this question lies in the three propositions: physical tools, software tools, and contextual awareness or contextual knowledge. Khoza (2012) uses the concept of “resources” to define teaching and learning tools. According to Khoza (2012, p.75), a “resource is anything that facilitates or initiates learning or “any person or thing that communicates learning.” According to Krishna (2013), teachers believe that successful teaching and learning depends on the teaching and learning tools used. Khoza (2012) further classifies these teaching and learning tools into three sets: hardware tools, meaning the use of physical equipment to enhance the teaching and learning process, software tools; which are the programmes that allow the hardware to operate, and contextual awareness or contextual knowledge. Teaching and learning tools cannot be utilised accordingly when teachers are not aware of their teaching target, which should be clearly defined for the purpose of directing the module and observing the outcomes for experience purposes.

Targets are based on the question of “What what are the desired outcomes for teaching geography using Moodle? This question may be fully answered when lecturers have a clear understanding of the three propositions: aims, objectives, and outcomes. Ames (1991) describes a target as programmes of cognitive processes that have cognitive effective and behavioural consequences. Targets are therefore important for teachers to define and understand in order to shape their behaviour and to work towards achieving expected results. Targets may be achieved when aims, objectives, and learning outcomes are clearly defined by lecturers. Kennedy, Hyland, and Ryan (2006) describe aims as broad general statements of the teaching purpose, in which a teacher indicates what to cover in the process of learning. Aims focus the teacher to show the content of the module or programme. Kennedy et al. (2006) further describe objectives as specific statements of teaching intention in which specific areas that need to be covered are identified in the process of learning. Gosling and Moon (2001) describe learning outcomes as statements of expectations of what students should know, understand, and be able to do at the end of the lesson. Aims, objectives, and learning outcomes may be achieved when lecturers reflect on their own teaching. It is therefore important for geography lecturers to reflect on their daily actions. For lecturers to understand the targets of the module, it is also important for them to have ‘object’ knowledge.
Object defines what teachers are teaching and the knowledge transmitted to students (Kennedy, Hyland, and Ryan (2006). Shulman (2000) argues that, to be an effective teacher one must hold and display proficiency in the object knowledge of a module. Shulman (2000) describes object as the understanding of concepts’ underlying structure of the subject being taught. Defining teacher quality is a prickly endeavour, with any single definition bound to disappoint at least one group of people. Spaull (2013) argues that a good teacher must exhibit: professionalism (values), be willing to teach (attitudes and desires), have the ability to teach (knowledge, skills, and pedagogy), and must be competent to teach (instilling knowledge, skills, and values the student should acquire). Lecturers must have a clear understanding of the object knowledge in order to implement the curriculum correctly. Furthermore, lecturers must understand their role as the subject of the curriculum implementation.

Subject is one of the most important elements in the curriculum implementation; subject is based on the question of “What role does a lecturer play in teaching geography using Moodle?” Susan and Lynne (2006) view subject as an individual’s teaching that has to change with the content and context of the teaching situation, for instance, an object can apply a student-centred approach in one lecture and a lecture method in another. Ramsden (1992) identified six principles of actual teaching in higher education. These principles focus on the subject, including: the ability to clearly explain complex subject matter, consideration for students, providing clear goals and possible challenges, allowing student independence, control and active engagement, learning from students, and employing appropriate assessment and feedback.

Smith and Van Doren (2015) argue that tasks should ensure the following: First, tasks should be constructed in such a way that each student is responsible for his or her own learning. The second task should ensure that teaching tasks bring or draws knowledge and skills that are beyond the classroom situation. Last, teaching tasks should be transferable out of the classroom. Formal tasks are used for recording purposes with an aim of producing results at the end of the year. Informal tasks are conducted to monitor the daily progress of the students (Hoadley & Jansen, 2013). Further, Khoza (2013a) states that informal tasks are important to students since they have different roles to play of connecting students to the real-world
situation. Tasks are connected to the form of assessment used by lecturers to monitor their students’ progress. Moodle, as the tool for learning, accommodates all forms of assessment. Evaluation of the students through tests and quizzes can also be included in the site through Moodle; and they come under the various activities provided by Moodle. Various types of test including essay questions, short answer questions, and multiple-choice questions, can be introduced on the site.

Lambert and Lines (2000) define assessment as the process of gathering, interpreting, recording and using information and learners’ responses for educational purposes. According to Broadfoot and Murphy (1990), assessment is an important scope of interest and an area of debate in education. Black and William (2004) state that the information acquired through assessment is employed to give students knowledge to be used for transformation, based on learning actions or tasks. According to Looney (2005), formative assessment refers to frequent, interactive assessment of students’ progress and understanding to identify learning needs and adjust teaching appropriately. For William (2011), formative assessment is used in various ways, such that it is no longer helpful; instead the researchers prefer the term ‘assessment for learning’. Formal assessments are those tasks that make up the formal programme of assessment for the year. Teachers should mark and record formal assessment; all formal assessments must be moderated to ensure quality and maintain standards, whereas informal assessments are a daily monitoring of learners’ progress. Moodle allows easy assessment by teachers, provides teachers with a powerful set of tools to create and manage courses, course content, course materials, tracks student attendance and performance through tests, and administers quizzes and assignments. However, Ward, and McCotter (2004) view assessments as one of the challenges that obscure the value of experience of teachers. Teachers focus more on the output model rather than on the input. Ward et al. (2004) argue that it is not enough to prepare students with knowledge and skills – teachers should reflect also on their own practices.

The concept of community embraces these three prepositions, namely, cultural norms or community rules, (is the geography curriculum acceptable to the community or society?), financial support (is there any financial support from the community to the institution?), and physical support (is the university accessible to the community?). Downs (1994) states that
geography should be linked in terms of theory and should be practical and relevant based on subject knowledge. To achieve this, teachers should reflect on their own practice, according to Southerland, For Howard and Markauskaite (2009), professional development on teachers is based heavily on understanding interaction between personal and context knowledge, and experiential knowledge acquired through community understanding.

1.6 Theoretical Framework

This study is framed by the theory of Technology, Pedagogy, and Content Knowledge (TPACK). In utilising this theory, I intended to gain knowledge on university lecturers’ understanding of educational technologies such as Moodle. This theory embraces three components of teacher knowledge: content knowledge, pedagogical knowledge, and technological knowledge. Content knowledge is important for lecturers, Shulman (1986) states that content knowledge would include knowledge of concepts, theories, ideas, as well as established practices and approaches toward developing such knowledge. Pedagogical knowledge applies to understanding how students learn, general classroom management skills, lesson planning, and student assessment. For Koehler and Mishra (2009) technological knowledge changes frequently, suggesting that lecturers should always be aware of the changing technology in order to be able to apply all technology tools and resources. This theory is employed to generate more insight and understanding of lecturers with regard to the use of Moodle as the teaching and learning tool in a selected university. When lecturers understand Moodle, they will be able to design courses that make sense to their students. Students have multiple ways of receiving education, as Moodle creates a blended learning environment. Blended learning includes both direct communication with student and indirect communication, where course information is available online. Therefore, Moodle, as a technological tool, requires technological awareness of the object or users (lecturer) and also of the recipient (student). With the stated motive, the TPACK theory is deemed necessary for this study: it embraces content knowledge, which is based on understanding the subject matter; pedagogical knowledge which is based on understanding the curriculum and methods of transmitting content knowledge; and technological knowledge, which is based on understanding the use of the available technology. These components are integrated to develop an effective lecturer. The following Table 1.2 displays the three concepts with proposed questions.
Table 1.2: Three Concepts of TPACK and Proposed Questions

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Propositions</th>
<th>Proposed questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content knowledge</td>
<td>Module knowledge</td>
<td>Do geography lecturers understand the module they are teaching?</td>
</tr>
<tr>
<td></td>
<td>Module concepts</td>
<td></td>
</tr>
<tr>
<td>Pedagogical knowledge</td>
<td>Student learning</td>
<td>Are teaching methods employed which support Moodle?</td>
</tr>
<tr>
<td></td>
<td>Students conceptions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching strategies</td>
<td></td>
</tr>
<tr>
<td>Technological knowledge</td>
<td>Continuity</td>
<td>Are the lecturers aware of Moodle as a learning tool to be incorporated in geography?</td>
</tr>
<tr>
<td></td>
<td>Irreversibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Path dependency</td>
<td></td>
</tr>
</tbody>
</table>

(Originated from the literature)

Since lecturers are expected to undergo a process of learning in this study, I then infuse phenomenological research study, which is instrumental in this study for transforming geography lecturers. Driscoll (2000) defines learning as “a persisting change in human performance or performance potential which must come about as a result of the learner’s experience and interaction with the world.” This definition encompasses many of the attributes commonly associated with behaviourism, cognitivism, and constructivism. All of these learning theories hold the notion that knowledge is an objective attainable through either reasoning or experiences. Constructivism suggests that learners create knowledge as they attempt to understand their experiences (Driscoll, 2000). Behaviourism and cognitivism view knowledge as external to the learner; and the learning process as the act of internalising knowledge. These theories are frames under the umbrella of the main theory of this study which is TPACK.

1.7 The Objectives of this Study:

1. To explore how geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university.

2. To explain the reasons for lecturers reflecting in particular ways on the use of Moodle in teaching geography at a South African university.
3. To understand the lessons learnt from lecturers’ experience of Moodle as an effective learning management system (LMS) at a selected South African university.

1.8 Research Questions:
1. How do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university?
2. Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university?
3. Which lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university?

1.9 Research Methods/Approach to the Study

1.9.1 Research paradigm

Scholars have defined research ‘paradigm’ in different ways. This results in various understandings of this concept. One of the straightforward explanations of the term ‘paradigm’ is the definition by Bertram and Christiansen (2014). These researchers define research paradigm as a “way of presenting a particular world, which defines, for researchers who hold this view, what is acceptable to the researcher and how this should be done.” The paradigm defines questions of collecting data and interpretation of the findings. Guba and Lincoln (1994) present four important paradigms in research as reflected in the following table.

Table 1.3: Educational Research Paradigms (Guba & Lincoln, 1994)

<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Enquiry</th>
<th>Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positivism</td>
<td><strong>Ontology</strong></td>
<td>Naive realism “real” reality and tangible</td>
</tr>
<tr>
<td></td>
<td><strong>Epistemology</strong></td>
<td>Dualist or objectivist: findings are true</td>
</tr>
<tr>
<td></td>
<td><strong>Methodology</strong></td>
<td>Experimental or manipulative verification of hypotheses, chiefly quantitative methods</td>
</tr>
<tr>
<td></td>
<td><strong>Ontology</strong></td>
<td>Critical realism “real” reality but only imperfectly and</td>
</tr>
<tr>
<td>Post-positivism</td>
<td>Probabilistically tangible</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Epistemology</td>
<td>Modified dualist or objectivist: critical tradition or community findings are probably true</td>
<td></td>
</tr>
<tr>
<td>Methodology</td>
<td>Modified experimental or manipulative: falsification of hypotheses and may include qualitative methods</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
</tr>
<tr>
<td>Historical realism: virtual reality shaped by social, political, cultural, economic, ethnic gender, values; crystallised over time</td>
</tr>
<tr>
<td>Epistemology</td>
</tr>
<tr>
<td>Transactional or subjectivist: value mediated true</td>
</tr>
<tr>
<td>Methodology</td>
</tr>
<tr>
<td>Dialogic or dialectical</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
</tr>
<tr>
<td>Relativism – local and specific contracted realities</td>
</tr>
<tr>
<td>Epistemology</td>
</tr>
<tr>
<td>Transactional or subjectivist: created findings</td>
</tr>
<tr>
<td>Methodology</td>
</tr>
<tr>
<td>Hermeneutical or dialectical</td>
</tr>
</tbody>
</table>

(Originated from literature)

This study is located under the critical paradigm. According to Guba and Lincoln (1994), a critical paradigm is ‘critical’ in that it challenges other paradigms. Furthermore, it challenges the unequal and discriminatory ways in which the social world is organised. According to Cohen, Manion, and Morrison (2007) the critical paradigm is based on equality and democracy of the society. It does not merely give an account of the behaviour of the society. It aims to emancipate and redress inequality and promote freedom in society. Since this study focuses on “Reimaging Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university”, the aim of this study is to transform university lecturers. Positive change is expected to be practised by integrating technology into the teaching of geography. The study will be aimed at addressing problems, discussing implications, and engaging lecturers. It is therefore important for this study to be framed by the critical paradigm; and meaning will be projected at transforming higher education. However, there are several criticisms of the critical paradigm. First, this paradigm is viewed as one that carries out a political agenda which is seen to be counter to the task of a researcher. Second, the researcher is seen to be the only voice who can change the community; yet there are many ways of understanding the real world (Cohen, 2007). To
overcome these weaknesses of the critical paradigm, I shall remain neutral, which is the responsibility of the researcher (Morrison, 1995).

1.9.2 Research approach

According to Creswell (2012) and Cohen (2011), in educational research there are two major research approaches: qualitative and quantitative. Research questions and literature review must drive the choice of approach by the researcher. These considerations assist the researcher to apply a certain method or procedure when planning for data collection or generation methods, sampling, instruments, protocol data analysis, and interpretation of results. The following are the fundamental differences between quantitative and qualitative design (Creswell, 2012).

Table 1.4: Differences between Quantitative and Qualitative Design

<table>
<thead>
<tr>
<th>Quantitative design</th>
<th>Qualitative design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Grounded theory</td>
</tr>
<tr>
<td>Correlational</td>
<td>Ethnography</td>
</tr>
<tr>
<td>Survey</td>
<td>Narrative</td>
</tr>
</tbody>
</table>

(Originated from literature)

This study adopted a qualitative approach in which the emphasis is on the quality and depth of information (Nieuwenhuis, 2007). A qualitative approach is an approach concerned with understanding the meanings which people attach to actions, decisions, beliefs, values, and the like within their social world, and understanding the mental mapping process that respondents use to make sense of and interpret the world around them (Ritchie & Lewis 2003). Similarly, Creswell (2012) states that a qualitative study is based on exploring a problem and developing a detailed understanding of the phenomenon; research questions are presented in a broad way to gain participants’ experiences. Data may be obtained from a small number of participants; and data may be arranged into themes by grouping the views of participants. I shall choose a qualitative approach, because the purpose is to understand and explore geography lecturers’ experiences using Moodle as an effective learning management
system (LMS) at a selected South African university. A qualitative research is concerned with developing explanations of social phenomena that inform one’s understanding of the world which people inhabit, answering why things exist the way they do (Hancock, 2002). Creswell (2012) agrees that qualitative research is best suited to a researcher whose wish is to explore and learn more from the participants.

Qualitative studies focus on in-depth analysis of data, which is normally from a small sample number. One of the weaknesses of phenomenological research study in a qualitative study is that the researcher is present in the study with the participants: this may distort the findings (Linda, 1994). Cormack (1991) points out that the results may be uncertain, because a researcher may have influenced the results of the study to suit a particular purpose. This is possible because the researcher is interacting with the participants and motivating them to transform: this might interfere with the results. Nevertheless, this study will also utilise a phenomenological research study. I shall be interacting with university lecturers, seeking their experiences. Even though the above-mentioned scholars view interaction of the researcher with participants as a weakness, Creswell (2012) states that this could also be perceived as a strength in a qualitative study: it gives the researcher the opportunity of generating more data and gaining a deeper understanding of the study area and participants. However, it is of paramount importance to guard against being biased, and to remain objective (Linda, 1994).

1.9.3 Research style

In addition, to the qualitative approach, I also used phenomenological research because the central idea in this study is to study lecturers’ experiences. Creswell and Poth (2017) and Cohen, et al. (2007) describe phenomenological study as a study elucidating the meaning for several individuals of their lived experiences of a concept. Phenomenologists describe what all participants have in common as they experience the phenomenon. The aim is to reduce individual experiences to a universal essence (van Manen, 1990). Similarly, Creswell, Ebersohn, Eloff, Ferreira, Ivankova, Jansen and Van der Westhuizen (2010) note that phenomenological study focuses on the meaning based on experiences held by participants able to provide comprehensive descriptions. Van Manen (2014, P. 27) states that phenomenological research begins “with wonder at what gives itself and how something
gives itself”. I shall employ phenomenological research, because first, I wish to explore how geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university. Second, I wish to explain the reasons for lecturers reflecting in particular ways on the use of Moodle in teaching geography at a South African university. Third, I wish to understand the lessons learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university.

1.9.4 Sampling

Cohen and Holiday (1996) identify the two major samplings. The first is probability sampling, which is also known as random sampling, in which the focus is on the wider population with an equal chance being given for selection. The second sampling method is non-probability sampling, also known as purposive sampling, in which the focus is on a few select members. Bertram and Christiansen (2014) state that the word ‘purposive’ denotes that the researcher selects or has chosen a particular group for a particular purpose. Furthermore, purposive sampling may be undertaken because it is considered representative of the wider population. Bertram and Christiansen (2014) refer to this method as criterion sampling because the researcher selects particular participants to meet a particular criterion. For this study, I used both purposive sampling and convenience sampling. Convenience sampling falls under non-probability sampling. This study involves five university lecturers from one university in South Africa; the selected lecturers teach geography. The prerequisite for selection of these lecturers was that of personal, professional and community interest in this study, and willingness of participants to participate in this action-research study.
1.10 Methods of Data Generation

The following three techniques of data generation have been utilised, namely, reflective activity, artefacts, and one-on-one semi-structured interviews.

1.10.1 Reflective activity

Blarkie (2007) describes reflective activity as an open question that allows the respondent to use their own words to answer; I gave participants an open-ended questionnaire for their reflective activity. Questionnaires were constructed using the concepts framing this study. I conducted two sessions of open-ended questionnaires (reflective activity). The advantage of open-ended questionnaires is that the participants are able to respond as much as they wish to. Open-ended questionnaires are suitable for investigating complex issues in which simple answers cannot be provided, (Cohen et al., 2007). However, the disadvantages of questionnaires include that the respondent may overlook instructions, being preoccupied with the demand to write. In addition, to complete a questionnaire takes more time than to place a tick in a rating-scale box (Cohen et al., 2007). To overcome this challenge, I gave participants 3 days to complete their questionnaires. I also reminded them via email to avoid time wastage.

1.10.2 Artefacts

An ‘artefact’ is something that has been created by humans to convey a particular message for a particular period (Friedman, 2007; Smith, 2007). Smith (2000, p. 3) further interprets artefacts as “objectified human knowledge and practice.” Cohen et al. (2011) describe artefacts as one of the ways of conveying messages used in a research, for example, use of objects that are designed to tell a story, equipment, pictures, and maps. According to Cohen (2011), artefacts have the potential to give researchers an instant, clear, message. They are easily observed, and at the same time easy to interpret. Artefacts may be seen, observed by smell or touch, and therefore these senses allow the researcher to easily interpret and analyse artefacts. A researcher can stimulate or probe participants easily when using artefacts. Both
participant and researcher may use artefacts to generate information. At this level lecturers are expected to provide data using artefacts.

1.10.3 One-on-one semi-structured interviews

From artefacts, I moved further to one-on-one semi-structured interviews. Interviewing is one of the best instruments for data generation (Seidman, 1998). According to Clifford, French, and Valentine (2010), semi-structured interviews are a conversation between participants and the researcher, the researcher setting the topics as the subject matter. The conversation is informal, and responses are open. Participants use their own words to respond rather than simply giving a ‘yes’ or ‘no’ answer. Haralambos and Foster-Carter (1985) state that semi-structured interviews are seen to be more appropriate for drawing out attitudes and opinions of the participants. The qualitative researcher who approaches qualitative research from a qualitative perspective wishes to make sense of feelings, experiences, social situations, or phenomena as they occur in the real world; and therefore wishes to study them in their natural setting (Terre et al., 2006). Interviews with participants were conducted using interview schedules. According to Bell (1993), a major advantage of interviews is their ‘adaptability’. The interviewer can follow up on ideas, and probe responses, which is beyond the limitation of questionnaires. The probing of their responses will enable participants to clarify and develop their responses; whereas in a questionnaire the responses have to be taken at ‘face value.’ Prompting and cues will be used to encourage participants to elaborate further. The primary aim of using these interviews is to generate insight into lecturers’ experiences as individuals, which goes beyond artefacts. These semi-structured interviews took place in the studied university, during the designated schedule; each participant had been given 45 minutes to respond to the questions. As the phenomenological research study consists of a cycle with two phases, these interviews were held over two phases.

1.11 Data Analysis

The generated data will be analysed according to De Vos’s (2010) model, which is a combination of Creswell’s (1988) analytic spiral model and Marshall and Rossman’s model (1999). This model states that analysing data is a process of bringing up emergent themes and findings from the generated data. De Vos (2010) suggests the following stages when
analysing data: the procedure of keeping data; generating data and initial analyses; handling acquired information; document review; creating classes; forms and subjects; recoding the information; trying the found understandings; developing other understandings and representations; and consolidating the data in the form of a report. The data was transcribed, compared with the literature review, and combined to find understanding of postgraduate lecturers’ experiences on using Moodle in teaching geography. The theoretical framework and conceptual framework have been used to guide the results, through all aspects of learning that are incorporated in order to formulate a conclusion about the topic. The literature review has also played a major role in data analysis, in that it provided information on what other scholars have discussed in their studies so that I could compare and construct findings.

1.12 Trustworthiness

“The aim of trustworthiness in a qualitative inquiry is to support the argument that the inquiry’s findings are worth paying attention to.” (Lincoln & Guba, 1985). In any qualitative research project four issues of trustworthiness demand attention: credibility, transferability, dependability, and confirmability. Credibility is an evaluation of whether or not the research findings represent a credible “conceptual interpretation of the data drawn from the participants’ original data” (Lincoln et al., 1985). To address credibility, I have employed triangulation. Triangulation is the use of two or more methods of data collection in the study on some aspect of human behaviour (Cohen et al., 2007, p. 112). I employed triangulation by using open-ended questionnaires, artefacts, and semi-structured interviews. Moreover, to enhance credibility, I provided sufficient details on the way evidence was produced, and used suitable participants – postgraduate lecturers who are teaching geography. These lecturers were selected because I regard them as specialists in teaching geography: they will be a good source of data for this study. Transferability of this study depends on the context of the study. This study will not be transferable to a different context. To ensure dependability, I used a tape recorder and then produced transcripts; I also took transcripts of the participants back to them to ensure that my interpretation of their responses was accurate and authentic.
1.13 Limitation of the study

Limitations are those factors or conditions beyond the reasonable control of the researcher that impinge on the execution of the study and/or the validity of the findings (Moyo & Mumbengegwi, 2001). Factors that can pose as weaknesses in any study and over which the researcher has little or no control are called limitations (Simon, 2011). Time and financial constraints narrowed the size of the participants, the duration of the research, and the geographical area covered. The study relied on the voluntary cooperation of participants, which is difficult to secure because of unknown circumstances. Participants may misinterpret the research questions, deliberately falsify information, or lack the ability to articulate their views, values, or perceptions (Creswell, 2003).

1.14 Arrangement of Chapters

1.14.1 Chapter One: Research synopsis

This chapter provides the background of the study, by defining the subtopics, purpose of the study, location of the study, rationale for the study, literature review, objectives of the study, together with critical research questions, research design and methodology, research approach or style, sampling, data-generation methods, data analysis, ethical clearance, trustworthiness and the limitations of the study. These subtopics are presented in the form of a flow chart showing the collaboration of concepts, so as to be understood easily by the readers.

1.14.2 Chapter Two: Theoretical and conceptual framework of the study

This chapter is about unpacking and aligning curricular benchmarks with three types of experiences. Furthermore, this chapter demonstrates the relationship between the teacher, curricular benchmarks, and theories. These curricular benchmarks are teaching targets, content, pedagogical approach, tasks, teaching and learning space, assessment, and accessibility. Furthermore, this chapter discusses the theoretical framework underpinning this study. This study is framed by Technology, Pedagogy, and Content Knowledge (TPACK). Utilising this theory assisted me in gaining a better understanding of the research paradigm; experiences as an investigative phenomenon, and new knowledge about the TPACK theory.
1.14.3 Chapter Three: Moodle as an open-source learning management system: opportunities and threats

This chapter is about engaging the literature surrounding this research topic. The literature review that has been discussed is in two parts. The first part discusses literature related to three types of teacher experiences (self, shared, specialised); the second part of the literature discusses the curriculum and Moodle. This chapter utilises literature related to the objectives of the study, which aim to answer the three research questions that have been outlined in Chapter One.

1.14.5 Chapter Four: Research methodology

This chapter focuses on explaining the research strategy that is used in this study; and how the strategies are used to achieve the research objectives, answering critical research questions. This chapter discusses the research paradigm employed – the critical paradigm. The research style employed is the qualitative research, including a phenomenological research; the sampling employed is convenience sampling; and the data-generation methods used are experience activity, artefacts, and semi-structured interviews. The issues of trustworthiness such as credibility, dependability, transferability, and confirmability are also addressed in this chapter, including the limitations of the study.

1.14.6 Chapter Five: Data presentation and analysis

Chapter Five focuses on providing the results of the study. This qualitative research study focuses on geography lecturers’ experience of Moodle as an effective learning management system (LMS) at a selected South African university. The findings are presented using concepts, tables, diagrams, artefacts, and words. These concepts are discussed as themes. To ensure that the voices of the participants are not lost, I included direct quotes in the presentation of the data.

1.14.7 Chapter Six: Recommendations and conclusion

Chapter Six focuses on summarising the whole study by checking whether the objectives and
findings of the study match, in order to address the research questions. In this chapter I summarised the research findings. The chapter also includes the conclusions of findings on each theme presented in Chapter Six, and recommendations for the study are provided.

1.15 Chapter Conclusion

In this chapter I summarised the overall study, wherein I describe my teaching statement, explaining the purpose of this study, indicating the context at which this study is conducted. The rationale for conducting this study is specified; preliminary literature reviews are included which give the reader an idea of the complete literature in Chapter Two. The objective and complementing critical research questions are stipulated, and the theoretical framework (TPACK) that is used in this study has been identified. This study is a qualitative study, employing a critical paradigm and phenomenological research study as an approach. Five geography lecturers are the participants which were selected purposefully and for convenience. Three methods of data generation were used: reflective activity, artefacts, and one-on-one semi-structured interviews. Ethical issues and limitations were intensively considered in this study.
CHAPTER TWO:
THEORETICAL AND CONCEPTUAL FRAMEWORK OF THE STUDY

2.1 Introduction

The previous chapter focused on exploring the concept of experiences. Beginning at the roots of this concept which is experiences enables teachers to have a better understanding of the concept of experience. However, with new knowledge that has to be generated, propositions such as self-experience, specialised-experience, and shared-experience were crafted based on the literature reviewed, which expanded on teachers’ understanding and application of experience. The literature further engaged with the definitions of curriculum drawn from Pinar’s (2004) understanding and van den Akker’s (2009) whose understanding is in line with Pinar’s (2004). In the previous chapter it was clear that, for curriculum to be effective, it must ensure that it embraces three levels of experience: self-experience, shared-experience and specialised-experience. The concept of Moodle as the teaching and learning resource was extensively discussed, as were the three important propositions of resources; hardware, software, and ideological-ware. van den Akker identified ten components of curriculum, which he referred to as the curriculum spider-web concepts, one of them being resources. Other concepts are discussed in this chapter: they formulate the conceptual framework of this study.

According to Christiansen, Bertram and Land (2010), the conceptual framework is the set of ideas that shapes the research in order for the study to have an area of focus. A conceptual framework organises concepts, expectations/assumptions, theories, and beliefs that develop an advanced research. The conceptual framework embodies a network of complete understanding about a phenomenon that upholds ontology, epistemology, and methodology of the research study (Miles & Huberman, 1994). Some scholars such as Leshem and Trafford (2007) utilise the term ‘synonyms’, which other scholars regard as the same as a conceptual framework. Maxwell (2005) identifies four ways in which a researcher can derive the conceptual framework: first, a researcher can use own experiences and knowledge. Second, they can use existing theories and research. Third, they may deploy exploratory research. Finally, there is the use of experiments. Of these four factors, concepts were mostly derived from the first and the second factors. Teaching experience allowed me to generate new
concepts with new propositions for this study, however, the roots of these concepts are from literature. This chapter utilises the concepts of curriculum to position the literature; these concepts were generated from the literature from eminent scholars such as van den Akker (2009); Khoza (2013); Khoza (2015); Khoza (2016a); Mpungose (2016); and Blanchard (2013).

Table: 2.1: Analyses of Types of Experience: Curricular Benchmarks, Propositions, and Proposed Questions (Khoza, 2015)

<table>
<thead>
<tr>
<th>Curriculum Benchmarks</th>
<th>Propositions</th>
<th>Proposed Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teaching Targets</td>
<td>Aims: Self-experience</td>
<td>What are your targets when teaching geography using Moodle?</td>
</tr>
<tr>
<td></td>
<td>Objectives: Specialised-experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outcomes: Shared-experience</td>
<td></td>
</tr>
<tr>
<td>2. Resources</td>
<td>Software resources</td>
<td>Which resources are you using to teach geography using Moodle?</td>
</tr>
<tr>
<td></td>
<td>Hardware resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ideological-ware resources</td>
<td></td>
</tr>
<tr>
<td>3. Content</td>
<td>Content knowledge, content expertise &amp; curriculum knowledge</td>
<td>What content are you teaching?</td>
</tr>
<tr>
<td>4. Pedagogical approaches/ Lecturers’ role</td>
<td>Student-centred role &amp; lecturer-centred role</td>
<td>Which approach do you utilise when teaching geography using Moodle?</td>
</tr>
<tr>
<td>5. Tasks</td>
<td>Informal tasks &amp; formal tasks</td>
<td>What type of geography tasks do you give to students?</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6. Teaching &amp; Learning space</td>
<td>Computer room &amp; lecturers’ room</td>
<td>In what sort of environment is the teaching and learning taking place?</td>
</tr>
<tr>
<td>7. Teaching &amp; Learning time</td>
<td>Hours, days, weeks, &amp; semester</td>
<td>When does the teaching of geography take place?</td>
</tr>
<tr>
<td>8. Assessment</td>
<td>Formative assessment, peer assessment, &amp; summative assessment</td>
<td>How do you assess students using Moodle?</td>
</tr>
<tr>
<td>9. Accessibility</td>
<td>Community support, financial support, physical support</td>
<td>How do you gain access to the teaching of geography students?</td>
</tr>
</tbody>
</table>

(Generated from Literature)

Table 2.1 above presents the way in which the literature review of this chapter will flow. First, there are guiding concepts that are at the core of any curricular presentation or level of curriculum. These concepts are followed by propositions that are used to strengthen the literature; such propositions play a critical role in debating these concepts in a holistic manner. Apart from this, these propositions are of paramount importance in identifying the gaps for further research studies around concepts of curriculum. Last, the proposed questions guide and shape the literature in relation to the concepts. This means that the answers to these questions address the research topic. Miles and Huberman (1984) state that the conceptual framework may be described as a map of the territory that is investigated by the researcher. Applying Miles and Huberman’s (1984) description of the conceptual framework, in mapping
this study, this chapter starts by presenting the concept of teaching targets as one of the most important concepts in the curriculum.

### 2.2 Teaching Targets: Aims, Objectives and Outcomes (AOO)

Hyland, Kennedy, and Ryan (2006) as well as Khoza (2013a) explain the concept of teaching targets, as the guide for teachers that provides the purpose of the lesson. Teaching targets assist teachers to set teaching standards in their classrooms or school. Teachers, schools, and universities are set for effectiveness in their teaching space (Hebson, Earnshaw & Marchington 2007; Blanchard 2013). Of importance as a teacher is to understand the aims one wishes to achieve, which requires proper planning. Such planning begins with the teacher defining teaching targets and having a clear understanding of the mission and vision of the lesson; thereafter, the plan may be initiated. However, the teacher must make formative assessment tasks and constantly monitor the implemented activity at hand. This form of assessment is based on the shared-experience in which a teacher/lecturer uses varying methods to evaluate student’s performance. Last, is to understand what one has achieved. A teacher can understand this question by conducting summative assessment, checking against outcomes and analysing the results (Blanchard, 2013). This form of assessment is based on specialised-experience. Hyland, Kennedy, and Ryan (2006) and Khoza (2015b) categorise teaching targets into three, namely, aims, objectives, and outcomes.

Hyland, Kennedy, and Ryan (2006, p. 5) define aims as, “a broad general statement of teaching intentions that indicates what the teacher intends to cover in a block of learning”. Similarly, Khoza (2016c) describes aims as the long-term goals that outline a teacher’s intention. Donnelly and Fitzmaurice (2005) state that aims indicate the general direction or map orientation of the module in terms of module content and the context. Aims support self-experience, meaning that when the module is driven by aims, it embraces the needs of the students and lecturer, thus producing a pragmatic curriculum. Learning outcomes describe what students are expected to know, understand, and demonstrate at the end of the lesson (Hyland, Kennedy & Ryan, 2006; Khoza, 2016c). In South Africa, outcomes were divided into two: critical outcomes and learning outcomes. Critical outcomes are composed of twelve generic statements that were produced by the South African Qualification Authority (SAQA)
to provide guidance to South African institutions in terms of the courses they offer to students (Khoza, 2013). Critical outcomes are the same as aims and objectives. An objective is the specific statement of teaching intention. It indicates a specific area that the teacher intends to cover in a specific period of learning (Hyland, Kennedy, and Ryan, 2006). Similarly, Khoza (2016c) describes the objective of teaching as a short-term goal intended by the teacher.

Donnelly and Fitzmaurice (2005, p. 16) describe learning outcome as “a statement of what the learner is expected to know, understand and/or be able to do at the end of a period of learning. Learning outcomes focus on learning rather than teaching and are not about what the teacher can provide but what the learner can demonstrate at the end of a module or course.” Similarly, Hyland, Kennedy, and Ryan (2006) point out that learning outcomes are clear for the student in terms of knowing what is expected of them. Apart from being clear, they are easier to achieve than objectives. Learning outcomes are generated according to Bloom’s taxonomy cognitive levels. Bloom’s model encompasses six domains which are: remembering, understanding, applying, analysing, evaluating, and creating. Otter (1992, p. 276) states that outcomes have three categories, namely; knowledge, skills, and personal competence. Knowledge-based outcomes focus on “cognitive gain in a broader essence” which comprises knowledge of material, understanding of theories, perspectives, abilities to apply knowledge, and ability to solve problems. Skills-based outcomes focus on specific skills such as analysing of data, word processing, skills related to learning processes, and development of autonomous learning. Personal-based outcomes focus on interpersonal skills, motivation, and the ability to organise various kinds of resource. Otter (1992) further notes that outcomes place a particular discipline at the centre, in which a teacher has to ask two major questions in his or her lesson. The first question is: what do I want the student to achieve? The second question is: how will I know that he or she has achieved it? The following diagram illustrates Bloom’s Taxonomy cognitive levels. Levels are clearly defined by concepts from the initial state to the ultimate stage. These cognitive level outcomes are generated based on observable and measurable concepts. This version (second version) of Bloom’s taxonomy focuses on the learner-centred approach, meaning the learner is at the core of learning. The curriculum acknowledges self-experience.
A qualitative study conducted by Khoza (2016c) reveals that these three propositions for teaching targets (aim, objectives, and outcomes) inform a particular experience. In Chapter Two, three types of experience (self-experience, specialised-experience, and shared-experience) have been extensively discussed. These experiences are aligned with three propositions. Self-experience (competence curriculum, curriculum that acknowledges personal identity, and the uniqueness of the teacher or student) is deep-rooted in the aims. Shared-experience (competence) is deep-rooted in outcomes. Specialised-experience (performance curriculum, specialization or content is at the centre of teaching and learning) deep-rooted in objectives. Khoza (2016c) further notes that aims enable teachers to find their personal identity, which helps them to understand their teaching strengths. The students are able to find their self-identity before they are required to understand and master what is regarded as external to them (shared-experience and specialised-experience). The following table summarises the interrelations between the three propositions of teaching targets, three levels of experience for teaching targets, types of curriculum produced, and the example of these curricula in South Africa.
Table 2.2: Teaching Targets, Categories of Experience, Type of Curriculum Teaching Approaches and Examples of these Curricula in South Africa

<table>
<thead>
<tr>
<th>Teaching targets propositions</th>
<th>Categories of experience</th>
<th>Types of curricula produced</th>
<th>Teaching approach</th>
<th>Example of these curricula in SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aims</td>
<td>Self-experience</td>
<td>Pragmatic curriculum</td>
<td>Student-based</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td>Specialised-experience</td>
<td>Performance/vertical curriculum</td>
<td>Content-based</td>
<td>Curriculum and Assessment Policy Statement</td>
</tr>
</tbody>
</table>

(Generated from the literature)

2.2.1 Self-experience (acknowledgement of individual identity) from aims

A qualitative study conducted by Khoza (2016b) on curriculum visions, finds that teachers are utilising the aims of their parents to pursue their learning, which then informs their personal identity. Who they are is the experience of their parents; the teacher’s self-experience of student teachers is overshadowed by the self-experience of their parents. When teachers teach with understanding of self-experience they are able to identify their strengths and weaknesses. When teachers find themselves, they also align themselves with certain curricula (Khoza, 2016b). Khoza (2016b) further notes that understanding experience (self-experience, specialised-experience and shared-experience) is of paramount importance to teachers because it may assist them to avoid doing what they are not supposed to do in their practice. Teachers must therefore first understand themselves as unique individuals who have differing potential in various contexts and time, before understanding what other experiences are demanding to be followed. Self-experience demands that teachers use a competence...
curriculum which is based on a student-related approach (Mpungose, 2016). Self-experience thus forms the basis of three levels of experiences. This implies that a teacher or a student must first understand his or her strengths and weaknesses as a unique person, in order to understand and perform in the other two levels of experience.

2.2.2 Shared-experience (community needs) from outcomes

Shared-experience places society as at a greater value or at the centre of the curriculum, which is why outcomes are based on the society or on the community. Khoza (2016b) discovered that, when teachers use observable learning outcomes to develop students learning, they assist students to acquire knowledge and skills to develop their community and society at large. At this level teachers utilise a competence/horizontal curriculum in which the interest is on the community, and not on the content or discipline. Khoza (2016b) further finds that some teachers are not utilising self-experience because they are framed by specialised-experience which is based on teaching rules or guidelines. Teachers have to perform rather than work on achieving certain aims or outcomes.

2.2.3 Specialised-experience (content or formal knowledge) from objectives

Mpungose (2016) acknowledges that self-experience has a greater influence on the specialised-experience or content rationale. Khoza (2016b) finds that self-experience limits some teachers, because of a certain influence by their parents. Specialised-experience is objectives-based rather than outcomes-based. In order for the teacher to achieve his or her objectives, he or she must provide instructions to the students. However, Khoza (2016b) also notes that a teacher may mix experiences (utilise both performance/vertical/discipline and competence/social horizontal/curriculum) within a specialised-experience in order to create a good teaching and learning space that accommodates all students with their differing needs. When teachers mix these experiences they produce and embrace curriculum concepts or learning signals, namely; teaching targets, content, pedagogical approach, tasks, teaching and learning space, time, and community (Khoza, 2016b). All three types of experience are seen as vital when they are utilised concurrently, which also strengthens the curriculum.
Within these three levels of experiences, in relation to their propositions, respectively, it is clear that a curriculum at any level (SUPRA), national curriculum (MACRO), school curriculum (MESO), teacher curriculum (MICRO), and learner curriculum (NANO) (van den Akker, 2003) must be integrated. A curriculum must be based on the capabilities of teachers and students as the implementers and receivers of the curriculum. They should therefore be accommodated: at the same time, the societal needs must be considered. Currently, the curriculum accommodates teachers and students instead of students and teachers accommodating the curriculum. Hence these three levels of experience are not able to operate independently from one another. This is simply saying that aims, outcomes, and objectives must be embedded in one curriculum. Khoza (2016b) correctly concludes that a combination of personal vision (self-experience), social vision (shared-experience), and discipline vision (specialised-experience), produce a strong foundation of reconstruction vision.

2.3 Content: Content Expertise, Content Knowledge, and Curriculum Knowledge

Schmidt, Wang, and McKnight (2005, p. 528) define content as a “sequence of topics and performances consistent with the logical and appropriate, hierarchical nature of the disciplinary from which the subject-matter derives”. Shulman (2000) describes content as what teachers are teaching. In this process, teachers are expected to understand concepts and the structure of the subject being taught. Hopmann (2007b) states that content meaning is not defined in terms of a specific content that is described in the formal or informal curriculum; rather, the definition depends on the interpretation of the teachers and students. Schmidt et al. (2005) further argue that content must have ‘coherence’ which is central in driving the purpose of schooling. The purpose of schooling may be driven by the content which is deemed important for addressing societal problems. When societal problems are addressed, shared-experience is catered for in the curriculum. Furthermore, the coherence of the content is central in driving the purpose of schooling that addresses student and teacher needs, suggesting that self-experience is addressed.

Bruner (1995) states that it is important to understand the structure that underlines human practice or actions. Any content that exists in schools or higher education is thus derived from shared-experience, self-experience, or specialised-experience. For teachers or lecturers, it is important to have a clear understanding of what type of experience underpins their teaching.
action. Karseth and Sivesind (2010) acknowledge that, when teachers understand these three experiences they are able to teach, depending on knowledge that a teacher has about the subject, and knowledge about individual students in relation to their learning ability. Shulman (1986, p. 8) places major teacher knowledge into seven categories. In this study, three propositions from Shulman (1986) are to be discussed, simply because the other propositions overlap within these three categories. These propositions are: content expert/pedagogical content (which encompasses self-experience), content knowledge (which encompasses specialised-experience), and curriculum knowledge (which encompasses shared-experience). The following table summarises the interrelation between the three propositions of the content, three types of experience, and the types of curricula produced, together with relevant teaching approaches.

Table: 2.3: Content Propositions, Levels of Experience, and Types of Curriculum Teaching Approaches

<table>
<thead>
<tr>
<th>Content Propositions</th>
<th>Types of Experience</th>
<th>Types of Curriculum Produced</th>
<th>Teaching Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content expert</td>
<td>Self-experience</td>
<td>Pragmatic curriculum</td>
<td>Lecturer-based</td>
</tr>
<tr>
<td>Curriculum knowledge</td>
<td>Shared-experience</td>
<td>Competence/integrated/horizontal</td>
<td>Student-based</td>
</tr>
<tr>
<td>Content knowledge</td>
<td>Specialised-experience</td>
<td>Performance/vertical</td>
<td>Content-based</td>
</tr>
</tbody>
</table>

(Generated from the literature)

The first proposition is the content expertise. Magnusson, Krajcik and Borko (1999, p. 673) define content expertise as the “concept that refers to teachers’ interpretations and transformations of subject-matter knowledge in the context of facilitating student learning.” Shulman (1986, p. 8) argues that content expertise is important because it classifies the distinct bodies of knowledge for teaching. It further demonstrates the combination of content and pedagogy that brings about understanding of diverse issues and problems in the classroom space in which teachers recognise varying abilities amongst students. Teachers’ questions and instructions are moulded in that they are experts in the content they teach. Heller, Daehler, Wong, Shinohara and Miratrix (2012) and Council (2000) argue that, although content expertise is important, it is not sufficient when the focus is on it alone;
proper and effective teaching and learning must be promoted all the time in and outside of the classroom. For effective teaching and learning, we need to focus on how learners think and learn; and therefore are obligated to understand how to teach in various disciplines. Heller et al. (2012) note that, when teachers are able to analyse students’ thinking, they are playing a significant role which is key in all courses. The ability to analyse students is necessary for formative assessment. Teaching goals are clearly identified to measure whether students have gained understanding of the subject matter (Council, 2000).

Eminent psychologists such as Piaget (1952) and Vygotsky (1962) wrote extensively on the process of knowing. Humans have prior knowledge, skills, beliefs, language, and so on, even before coming to formal education. The Council (2000) states that teachers should build new knowledge, moving from prior knowledge. This role requires teachers who understand students’ learning, who are able to pay attention to incomplete knowledge, false information, or non-existent concepts. This suggests that the content expert addresses the self-experience; meaning individual needs are at the centre of the curriculum. Loewenberg Thames and Phelps (2008) further argue that it is not sufficient for teachers to know their subject. They must have a clear understanding of their roles, testing material, organising principles, structures, and rules for them to implement the legitimate curriculum in their classrooms. It is not enough for the teacher to understand the content as it is. The teacher must move beyond and understand why it is so: what the underlying facts, or grounds are, and how actions may be justified.

2.2.1 Self-experience from content expertise

Content expertise boosts confidence of the teacher’s role of emancipating the society (Boody, 2008). This suggests that the content expert is what is within the teacher in relation to the subject matter. Furthermore, self-experience primarily considers that the students and teachers are unique, therefore the curriculum must be fair to accommodate the differing abilities of these individuals. In actual fact, the curriculum must be accommodated by students and teachers, not the other way around. A self-experience curriculum is the one that is based on aims. It is based on what is within an individual, not on the expectations of the specialization or community. A self-reflective curriculum must further develop talents of the students regardless of economic and social background. Considering students’ knowledge and
teacher’s knowledge in curriculum as a central point is essential in that the curriculum stands the potential of being driven by people who are responsible, passionate, and committed to perform to the best of their abilities. Similarly, a content expert is based on addressing the personal needs of the teacher. Young (2013) argues that learners and teachers are following prescribed rules which are imposed on them. When compliant with those rules, personal capabilities of each teacher and student are compromised. The internal being of the student and teacher is viewed as the “learning for its own sake” (Young, 2013, p.106).

The second proposition is curriculum knowledge. Schmidt, Wang, and McKnight (2005, p. 377) define curricular knowledge as the “awareness of how topics are arranged both within a school year and over time and ways of using curriculum resources to organise a program of study for students”. Berkvens, van den Akker, and Brugman (2014) identify three major categories of curriculum. The first category is intended curriculum which is based on policy and is for the curriculum managers. The second category is implemented or enacted curriculum which is based on the teachers’ practice. The last category is attained curriculum, which is based on learners’ experience measured by learning outcomes. In relation to these three categories, Shulman (1986) further identifies two forms of curricular knowledge that are important for teachers to understand in order for them to deal with the curriculum in their schools and universities. The first form is lateral curriculum knowledge, which Bernstein (1999) refers to as horizontal curriculum; while Khoza (2016c) refers to this as societal/social vision. This form of curricular knowledge is based upon learning of students from others or from the community. The second form of curricular knowledge is vertical knowledge which Bernstein (1999) refers to as performance curriculum. This curriculum falls under specialised-experience.

2.2.2 Shared-experience from curriculum knowledge

Shared-experience or shared-curriculum (vertical, horizontal, or competence curriculum) focuses on implementing the curriculum in the best interests of the community or society, the society being at the centre of the curriculum. Any activity taking place in the classroom must prioritise society. Khoza (2016b) notes that, in a competence curriculum, subjects are combined to form one learning area. In South Africa, we experienced the curriculum that was based on addressing the needs of the society. The competence curriculum is based on specific
outcomes which are divided into many critical outcomes, developmental outcomes, and learning outcomes (Khoza, 2016b). At this level, the learning education system in South Africa was based more on opinions. This competence curriculum, known as Outcomes-Based Education (Curriculum 2005), was introduced in 1997, with the aim of addressing the challenges of Apartheid in South Africa. It was hoped that the new education system was going to produce responsible citizens; based as it was on assessing learners’ performances against clearly defined outcomes. Sadly, it failed for a number of reasons. Thereafter, the Revised National Curriculum Statement from Grade R to Grade 9 was introduced. The National Curriculum Statement (NCS) for Grades 10-12 was also introduced. Again, this educational system failed. In 2012, a performance curriculum known as the National Curriculum Statement (NCS) was introduced.

The third proposition is the content knowledge. Shulman (1986, p. 9) defines content knowledge as “the amount and organisation of knowledge per se in the mind of the teacher”. Hill, Rowan, and Ball (2005) noted that Shulman means that content is the amount and organisation of knowledge in the mind of the teacher. According to Shulman (1986), content knowledge embraces concepts in the domain, questions facts and concepts, and questions the structure of knowledge in the discipline. According to Grossman (1990), content knowledge is one of the categories of curricular knowledge that teachers must be aware of and understand. When teachers understand content, they are able to understand goals and objectives of the subject and hence assist the students to reach them. Teachers are able to teach the content and at the same time articulate guidelines of the subjects across the topics or concepts covered in the curriculum. Content knowledge is addressing specialised-experience, in which the content of discipline is driving the curriculum. Grossman (1990) further argues that, when teachers have content of subject knowledge, they have a clear understanding of the vertical curriculum; teachers understand what students are learning and what they will be learning in the next few years. Thames and Phelps (2008) concluded that it is important for teachers to know the subjects they have been taught: when teachers know their subjects they are able to assist students with the content of the subjects. And teachers must use powerful ways of presenting content to students.
### 2.2.3 Specialised-experience from content knowledge (CK)

The interrelation between these two (specialised-experience and content knowledge) commences when a teacher demonstrates and understands specialization language, specific concepts, and proper utilization of teaching resources that go with teaching methods (Thames & Phelps, 2008). What is remarkable about specialised-experience is that it is driven by the content that must be covered by the teachers. Furthermore, specialised-experience is based on the subject specifics in which the body of knowledge is fixed. This is driven by the rationale that content transmitted or taught to students is of an international standard (Du Plessis, 2013). This simply says that teachers are forced to have a clear understanding of their modules or subjects owing to the demands of their specialization. According to Fraser and Bosanquet (2006), content knowledge in the implementation of the curriculum is the responsibility of the teacher. Students are regarded as consumers of a curriculum that is fixed. Fraser et al. (2006, p. 273) further points out that, “In this way, the curriculum is seen as a product that is delivered, rather than one that can be actively and flexibly developed by the teacher or the students”. Teachers have to follow a prescribed content and methods as they teach. They are channelled by the demands of the specialization content. This form of curriculum is referred to as a performance/vertical curriculum (Bernstein, 1999) in which the content of a particular specialization is given more recognition as the vehicle of a specialised-curriculum.

Khoza (2016c) refers to this curriculum as the professional/discipline/content) vision. This form of curriculum places the content at the centre of learning. Khoza (2016c) acknowledges that understanding of this form of curriculum is significant in assisting teachers to reflect in order to deliberate on the teaching spaces. South Africa began to employ a performance curriculum known as the Curriculum Assessment Policy Statement (CAPS) in 2012. CAPS is the amendment of the NCS, not a new curriculum as most people believe (Pinnock, 2011). CAPS still follows the same structure as NCS. However, the remarkable difference is that CAPS is content driven not outcomes-based as was NCS. Teachers were expected to achieve those outcomes. With CAPS, the content is fixed, and is subject-specific. The CAPS cognitive domain is utilised to measure whether the students have mastered the content of the specialization. The subjects and concepts stand on their own with no integration (Khoza,
2016b). In the performance curriculum, students learn the same body of knowledge across the respective grades.

Within these three propositions derived from the content, curriculum is balanced and embraces all needs, be they the needs of the teacher/student (self-experience), needs of society (shared-experience), or the needs of the content (specialised-experience). However, many studies are advocating that content knowledge is more significant than pedagogical knowledge and technological knowledge. This is on the basis that no curriculum may be implemented without the teacher’s content knowledge. Grossman (1990) states that content knowledge is important to teachers because teachers are able to identify goals and objectives and drive lessons, irrespective of whether they are in the position of student-based or teacher-based learning. Young (2013) argues that, when teachers have content knowledge, they are able to take students beyond their personal experiences and enable them to meet the demands of the world, even though content knowledge is seen as something intimidating. Shulman (1986) points out that content knowledge is crucial because it is made up of two structures: substantive and syntactic. The substantive structure is seen when teachers are able to demonstrate concepts using different ways and applying principles of specialization as the rules. Loewenberg et al. (2008) also argues that content knowledge is the foundation for teachers; teachers are able to assist students in the classroom when they have content knowledge. When teachers lack content knowledge they fail to help students, in particular, when the curriculum is based on the content. Teachers must also be clear on their role. Content knowledge allows teachers to work as instructors. Instead of focusing on content expertise as given, we need to measure and understand how it works for effective teaching (Loewenberg, Thames & Phelps, 2008) this means that content taught to students must be align to the context so that it will be effective to both teacher and student.

2.4 Pedagogical Approaches: Student-centred or Lecturer centred

Grussendorff, Booyse and Burroughs (2014) describe a pedagogical approach to the curriculum as the ways in which teaching and learning are planned to happen in the classroom environment. According to Grossman (2005, p. 6), pedagogical approaches are the “classroom instructions and interaction; instruction includes the interactions between students and the content during teaching time. These includes strategies used by the faculty, the nature
of instructional discourse and representation of content”. Grossman (2005) further cautions us that, when we refer to a pedagogical approach, we must understand that the focus should be on how one teaches, which is most important. This becomes part and parcel of what one teaches. Teachers should understand various approaches, and when and how to use them. This understanding informs the ways in which teachers engage with students in the classroom and with the teaching itself. Pedagogical approaches are divided into two major segments: student-centred and teacher-centred. More specific approaches are problem-based learning, direct instruction, and constructivist learning. The following table differentiates these two approaches to teaching.

Table 2.4: Teaching Approaches (generated from the literature)

<table>
<thead>
<tr>
<th>Student-centred</th>
<th>Teacher-centred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student-based</td>
<td>Content-based</td>
</tr>
<tr>
<td>Interactive</td>
<td>Teacher dominated</td>
</tr>
<tr>
<td>Integrated</td>
<td>Specialization/discipline</td>
</tr>
<tr>
<td>Collaborative</td>
<td>Individualism</td>
</tr>
<tr>
<td>Constructivist approach</td>
<td>Banking approach</td>
</tr>
</tbody>
</table>

The first proposition of the pedagogical approach is student-centred. Brown (2003) describes student-centred as a learning process that places student needs at the centre of classroom organisation. It acknowledges their learning, utilization of diverse strategies and styles of embracing their needs in the classroom environment. Brown (2003) adds that, in student-centred approaches, students may be observed or assessed working in groups, pairs, or individually. Milambiling (2001, p. 3) describes a student-centred approach as context-sensitive, suggesting that teachers should have clear understanding of diversity and students’ background in the classroom for better development of the curriculum that addresses students’ needs. At this level, the teacher’s role is to facilitate the learning process, paying attention to their areas of interests, needs, and the various learning styles of all the students. Lea, Stephenson, and Troy (2003), and O’Neill and McMahon (2005) characterise the student-centred approach as follows: students are active not passive; focus is on deep learning and understanding; students are encouraged to be responsible and accountable; students are encouraged to be independent; and they are encouraged to be autonomous in their learning. McCombs and Whisler (1997) identify two important factors that teachers should be aware of when planning to utilise a student-centred approach. First, characteristics of the students:
teachers should be aware of diverse students’ needs in the classroom. Second, teaching practices: teachers should be aware of teaching methods and strategies they utilise to accommodate diverse students’ needs in the content they teach. Toh (1994) describes a classroom in which the teacher utilises a student-centred approach as follows: students control and participate in discussions more than does the teacher; teachers direct instructions to the individual; the teacher supports students with different teaching material to facilitate their studies; students find the direction of the lesson on their own, assisted by the teacher or by one another; and the classroom setting is arranged to promote either individual or group work.

A reflective case study conducted by Barraket (2005) on teaching using a student-centred approach at a master’s level incorporated phenomenological research study as the methodology; both qualitative and quantitative methods data were used. This study concludes that the engagement with students in the classroom is characterised by high dialogue and interaction. This proved that students are strongly involved in the subject matter when using a student-centred approach. They are free to explore ideas based on their experiences. Among the important findings in Barraket’s (2005) study is that the student-centred approach is stronger at building common ground for learning, as students engage freely in the discussions. McCombs and Whisler (1997) similarly state that a student-centred approach places the characteristics of all students under the microscope; teachers know and understand each student more profoundly in the learning process. According to Toh (1994), this method of teaching means that students have moved from one step to the other. Students at this level have a certain responsibility for what is taught to them and how they learn. Milambiling (2001) recommends that we focus on a curriculum that is student-centred for the reason that it addresses the culture of students in a specific learning space. In other words, Milambiling (2001) suggests that we need to focus on self-experience or shared-experience (competence/horizontal curriculum) because these approaches are relevant in implementing the self-curriculum in which the focus is on what students have within themselves; and the shared-curriculum, in which the focus is on what the community wants to achieve about what is taught.
2.4.1 Self-experience from a student-centred approach

The student-centred approach suggests that the teacher must have clear knowledge of the curriculum (curriculum concepts: teaching targets, content, pedagogical knowledge, resources, time, teaching & learning space, assessment, and community) and relevant skills in order to be able to involve students in the subject matter. The student-centred role is employed in the competency-based curriculum. In this study the concept of “shared-experience” is utilised and within shared-experience, the competency curriculum or horizontal approach is embraced. With shared-experience, the learning is driven by specific learning outcomes. Learning programmes must focus on students and what must be achieved at the end of the lesson (Grussendorff & Booyse, 2014). Shared-experience always incorporates inclusivity, diversity, and the students’ background in a particular context. For a teacher to explore students, a student-centred approach must be employed.

The second proposition of the pedagogical approach is lecturer/teacher-centred. Toh’s (1994) study on teacher-centred approach describes the lecturer-centred approach as a process in which a teacher takes control of what is taught in the classroom. Similarly, Al-Zu’be (2013), describes a lecturer-centred approach as the set of curricula that places the teacher at the centre, to use his/her expertise in developing the students to better understand what is taught. The students act as receivers of knowledge, while the teacher acts as the transmitter of knowledge. Toh (1994) describes a classroom in which the teacher utilises a lecturer-centred approach as follows; the teacher is monopolising the discussion rather than the students; instructions are from the teacher to the students in the classroom; the teacher is in control of every activity taking place in the classroom; students are passive role players; the teacher uses textbooks as the guide to what must be taught; desks normally face the chalkboard in rows. This approach is associated with less noise because the teacher is the one who passes information to students; the students must be quiet and listen to grasp what is taught. Last, a teacher teaches first; then the assessment follows after the lesson; learners are assessed on what was taught to check or measure whether students took in what was taught. This approach to teaching places emphasis on step-by-step acquiring of knowledge. Grading of students relies on their mastering the content in a sequential manner. Students become active only when they are expected to conduct activities following the explanation of rules and principles provided by the teacher.
2.4.2 Specialised-experience from teacher-centred approach

An interpretive qualitative case study conducted by Khoza (2016b) on understanding curriculum visions, using honours student teachers in education under curriculum studies, states that a teacher-centred approach favours specialised-experience (discipline/content/professional vision). A teacher-centred approach is employed in the performance curriculum. This study utilises the concept of ‘specialised-experience’ to describe a teaching approach that focuses on content knowledge. The subject matter is explicit and straight to the point. Teachers and students are clearly guided from the start and expectations on teachers and students are clearly defined. Furthermore, the content for students must be well structured, giving time of assessment and specifications. This gives the opportunity to the teachers to focus on content knowledge rather than the use of various documents to structure content and lesson plans (Grussendorff & Booyse, 2014). A teacher-centred approach is based on what is required by the teacher, suggesting that this approach is based on objectives of the subject or content. With a lecturer-centred approach, students listen and take notes, and are expected to reproduce what was taught to them. This form of teaching is based on the ‘preaching’ students receive, uniform content, and the same grading criteria. On the side of lecturers, they are forced to prepare and master the content since students depend on them for knowledge (Johnson & Seagull, 1968).

Johnson and Seagull (1968) state that many teachers in schools are teaching using the lecturer-centred approach regardless of the curriculum demands because they were taught by this approach. As the result of this, teachers struggle to employ other teaching approaches that might be useful in the classrooms. Johnson et al. (1968) further state that, for a better learning environment, students must be active in their learning. The role of teachers is to manage the environment as the source of information. Traditional teaching approaches should be modified by teachers to allow an environment in which all students are able to question the information. Johnson and Seagull (1968) view curriculum from the position of self-experience. Contrary to the qualitative study conducted by Struyven, Dochy and Janssens (2010), in which they concluded that student teachers’ approach to teaching is informed by factors such as self-esteem, workload, and so on, although these student teachers were taught via a lecturer-centred approach; they still believe that this approach is not inappropriate for...
learners. These student teachers are not applying the so called ‘teach as they have been taught’ (Struyven, Dochy & Janssens 2010, p. 61). A qualitative study conducted by Lea et al. (2003) indicates that students in universities prefer to be taught using a student-centred approach, even though some students prefer education that will strike the balance between these two approaches. The student-centred approach is often viewed as an approach that lacks support and guidance. This study finds that a student-centred approach motivates students and leads to students’ success in their academic work. Long (1985, p. 19) states that, “of course, no curriculum will ever be totally subject-centred or totally learner-centred. However, even within institutions in which teachers and students have minimal input into the curriculum development process it is possible to introduce elements of students-centeredness. It is worth considering the ways in which your curriculum might be modified to make it more learner-centred”.

2.5 Tasks: Formal and Informal Tasks

The concept “task” is given many and varying meanings or definitions by scholars; task having different meanings in different fields. In the field of education, a task is defined as a “piece of work undertaken for oneself or others, freely or same rewards… in other words by tasks it meant the hundred and one things people do in everyday life, at work, at play, and in between” (Long, 1985, p. 89). Richards, Platt, Weber, and Inman (1986, p. 289) define ‘task’ using the linguistics dictionary as “an activity or action which is carried out as the result of processing or understanding language”. This definition suggests that a task must be driven by the teacher, for clear understanding of students. This definition also suggests that pedagogical knowledge of the teacher is important when setting the task for students. Breen (1987, p. 23) defines task as, “any structured language learning endeavour which has a particular objective, appropriate content, a specified working procedure and a rage of outcomes for those who undertake a task”. Long (1985) notes that a task should be structured as follows if the aim is to benefit the students. First, the teacher should identify the students’ needs. Second, there must be understanding of the subject content. Third, the language must be user-friendly to students. Last, students’ achievement must be measured. Wajnryb (1992) presents an ‘observation task’. This task focuses on the teacher for self-experience or personal development. Jacob, O’Leary and Rosenblad (1978) present two more types of task given to students in the classroom, namely, informal tasks where the focus is on the students, and formal tasks, where the focus is on the instructions of the teacher.
The first proposition for task is ‘observation task’. Wajnryb (1992, p. 7) defines observation task as “a focussed activity to work on while observing the lesson in progress. It focuses on one or small number of aspects of teaching and learning”. Wajnryb (1992) notes that observation tasks are based on the teacher’s understanding of various means of teaching and learning; this is based on observing your own lesson as the teacher, for self-development. According to Wajnryb (1992), observation tasks assist the teacher in two important ways. First, they allow the teacher to focus on one or two aspects of the teaching and learning. Second, when a teacher focuses on two few aspects of teaching and learning; data generated will be convenient, and is likely to improve the subject. These two important ways suggest that observation tasks are the platform that provides teachers with multiple opportunities of lesson development from different angles. Furthermore, teachers are provided with an opportunity of analysing and reflecting on the lesson to improve teaching and learning.

The second proposition for task is the informal task. Lucas and Moreira (2009) describe an informal task as social knowledge, yet based on a context situation that involves interaction between students and teacher as collective practice. Informal tasks may be taken individually or collectively without any major criteria or instructions to follow. Tudor (2013) notes that an informal task can take place anywhere even outside the classroom or school perimeters. Such a task is used for measuring students’ understanding of the subject content with no intention of formally assessing students or issuing progress results. Tudor (2013) concludes that teachers should utilise various teaching strategies, with the aim of providing informal tasks at the end of the lesson. This includes even the use of teaching and learning resources. King, Petrenchik, Law and Hurley (2009) state that teachers should be aware that students’ participation is not the same in these tasks. Students are most active in the informal task, as such tasks are unstructured; or there are no structured methods of dealing with the tasks. Teachers mostly apply their knowledge of the subject matter and experiences to assess students. Jones and Dexter (2014) acknowledge that informal tasks are important for both teachers and students, however, teachers should be aware that time is important when dealing with informal tasks. Informal tasks improve communication between teacher and students; and teachers become aware of support needed by students.

The third proposition for a task is the formal task. Lawson (1978) refers to formal tasks as “formal levels of reasoning” in which students are given more advantages and are likely to use pen and paper, which further assists them to improve their writing and reading skills, and
is likely to improve their level of performance. Jacob, O'Leary, and Rosenblad (1978) indicate that a formal task is based on a teacher’s instruction to students. Leask (2009) describes formal tasks as the teaching and learning activities that are arranged formally around a well-defined content. Formal tasks indicate topics and resources. King, Petrenchik, Law, and Hurley (2009) state that, at this level, tasks given to students are structured following the demands of a formal curriculum used to grade the students. At this level, students are passive, having little or no platform on which to discuss and share knowledge on the subject matter.

Wajnryb (1992) describes why tasks are important in the classroom regardless of whether formal, informal, or observation. First, tasks are important for teaching, and using tasks is another way of observing with clarity and understanding. Second, tasks assist teachers to enable students’ understanding of the content of the subject matter. Third, teachers become aware of the classroom realities which assist in lesson preparation. Last, tasks create greater understanding between the teacher and the students, for teacher’s understanding of theories improves, and allows practicable and appropriate utilization of teaching approaches that are in line with the curriculum. Wajnryb (1992) also groups tasks into these segments: learner tasks, language, learning, the lesson, teaching skills and strategies, classroom management, and teaching resources. Leask (2009) further states that formal or informal tasks are both important in different ways. They shape the experiences of the student in many ways, which include skills, knowledge, and attitudes. A qualitative study conducted by Leask (2009) indicates that, in giving students various formal or informal tasks, they gain skills of asking questions, and responding effectively to the questions, which promotes class participation. Similarly, Moore (1997) notes that students should be given various tasks in order to improve their performance; students learn from practical tasks, tests, opinions from teachers, peers, and so on.

2.5.1 Self-experience from observation tasks

Wajnryb (1992) describes observation tasks as those which promote teachers’ understanding of the content taught; and are used for self-development, aiming to boost both professional and personal identity. This suggests that observation tasks are for self-experience. Teachers use observation tasks to discover themselves as unique individuals with different capabilities that shape their understanding of the content taught to students. Students also have a better understanding of content taught to them when given observation tasks. Khoza (2016b)
acknowledges that self-experience promotes what is within the student and the teacher. Therefore, it is important to note that tasks based on observation highlight the uniqueness of both students and teacher. Khoza (2016b) notes that, when using tasks that assist teachers and students to find themselves, tasks are aligned with the competency curriculum (self-reflective curriculum). Mpungose (2016) states that the competency curriculum assists teachers and students to better understand their strengths and weaknesses as unique individuals. Khoza (2016b) reminds that a competence curriculum is important for both teachers and students, because it allows users to first find themselves and who they are in the space of teaching and learning.

2.5.2 Shared-experience from informal tasks
A case study conducted by Lucas and Moreira (2009) focuses on “Students’ perceptions of the use of Social Networking” and acknowledges that informal tasks are intended to gain social knowledge based on the context between students and teacher. Informal tasks place knowledge from society at the centre of teaching and learning; the values and morals of society drive informal tasks. Lucas and Moreira (2009) maintain that informal tasks belong to society. Students’ learning must be based on the values and principles of society. Khoza (2016b) notes that curriculum that is driven by society is a horizontal or competence curriculum, meaning that the curriculum is constructed on the moralities and principles of the community. Therefore, it is important for teachers to know and provide students with informal tasks, so that students benefit from the skills, values, and knowledge of their society. Teachers should ensure that the needs of the community are kept at the centre. For example, in South Africa during the times of the competence curriculum (Outcomes-Based Education and National Curriculum Statement) teachers were encouraged to design informal tasks that related to what the students understand as their local available knowledge in the community.

2.5.3 Specialised-experience from formal tasks
Leask (2009) describes formal tasks as the tasks conducted for formal reasoning purposes: students are there to reason in accordance with their specialization or discipline. Specialised-experience places content that must be measured by formal tasks at the centre of the teaching and learning process. Teachers who design and give students formal tasks are promoting the specialization of content-knowledge which is the same as specialization of formal tasks. Specialization of formal tasks utilises a vertical/performance/specialised curriculum, in which teachers and students are expected to complete formal tasks as prescribed by policy.
tasks belong to the specialization or discipline; therefore, specialization is at the centre of any curriculum. Any formal tasks must accomplish the needs of the specialization. For example, in South Africa we have CAPS in Basic Education. Teachers conduct formal tasks that speak directly to the global needs of specializations.

2.6. Teaching and Learning Space
Marton, Tsui, Chik, Ko, and Lo (2004) state that the teaching and learning environment is the centre of attraction for both the economy and politics, which is why the curriculum is constantly contested. Fraser (1998, p.3) defines the learning environment as, “the social, psychological, and pedagogical contexts in which learning occurs and which affect student achievement and attitudes”. Yan and Kember (2003) state that there is a strong relationship between how students learn and their learning environment. The approach used by the teacher has a critical role to play in students’ learning outcomes. Hess (2002) comments that the learning environment contributes to the day-to-day learning experiences of the student, which plays a critical role in teaching and learning. Similarly, Kember and Leung (2005) offer that the teaching and learning environment has a significant role to play in student development and capability. This includes self-engagement learning, communication skills, problem-solving, adaptability, and interpersonal skills. Kember et al. (2005) further state that the proper teaching and learning environment is the one that promotes active participation of students in which students are actively engaged in the curriculum that promotes analytical skills and self-learning capability to students. Kember et al. (2005) present three propositions for the teaching and learning environment as different levels of individual capabilities. First is personal capability. Second comes disciplinary capability, and last is societal capability, which is based on religion, humanism, or moral perspectives.

The first proposition of the teaching and learning environment is personal capability. Kember et al. (2005) aver that the teaching and learning environment promotes the various capabilities of an individual which include personal capabilities of both teacher and student. Personal capability refers to the ability of the student to perform outside the confines of the formal learning institution. Soodak and Podell (1996) describe personal ability as an ability that is based on teachers’ beliefs that they hold when displaying various teaching skills. These skills lead to the desired outcomes of the students. Poulou (2007) adds that personal capability of the teacher involves many aspects, such as the teacher’s behaviour in the
presence of the students; the ways in which the teacher disciplines students; and the enthusiasm about teaching evinced. A qualitative study conducted by Poulou (2007) indicates that teachers who have strong personal abilities possess good teaching behaviours and teaching ideas that benefit their students, hence students have the potential of performing to the best of their ability. Similarly, Khoza (2015) argues that a strong foundation for personal vision builds strong societal and discipline visions.

The second proposition for the teaching and learning environment, is disciplinary capability. Disciplinary capability is based on the in-depth study and understanding of a particular discipline, its content and context (Kember et al., 2005). Discipline knowledge is important because it prepares the students for the workplace, therefore it must be sufficient for students to cope with the demands of the real world beyond the classroom space. Kember et al. (2005) argue that the majority of graduates are ill-prepared for employment because knowledge of the discipline is not properly covered. Kember et al. (2005) further note that discipline capability promotes a range of skills such as cognitive skills. Once students have mastered discipline-based learning, they are able to cope with the employer in the real world. Other scholars such as Waxman (1991) believe that teachers must use experience to develop disciplinary capability of themselves and their students. Experiences are a two-way process, with both teachers and students learning from one another and thus developing in terms of understanding the content and the context of the discipline.

The third proposition for the teaching and learning environment is society capability (Kember et al., 2005).

Society capability is the knowledge acquired on the basis of social needs that are referred to as social-knowledge. Yan and Kember (2003) indicate that students who are grounded by social capability perform better in activities that require social dimensions. Students frequently enjoy engaging on social issues. Such students wish to be taught as a group so that they enjoy full participation both in the classroom and outside. Yan and Kember (2003) describe the behaviour of these students, at this level, as “engager behaviour.” Waxman (1991) agrees that, when students are engaging with one another, they promote a higher level of knowledge interpretation. Students develop analytical skills which they are going to use in the real world. Furthermore, students find themselves appreciated by the community or
society more when they deal with activities that address the social issues where they live (Yan and Kember, 2003).

2.7 Assessment/ Evaluation: Formative, Summative, and Continuous Assessment

Heywood (2000) states that the term assessment is a new concept in the field of education. Traditional concepts are testing, grading, and examining. Taras (2005, p. 467) defines assessment as “a judgement which can be justified according to specific weighted set goals, yielding either comparative or numerical ratings”. Taras (2005, p. 468) states that “assessment is an integral part of all aspects of daily life”. His definition is underpinned by Scriven’s (1967) understanding of assessment. Scriven (1967) maintain that it is important to justify data that is gathered, together with the criteria of utilising that data; the use of weightings; and proper selection of goals. Taras (2005) acknowledges that assessment is a process, therefore steps are required to fulfil this process of assessment. Part of such steps is to understand goals and standards. All forms of assessment require parameters that are either explicit or implicit. Black (1998) notes that assessment gives a managerial role to teachers. Instead of teaching responsibility, teachers have the potential to predict students’ performance; and sometimes the focus is on recording students’ marks instead of analysing the results. Scriven (1967) presents two propositions of assessment, namely formative assessment (assessment-for-learning), and summative assessment (assessment-of-learning). Black (1998) adds self-assessment (assessment-in-learning).

The first proposition of assessment is formative assessment (assessment-for-learning). Taras (2005) describes formative assessment as the assessment that needs feedback on where ‘gaps’ are identified between the levels of task that are being assessed and expected standards. Furthermore, formative assessment indicates the areas of improvement and where work may be improved to reach the expected standards. Similarly, Bloom (1969, p. 48) describes the aim of formative assessment as providing feedback and corrections where needed in the teaching and learning process. Bennett (2011) states that formative assessment includes principles such as techniques and strategies that are embedded in the cognitive domain. The cognitive domain is important for teachers and students; teachers are able to characterise tasks, activities, and exam questions to the level of the student. Cognitive domains are stressed by Bloom (1969) who uses a taxonomy with different terminologies to distinguish group levels of student thinking. Bennett (2011) states that the focus on formative assessment
is on student performance not on the course programme. This suggests that formative assessment is based on helping students to overcome learning circumstances and to encourage them. Harlen and James (1997) identify the following characteristics of formative assessment: it is part of the teaching and learning process; it considers individual capabilities or efforts; it considers certain skills and behaviours of the student; it is concerned with reliability; and it recognises that students should be active in their learning processes.

The second proposition of assessment is continuous assessment. Hernandez (2012) regards continuous assessment as including both formative and summative methods of assessment. Heywood (2000) argues that in the United Kingdom, prior to the introduction of summative and formative assessment, they used the concept of continuous assessment. Heywood (2000) further notes that continuous assessment means examinations written by students, coursework (essays and projects), and quizzes. Trotter (2006) argues that continuous assessment is there to encourage students to engage in the process of learning through an ongoing process. Similarly, Heywood (2000) notes that students are part of the learning process and therefore effective feedback mechanisms must be part of their learning in the form of continuous assessment. A qualitative study conducted by Hernandez (2012) on the use of continuous assessment concludes that the majority of universities are not using continuous assessment in their modules; rather, universities focus on examinations which carry a huge percentage of the student’s performance. However, the study finds that the majority of students perform better when on continuous assessment rather than per examinations.

The third proposition of assessment is summative assessment. Bennett (2011) describes summative assessment as an assessment used to judge what students attain at the end of the course programme. Similarly, Taras (2005) describes summative assessment as the assessment that focuses on judging students based on all collected evidence up to the given period. At the end of a particular period, final judgement is provided to the student. Garrison and Ehringhaus (2007) state that the aim of summative assessment is to gauge students’ understanding of the content taught to them, and, when necessary, the teacher provides adjustments and interventions. Teachers are obligated to use summative assessment as a tool for accountability measurement where a grading process is at the centre of accountability. Some of the examples of summative assessment are common tests, monthly tests, semester tests, and final examinations. Harlen and James (1997) identify the following characteristics of summative assessment: it takes place at a particular time, it focuses on progression of the
students, it requires certain methods of focusing validity, and it is based on particular procedures and evidence for a particular performance.

2.7.1 Self-experience from formative assessment
Chappuis and Stiggins (2016) argue that when we refer to formative assessment we are referring to self-experience. Unfortunately, we do not include students when teachers conduct formative assessment, even though it is about them and their self-development. Self-experience means finding your own strengths and weaknesses so that students may be given greater opportunities to be assessed per formative methods. This means that students are given more platforms on which to find themselves as unique individuals in the same classroom. Students learn communication skills early on; such skills contribute to their success and they feel part of the learning process. As a result, a higher number of students are improving in their performance (Hernandez, 2012). This suggests that when the curriculum is designed to cater more for formative assessment, students’ needs are regarded as the most important aspect of learning. Students become reflective on confidence, language, interactions, and so on. The curriculum that places students’ and teachers’ needs at the centre of the teaching and learning process is the pragmatic curriculum. The pragmatic curriculum is dominated by formative assessment.

2.7.2 Shared-experience from continuous assessment
Ysseldyke (1995) argues that continuous assessment and society are one. Students that we teach and assess come with their own understanding of the knowledge that society infuses within them through families, churches, the media, and so on. Furthermore, these questions are common to society: Is it fair to judge students on the basis of assessment? What is the role of tests in society and for the person? Assessment plays a critical role in society because the progress of students and society are measured by continuous assessment, Education, industries, and government departments are centred on assessment. Continuous assessment and shared-experience are interconnected because they both consider the needs of the society and are used as tools to address the societal problems to improve communities. Thompson (1998) states that society benefits greatly when students achieve from continuous assessment. Continuous assessment is mostly employed in a competence or horizontal curriculum in which students are assessed according to the interests of society.
2.7.3 Specialised-experience from summative assessment

Popham (1999), in his book titled, “Classroom Assessment: What Teachers Need to Know,” states that summative assessment is based on testing students. This includes end-of chapter tests, mid-year exams, and final examinations. Popham (1999) further notes that with summative assessment, students are not placed at the centre of the assessment; rather, teachers follow the prescribed curriculum on how much students are meant to know. Summative assessment is aligned with specialised-experience, because specialised-experience places the needs of the discipline at the centre of teaching and learning. This tallies with summative assessment which is aimed at grading the students, based on the results obtained from tests or examinations. A curriculum that employs summative assessment is performance curriculum, in which students are expected to perform.

A thin line separates these assessment types, starting from the fact that the majority of scholars view formative assessment as almost the same as summative assessment and continuous assessment: the combination of formative and summative assessment (Thompson, 1998). This lack of clarity provides us with a conclusion that all methods of assessment benefit the student and also the teacher in terms of expectations as the curriculum implementers. However, because South Africa is currently employing a performance curriculum, the method of assessment that most dominates classrooms is summative assessment; learners are currently judged according to their performance in examinations or tests.

2.8 Accessibility: Community, Financial and Physical Support

According to van den Akker (2009), accessibility entails three propositions of the curricular spider-web, namely:

1. Community: in which the consideration is on the curriculum addressing the needs of the community or society. A curriculum that seeks to address the needs and values of society is underpinned by outcomes (Khoza, 2016b).
2. Financial support: in which the consideration is on affordability of education by students.
3. Physical support: in which the consideration is on the accessibility of universities that have sufficient capacity to enrol students.
The first proposition of accessibility is community. According to MacQueen, McLellan, Metzger, Kegeles, Strauss, Scotti, and Trotter (2001, p. 12), community is, “a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in a geographical locations or settings”. Cole and Foster (2007) describe the community of Moodle as the people who use Moodle and have access to Moodle. This community of Moodle may be found on the Moodle website. They are there to assist users. The Moodle community are the global community, meaning every Moodle user has access to the Moodle community regardless of the country or the continent. This Moodle community assists new users to add new modules, features, and to gain new ideas for professional and personal growth of the teachers and other users. This community makes Moodle different from other course management systems, because Moodle uses more than 70 languages. This accommodates almost all users in their different languages. These languages are important to users because they understand Moodle better in their own language and will feel free to contribute various ideas to improve the Moodle community (Dougiamas & Taylor, 2003). This promotes equality and the importance of other languages within the community.

The second proposition for accessibility is financial support. According to Teferra and Altbachl (2004), financial support is a major problem in universities and while other continents are experiencing this problem, African universities are in severe crisis. This financial problem is generated from the economic crisis facing Africa since many of its countries are poor and some are still developing; which makes it difficult for government to support students. The inability of students to afford university fees and the mismanagement and misallocation of funds also enlarges the financial crisis. Teferra and Altbachl (2004) further indicate that financial problems in African universities go back a long way, for instance shortage of books, under-resourced laboratories, and sometimes a delay of salary payment for the staff. However, the South African government has put aside R57 billion for free higher education for first-year students from households earning less than R350 000 combined a year. In the 2018 budget speech, the Minister of Finance announced that the National Student Financial Aid Scheme (NSFAS) is going to increase from R10.1 billion to 35.3 billion. This suggests that financial support is provided by the government to support indigent students; and that education is a priority; however, these funds are still insufficient to cover the whole nation’s tertiary education.
The third and the last proposition for accessibility is physical access. According to Teferra and Altbachl (2004), physical access to higher education in African universities started during the times of colonialism and Apartheid in South Africa in which the majority of Black people were denied the opportunity to enrol in universities. When South Africa gained independence, after 1994, students of different races started enrolling in universities and South Africa became the third enrolling country after Egypt and Nigeria with more than half a million students attending 21 universities and 15 Further Education and Training Colleges (FET). Of these students, 55% are enrolled at universities (Subotzky, 2003). This suggests that more improvements have been made in terms of people gaining access to higher education, not only in South Africa, but across Africa.
CHAPTER TWO: SECTION B

2.9 WHAT IS A THEORETICAL FRAMEWORK?

Swanson and Chermack (2013, p. 14), in their book titled, “Theory building in applied disciplines”, define theoretical framework as the “building of ideas that have translated into measurement criteria, examined in detail and tested using an established, rigorous methods”. Theory is utilised to explain, understand, and predict phenomena, to challenge existing human knowledge with the challenge based on structured support. Stokes (2007, p. 64) defines theories as “tools that help us to think”. Swanson et al. (2013) identify the following important roles for theoretical framework in a research study: First, theoretical frameworks allow the readers to explicitly understand the statements of problems and be able to evaluate them critically. Second, the researcher has the ability to connect to existing human knowledge which assists the researcher to support the hypothesis and research methods. Third, there must be understanding and articulating assumptions around the theory in relation to research questions of why and how. Finally, theoretical frameworks help the researcher to understand key variables around the phenomenon which need to be examined. For this study, the Technological Pedagogical Content Knowledge (TPACK) theory is relevant. The following discussion is based on TPACK, however, before discussing TPACK, this study will demonstrate the origin of TPACK.

![Figure 2.2: Novelty of TPACK theory (Shulman, 1986)](image-url)
Figure 2.2 is derived from the work of Shulman (1986), who demonstrated that content knowledge and pedagogical knowledge are interconnected. This comes after Shulman observed that in most cases subject knowledge and pedagogical knowledge are treated as independent and exclusive domains. Shulman (1986, p. 9) states that it is important to consider the most convenient form of representation of ideas in a subject, such as powerful analogies, illustrations, examples, explanations, and demonstrations, because this will determine whether the subject is comprehensible to others. This indicates that content and pedagogy are required for teachers, and they work collaboratively. As Shulman (1986) states, different content requires different methods or approaches to teaching. Howey and Grossman (1989) emphasise that content and pedagogy are not detached: the teacher links his or her understanding of the content with the understanding of the students. Such a link is identified as pedagogy since a teacher should employ a particular way of delivering the content to be understood by students during the instructional time or teaching and learning time (Tamir, 1987, Pesno, 2002). The following is a personal graphic interpretation of Shulman’s theory of Pedagogical Content Knowledge.

![Diagram of Pedagogical Content Knowledge](image)

Figure 2.3: Graphic interpretation of Pedagogical Content Knowledge
The above graphic interpretation (Figure: 4.3) indicates that teachers must have pedagogical understanding; meaning that teachers must have teaching methods that are required in a particular specialization. These teaching methods must encompass proper questioning when assessing, which entails considering cognitive levels as per Bloom’s Taxonomy. Teachers must be able to evaluate students’ strengths and weaknesses, assign group work when necessary, and understand their role in relation to the curriculum. For instance, performance curriculum (e.g. CAPS), is teacher-centred, whilst the competence curriculum (e.g. NCS) is student-centred. Moreover, content comes in where a teacher is expected to understand the concepts of specialization. This study regards a teacher as someone who has specific content and is able to pass that content on using unique skills for understanding. Shulman (1986) believed that content and pedagogy make a teacher complete, until Koehler and Mishra (2008) expanded upon his theory to develop Technological Pedagogical Content Knowledge (TPACK).

2.10 What is Technological Pedagogical Content Knowledge (TPACK)?

Technological Pedagogical Content Knowledge (TPACK) is a theoretical framework mostly used in the education field to understand teachers’ involvement and understanding of technology. TPACK originates from the work of Shulman (1986, 1987) who utilises the concepts of Pedagogical Content Knowledge (PCK). Koehler and Mishra (2008) amended the theory of PCK to TPACK. Thompson and Mishra (2007) noted that the majority of in-service and pre-service teachers experience difficulties when they have to pronounce the abbreviation TPCK. They realised that education contains jargon words. Therefore the need to minimise jargon arose. Hence, during the 9th Annual National Technology Leadership Summit, attendees were asked to come up with a new name that would be user-friendly and easily remembered by people. After deliberation, TPACK was proposed and emerged (pronounced ‘tee-pack’) (Thompson & Mishra, 2007, p. 64). The TPACK concept is now viewed as one that is able to capture technological integration with emphasis on three types of knowledge: technological, pedagogical, and content. TPACK further reflects that these three types of knowledge do not work in isolation; rather, they are integrated and form a “Total PACKage”. The following diagram shows integrated components of TPACK.
This theoretical framework consists of seven components structured as follows: first, technological knowledge (TK). This component refers to the awareness of various kinds of technology such as digital technology, software and hardware programmes. Second, pedagogical knowledge (PK), refers to the methods of teaching utilised by the teacher in the classroom, which includes assessment management, lesson preparation, and student involvement. Third, content knowledge (CK), refers to the teacher’s actual understanding of the subject, knowledge of the subject matter taught to students. Fourth, pedagogical content knowledge (PCK), refers to teaching methods, together with teachers’ content knowledge for better teaching practice in the classroom. Fifth, technological content knowledge (TCK), refers to teachers’ understanding of technology and how technology can influence the content of the subject matter. Sixth, technological pedagogical knowledge (TPK) refers to teachers’ understanding of how technology may be used in teaching; and teachers’ awareness that technology may change the way in which teachers teach. Last, technological pedagogical content knowledge (TPACK) refers to knowledge required by teachers to integrate technology into their teaching of any subject. Teachers have to have a clear understanding of these three types of knowledge: content knowledge, pedagogical knowledge, and technological knowledge. When teaching content, teachers need to use correct pedagogical methods and suitable technologies. These components will be discussed in detail in the following paragraphs. The discussion will incorporate the interconnectedness between these
forms of knowledge, three levels of experience, and their relevant curriculum, as indicated in Chapter Three. The following diagram indicates this relationship.

(Figure 2.5: Interconnection between theoretical frameworks (TPACK) types of experience and types of curriculum

Harris, Mishra, and Koehler (2009) note that all these knowledge types in the name of TPACK do not operate in isolation; such knowledge is influenced by a number of factors which include school culture, organisational structure of the school, and socio-economic factors. This suggests that, for TPACK to function or fully be embraced by teachers, complex issues first need to be considered which are interconnected to these categories of knowledge. Furthermore, understanding such teacher knowledge is insufficient: teachers must have a clear understanding of curriculum. Curriculum may be better understood by teachers when
teachers undergo three type of experience (self-experience, shared-experience and specialised-experience), these being the foundation of any curriculum, be it horizontal/competence, vertical/performance, or pragmatic. The following paragraphs unpack each knowledge type within TPACK, aligning them with the appropriate experience and curriculum.

Table 2.5: Alignment between Technological Knowledge, Experience, and Resources

![Diagram of TPACK]

(Generated from the literature)

Thompson and Mishra (2007, p. 64) define technological knowledge as “knowledge of how to use emerging technologies.” Technological knowledge is based on teachers’ understanding of technologies that must be utilised in the classroom, not just knowing technology, but being able to integrate it within the lesson. Technology is part of the resources that have proven to have a positive influence on students’ learning, therefore teachers need to utilise technology (Thompson & Mishra, 2007). These days, emerging technologies are categorised into two; and are defined as teaching and learning resources. Khoza (2016b) conducted a study that focused on finding out “who helps on-line facilitators to learn with students in a day?” Various online resources were used; such as blogs, chat, discussion forum, and Facebook. In this study, Khoza (2012b, p. 75) describes learning resources as anything that facilitates or initiates learning or “any person or thing that communicates learning”. Khoza (2012) further identifies hardware and software resources as “any machine or tool used in teaching and
learning but in terms of online teaching and learning they are used to access the Internet”, for example, the computer, mouse, keyboard, etc. Software resources are “any material that is produced for the hardware to display information or communicate learning”. Chai, Koh and Tsai (2010) indicate that more studies conclude that teachers with a high level of technological knowledge and skills regularly use technology in their classroom. A qualitative study conducted by Chi-Chung, Lai and Wong (2009) on the use of technology in geography classrooms, discovered that geography teachers have few or sometimes no technological resources. This limits students’ access to technology. In some schools students have to share basic resources such as books. This suggests that technology is inaccessible in some schools, which hampers technological usage by teachers. This is also influenced by socio-economic factors which are the major challenges in developing countries such as South Africa. Khoza (2015c) correlates these resources with the two levels of experience identified in the table above; noting that, when the curriculum is dominated by software and hardware resources, it addresses the needs of the society, (shared-experience) and the needs of the specialization (specialised-experience).

Table 2.6: Alignment between Pedagogical Knowledge, Experience, and Types of Curriculum

<table>
<thead>
<tr>
<th>PEDAGOGICAL KNOWLEDGE (PK)</th>
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<tbody>
<tr>
<td>TEACHER</td>
</tr>
<tr>
<td>EXPERIENCES</td>
</tr>
<tr>
<td>CURRICULUM</td>
</tr>
<tr>
<td>LECTURER-CENTRED</td>
</tr>
<tr>
<td>SPECIALISED-EXPERIENCE</td>
</tr>
<tr>
<td>PERFORMANCE</td>
</tr>
<tr>
<td>STUDENT-CENTRED</td>
</tr>
<tr>
<td>SELF-EXPERIENCE</td>
</tr>
<tr>
<td>COMPETENCE</td>
</tr>
</tbody>
</table>

(Generated from the literature)

Pedagogical knowledge is about teachers’ deep knowledge of teaching and learning practices which involves goals and strategies that suit the educational purpose (Koehler and Mishra, 2009). Pedagogical knowledge moves beyond teachers’ understanding of student learning, planning, and implementing, as it encompasses teachers’ knowledge of correct teaching
methods and techniques employed in the classroom. Teachers understand students’ needs and their differing capabilities. Teachers’ pedagogical knowledge assists in assessment. Pedagogical knowledge promotes teachers’ understanding of how students construct knowledge, all being different (Schmidt, Baran, Thompson, Mishra, Koehler & Shin, 2009).

In relation to pedagogical knowledge, two methods of teaching are most commonly the lecturer-centred and student-centred (as discussed in Chapter Three). A lecturer-centred approach is based on the teacher as the one who is in control of the class. Khoza (2016b) describes this as the method employed in the performance curriculum, the method used in the specialised-experience, in which the focus is on the needs of the specialization/discipline. Unlike the student-centred method which is employed in the competence curriculum, this method is used in shared-experience, in which the focus is on the needs of the community/society.

Table 2.7: Alignment between Content Knowledge, Experiences and Types of Curriculum

<table>
<thead>
<tr>
<th>CONTENT KNOWLEDGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHING TARGETS: AIMS, OUTCOMES AND OBJECTIVES</td>
</tr>
<tr>
<td>TEACHER</td>
</tr>
<tr>
<td>EXPERIENCES</td>
</tr>
<tr>
<td>CURRICULUM</td>
</tr>
</tbody>
</table>

(Generated from the literature)

Content knowledge (CK) is based on teachers’ knowledge of the subject taught. Content knowledge is driven by teaching targets, determined by the focus of the curriculum, for instance: aims promote self-experience, which is the foundation for a pragmatic curriculum in which the needs of the students and the teacher are at the centre; outcomes promote shared-experience which is the foundation of a horizontal curriculum in which the needs of the community are at the centre; and objectives promote specialised-experience in which the
needs of the specialization is at the centre of the curriculum (as extensively discussed in Chapter Three). According to Shulman (1986), content knowledge is important to teachers because it indicates that teachers have a clear understanding of their specialization or discipline. Shulman (1986) again states that content knowledge means deep knowledge of subject concepts, theories around the subject, the organisational framework, ideas, methods and practice to improve that knowledge of a particular specialization or discipline. Cox and Graham (2009) further state that content knowledge means that the teacher has knowledge of topic specifics in a particular subject, for instance: electron flow in science, timelines in social science studies, and graphs in mathematics. Cox and Graham (2009) argue that content knowledge is not related to pedagogical knowledge as they both serve different purposes in the classroom or in the curriculum as a whole. Shulman (1986) and Boody (2008) draw a clear distinction between a content expert and a curriculum knowledge teacher (as indicated in Chapter Three). A content expert boosts the confidence of the teacher’s role of emancipating society, while curriculum knowledge is the awareness of how topics are arranged. When curriculum is dominated by content experts, this results in curriculum knowledge addressing the needs of the society (shared-experience).

2.10.1 Pedagogical Content Knowledge (PCK)

Pedagogical content knowledge refers to the interrelationship between teachers’ pedagogical knowledge and content knowledge. At this point, both teachers’ pedagogical knowledge and content knowledge must complement each other to complete the purpose of the curriculum (Harris, Mishra & Koehler, 2009). Shulman (1986), refers to pedagogical content knowledge as teaching knowledge, meaning that teachers must have content and essential pedagogy of teaching, and assessing students based on the curriculum. Harris et al. (2009) state that pedagogical content knowledge provides teachers with awareness of prior knowledge of the students. This helps teachers to employ relevant teaching strategies which are in line with the specialization or discipline. This is one of the best methods for effective teaching, when the flexibility of ideas is explored to solve problems. Pedagogical content knowledge suggests that teachers must have the correct knowledge of teaching methods, and correct knowledge of the content with the relevant subject that will enable teachers to overcome challenges in the classroom. This will result in achieving the objectives of the curriculum, whether it be the
performance curriculum in which the focus is on the specialization/discipline, or the competence curriculum in which the focus is on the needs of the community or society.

2.10.2 Technological Content Knowledge (TCK)

Technological content knowledge refers to a teacher’s understanding or knowledge about technology and content, and how technology influences the lesson in the classroom. (Koehler and Mishra, 2009). Technology and content are interrelated; however, some people assume that content and technology are not related. Harris et al. (2009) argue that people assume that technology belongs to technologists, history belongs to historians and physics belongs to the physicists. However, these are integrated: the fact that we do need projectors, laptops, and so on to display historical content means that any subject does require technology for effective learning by students. Harris et al. (2009) further note that there are three ways in which technology interacts with the content: first, change in the new technology has changed specialization content. This means that the content of the subjects could be represented in many different real-life contexts through technologic gadgets: this is mostly used in scientific subjects. Second, technology affects cognition. New technology affects the mindsets of people. With globalisation taking place, the world is changing, and digital technology is being included in school subjects even in developing countries such as South Africa. Last, technology provides a new language. Technology has its own concepts or content that must be understood by teachers.

2.10.3 Technological Pedagogical Knowledge (TPK)

Technological pedagogical knowledge refers to teachers’ understanding and knowledge of the changes that are taking place when teaching and learning is influenced by technology. Harris et al. (2009) state that teachers must understand the various teaching and learning technological resources used to drive a particular pedagogy. Not only must they understand technological resources; they must further understand the context in which these resources function best. With technological pedagogical knowledge, teachers must ensure that students are learning using relevant software that is suitable for the content and pedagogy. For instance, teachers should expose their students to the use of Excel, which helps students to arrange or organise and analyse data. Harris et al. (2009) further notes that teachers must understand various software, such as knowing that there is software designed for
entertainment, communication, and socialization. Teacher’s pedagogical knowledge must be in line with relevant software which is aimed at addressing a particular curriculum or experience.

2.11 Utilization of TPACK in the Previous Studies

The first study conducted using TPACK as a framework was by Keating and Evans (2001). The study focused on conceptions of technology integration in the classroom. This study argues that we assume that the new generation of teachers is well equipped with knowledge on technology usage. Teachers are able to use word-processing software, email processors, to surf the web, and much more. Nevertheless, they doubt their skills and abilities to integrate technology into their classrooms. This study aimed at finding the ability of teachers when using technology for personal use as well as for professional use. The study concludes that, currently, teachers use technology for personal use. Teachers have little confidence when they have to use technology for teaching or for professional use. Teachers have confidence in the use of technology when they use it for self-experience and less confidence when they have to use technology for specialised-experience. Teachers are dominated by pedagogical knowledge (PK) when using technology, less by content knowledge (CK).

A critical analytical paper conducted by Harris, Mishra, and Koehler (2009) on teachers’ engagement with technology, indicates that, across the world, there is a strong need to infuse technology into our curricula. The current relevant theory to assist with this is the TPACK theory, because it focuses on education through technology, and the integration of technology, pedagogy, and the content. More significantly, this study further notes that the use of technology in the curriculum transforms the subject, the ways students understand, and even the way the teacher presents content. This study concludes that, to accomplish improved teachers’ understanding of TPACK, we need to understand that TPACK is an interdependent system which seeks researchers who are technological developers, content experts, and pedagogical practitioners. All these components of TPACK are equally important to a teacher who is expected to implement the curriculum.

A study conducted by Archambault and Barnett (2010) on the nature of technology pedagogical content knowledge (TPACK), aims to understand the connection between these components of TPACK. This study concludes that TPACK is unclear on the two components
of content and pedagogy. Teachers struggle to distinguish between these domains, the only clear domain being technological knowledge. Archambault and Barnett (2010) further argue that, when teaching a particular content, it is likely that teaching methods are considered as part of the content; therefore these two domains may not be regarded or treated as different domains from each other. Archambault and Barnett (2010) regard content knowledge and pedagogical knowledge as one domain, which means that they perceive technological knowledge as the only independent domain. This study also suggests that self-experience and specialised-experience are one domain, with no clear distinction between the two.

A qualitative study conducted by Yurdakul, Odabasi, Kilicer, Coklar, Birinci and Kurt (2012) on the “The development, validity, and reliability of TPACK-deep”, indicates that the rationale for its development was the lack of content knowledge in relation to technology, and the low level of understanding displayed by the majority of teachers. As a result, curriculum coverage is lacking. Numerous scholars have identified this challenge facing teachers, including Shuldman (2004), Lim (2007), and Koh and Chai (2014). This study concludes by acknowledging that TPACK is a framework important for all teachers to understand and be accommodated by all components; although the challenge is on educational technology, which is an element that most teachers struggle with. Within the components of TPACK, technology knowledge (shared-experience) is an area that needs attention when developing teachers.

A qualitative study conducted by Koh and Chai (2014) on teachers’ perceptions on technology pedagogical content knowledge (TPACK), indicates that, although studies are conducted on TPACK, reports are insufficient on teachers’ development on TPACK. As a result this study engages teachers with lesson discussion, grouping teachers according to age, gender, and years of service. This has allowed teachers to connect with the content they teach and the technological resources they use. This study concludes that teachers have different levels of confidence when teaching ICT using TPACK as a frame. Moreover, age and gender have a great influence on teachers’ confidence, with female teachers less confident than male teachers to use technological resources available to them. However, most teachers are able to demonstrate a high level of understanding on content, regardless of their age, gender, or years of service. Teachers are able to understand and present content which is part of TPACK, but at the same time, teachers struggle to utilise the technological resources available to them.
Similarly, a qualitative study conducted by Chai, Koh, and Tsai (2010) on pre-service teachers’ development using TPACK as a framework, indicates that technology integration is important in teacher development. The study examined pre-service teachers’ technological knowledge, pedagogical knowledge, and content knowledge. Within these three domains, this study concludes that pedagogical knowledge had a great impact on teacher development. This is because some regard technology as part of pedagogical practice. Content knowledge was found to be stable, meaning teachers do not indicate any signs of development in their understanding of content. With regard to technological knowledge, the study indicates that teachers who have associated with technology, had an elevated level of pedagogical knowledge compared with those who have not. Technological knowledge therefore enhances pedagogical knowledge.

Hong and Stonier (2015) conducted a qualitative study that focused on the use of geographical information systems (GIS) (for the in-service teacher training framed by TPACK). The study focuses on teachers’ pedagogical knowledge, content knowledge, and technological knowledge in relation to GIS. This study was conducted owing to the previous studies that indicated that teachers struggle to teach GIS effectively when lacking pedagogical knowledge and technological skills which are at the centre of GIS. This study finds that most teachers who are experienced are not interested in the pedagogical knowledge and content knowledge. They attended workshops because they wanted to learn technological knowledge in order to be able to teach GIS, this being a huge barrier in curriculum coverage. On the other hand, less experienced teachers are interested in all three domains of TPACK, because they want to understand the content of social science studies, and the pedagogy on how to use technological resources to teach GIS in their classrooms. The findings of this study first suggest that experienced teachers are not interested in self-experience (pedagogical knowledge), and specialised-experience (content knowledge); they are only interested in shared-experience (technological knowledge). Second, the findings suggest that less experienced teachers are interested in understanding the intersection of TPACK in relation to GIS, and they are willing to learn self-experience, specialised-experience, and shared-experience.
Doering, Koseoglu, Scharber, Henrickson and Lanegran (2014) conducted a qualitative study which focuses on technology in geography education using TPACK as a framework. The study aims to address the needs of professional development in the use of technology. This study discovered that the major challenge facing geography teachers is the lack of technological knowledge, which has been brought about by many factors. These include: lack of positive engagement; unavailability of technological resources; scant professional development, amongst other factors. The study indicates that teachers have displayed a lack of pedagogical and content knowledge, however lack of technological knowledge was the most recognisable barrier to teaching GIS. Doering et al. (2014) argues that an effective technological integration in the classroom starts with strong pedagogical and content knowledge. The findings of this study suggest that, although teachers lack self-experience and specialised-experience, they lack shared-experience even more. This is because teachers in social science studies are not using technology more frequently, even when the content of GIS has forced them to integrate technology into their classes (Doering, Koseoglu, Scharber, Henrickson & Lanegran, 2014).

Doering, Veletsianos, Scharber and Miller (2009) conducted a study on using TPACK to design an online learning environment. The study seeks to understand social studies teachers’ awareness of technological, pedagogical, and content knowledge. The study began by developing the teachers on the three domains of TPACK using the online environment. Second, the study used the online environment available in their actual classrooms. Teachers were taken through these three domains and shown how these domains intersect. The findings of this study indicate that, when teachers are engaged in TPACK for professional development, they are able to explore and understand it better. Teachers in this study were able to actively participate in the three domains of TPACK. While they were engaging with their activities, teachers were more interested in the technological domain. Therefore in this study, teachers are able to explore shared-experience (technological knowledge) self-experience (pedagogical knowledge) and specialised-experience (content knowledge). However, teachers were more interested in shared-experience.

A qualitative study was conducted by Niess (2011) which focuses on the investigation of technological, pedagogical, and content knowledge (TPACK) in teaching, aims at finding out when, where, and how to use the relevant domain when teaching. The study indicates that
teachers must display knowledge in all domains and be able to understand the curriculum that must be taught to students. This study may be summarised by the following diagram which displays a teacher as the central figure in the interaction between the three domains and the curriculum.

![Diagram of interactions between three domains and the curriculum]

Figure 2.6: Interaction between three domains and the curriculum

Although the study focused more on developing teachers on the use of TPACK, teachers needed more time to be developed on the technological knowledge than the pedagogical and content knowledge. Teachers lack shared-experience or need more time to be developed on shared-experience than on self-experience and specialised-experience.

Peña-López (2016) undertook a study that focused on the opportunities and challenges of using ICT in the classroom, using the TPACK theory, together with the substitute, augmentation, modification, and redefinition (SAMR) model as the framework. The findings of this study indicated that tutors exhibited a good understanding of TPACK knowledge; while teachers exhibited poor understanding of ICT; although they have better understanding of content knowledge. The fundamental challenges found there included the lack of proper infrastructure for ICT implementation, and the lack of pedagogical knowledge for teachers to implement the curriculum effectively. Teachers lack shared-experience and self-experience; while tutors exhibit an understanding of all three levels of experiences (shared-experience, self-experience and specialised-experience).
Graham, Borup and Smith (2012) also conducted a study on understanding teacher candidates’ use of technology in integrating decisions, using TPACK as a framework. First, teachers were given pre- and post-assessment on how and why they would incorporate technology into their teaching. Second, teachers were provided with the TPACK as a guide to map their responses. The findings of this study indicate that the rationale based on content knowledge and pedagogical knowledge was more informative, significant, and interesting. The responses of teachers indicated that they were interested in engaging on these two domains; while on the technological domain, teachers were providing a rationale that was less informative and lacked interest, which suggests that teachers are not confident and are less likely to integrate technology into their teaching. Therefore, experiences on this study indicate that teachers are interested in the self-experience and specialised-experience, and have less interest in shared-experience.

Table 2.8: Summary of the Above Studies that use TPACK as a Framework; Presenting the Authors’ Dominating or Discussed Component; and the Missing Components (Generated from the literature)

<table>
<thead>
<tr>
<th>Author(s) of an article</th>
<th>Dominating component(s)</th>
<th>Gap(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keating, &amp; Evans (2001)</td>
<td>Technological &amp; pedagogical knowledge</td>
<td>Content knowledge</td>
</tr>
<tr>
<td>Harms, Mishra, &amp; Koehler (2009)</td>
<td>Technological, pedagogical &amp; content knowledge</td>
<td>None</td>
</tr>
<tr>
<td>Archambault &amp; Bamett (2010)</td>
<td>Technological knowledge</td>
<td>Content &amp; pedagogical knowledge</td>
</tr>
<tr>
<td>Yurdakul, et al. (2012)</td>
<td>Pedagogical &amp; content knowledge</td>
<td>Technological knowledge</td>
</tr>
<tr>
<td>Koh &amp; Chai (2014)</td>
<td>Pedagogical &amp; content knowledge</td>
<td>Technological knowledge</td>
</tr>
<tr>
<td>Hong &amp; Stonier (2015)</td>
<td>Pedagogical &amp; content knowledge</td>
<td>Technological knowledge</td>
</tr>
</tbody>
</table>
The above studies use TPACK as a framework to discuss teachers’ engagement with technology, pedagogy, and content in differing contexts. Most of the above-mentioned studies have embraced pedagogical knowledge and content knowledge and indicated that teachers have a better understanding of these two domains. Whilst these two domains seem to be familiar to teachers, other teachers struggled to impart content or pedagogy in the curriculum they taught. What is also apparent about these studies is that technological knowledge has been a missing component in teaching geography. Findings indicate that teachers lack technological knowledge, technological skills and the will to use technology. Ramma, Bholoa, Watts and Nadal (2018) state that, in most cases, teachers use technology as a teaching tool; for instance, teachers use PowerPoint software to present information to students. However, this is a one-sided process of teaching and learning, instead of using technology as a pedagogical tool in their classrooms which includes students’ participation. These studies further suggest that teachers must possess self-experience, shared-experience and specialised-experience. The following Figure 4.4 demonstrates the intersection that is expected to take place when we refer to teaching and learning in relation to lecturers and their use of Moodle in teaching Geography, in which all components of TPACK and levels of experience are infused to balance the curriculum.
The above diagram (Figure 4.4) indicates the intersection between TPACK components and the three types of experience. The diagram briefly indicates what should be happening in our teachers’ understanding of TPACK and experiences. The alignment between TPACK and experience are such that technological knowledge that teachers or lecturers must possess is underpinned by shared-experience. This means that technological skills, technological awareness and technological will of teachers are addressing the needs of society. The technological skills of teachers are not detached from pedagogical knowledge, which is underpinned by self-experience; meaning the “inner you as a teacher” in relation to the subject matter. The “inner you” must be modified and framed by content knowledge which frames the ways in which teachers intersect their pedagogical knowledge. Content knowledge is underpinned by specialised-experience, meaning teachers are implementing curriculum in the best interests of the specialization or discipline, where the focus is on the specialization language, concepts, theories, and other elements that are intending to promote a particular discipline. TPACK components and experiences are vital to teachers’ knowledge of curriculum and teacher practices.
2.12 Strengths of TPACK Framework

According to Graham, Borup and Smith (2012), the TPACK framework provides teachers and researchers with an analytical lens which helps them understand the teachers’ decisions on their teaching and learning. It also provides teachers with clarity on how and why teachers should embrace technology in their teaching, not as a tool to transmit information to students, but rather as a pedagogic method, in which students are engaged in the process of their own learning. Harris, Mishra, and Koehler (2009) note that, when teachers have a clear understanding of TPACK, they are able to integrate technology into the planning process. Teachers are enabled to determine the correct curriculum for students, select appropriate learning activities, and then select appropriate technological tools that will support the selected learning activities. This approach embraces all components of TPACK (Harris Mishra & Koehler, 2009). Graham et al. (2012) posit that teachers become more aware of suitable strategies during their planning process when they understand TPACK.

Further to the above, a qualitative study conducted by Koehler, Mishra, and Cain (2013) on TPACK indicates that the TPACK theory is currently a solution to teachers and researchers when dealing with teaching and learning issues, technology integration in particular. TPACK seeks to describe the kind of knowledge teachers need to have, and how teachers must relate to these knowledge levels described by TPACK. When teachers are well informed about the content they should teach, and the pedagogy they should apply, as well as the technology they should use, and are able to intersect these components to fit the context they teach, they are in a better position to implement the curriculum correctly. This does not only apply to teachers in the classroom environment, but also to pre-service teachers and training institutions. TPACK is an instrument that has a huge potential for the development of teachers, and is a theory that is relevant to the world of technology (Koehler, Mishra & Cain, 2013). When looking at the gains of TPACK since it was developed, more than 100 reports have been written discussing the TPACK components, and more than 300 conferences have been published on TPACK (Brantley-Dias & Ertmer, 2013). TPACK is therefore a theory relevant to the 21st century, in which globalisation has been raised to another level, influencing the curriculum irrespective of political, economic, or social issues. As Peña-López (2016) indicates, current technology and pedagogical practices are linked, and teachers are required
to include technology without excuses, in their teaching and learning processes, to accommodate digital generation citizens.

Moreover, Ahrens and Zaščerinska (2014) identify these strengths around technology, pedagogy, and content integration. The influence of TPACK in curriculum implementation is great when it is well explained and clear to teachers who are expected to implement it. This promotes the use of technology, and strengthens the teacher’s ability to explore numerous methods of teaching, which results in a high level of competence. Furthermore, teachers can observe and assess their own technological skills and improve on their old practices. Peña-López (2016) explains that technological knowledge cannot replace teacher’s pedagogical knowledge and content knowledge, which is why the integration aspect is important for proper implementation. Some teachers learn to use technology in their personal capacity, yet still need to learn technology that will relate to the subject content (Peña-López, 2016).

2.13 Limitations of TPACK Framework

A study that utilises mixed-methods such as surveys and observations to explore the need for integrating technology into teaching geography, was conducted by Doering, Koseoglu, Scharber, Henrickson and Lanegran (2014) who noted that, amongst the limitations of TPACK, are that the use of technology depends on individual ability. Teachers must have positive engagement with technology for them to develop technological knowledge –teachers must be motivated to use technology for them to gain technological knowledge. Moreover, technological knowledge is based on environmental factors, the availability of support material or teaching and learning resources suitable to support technological knowledge for both teachers and students. These identified limitations of TPACK might demotivate a teacher, and offer a less supportive environment for teacher development. In geography, not only is the technological knowledge facing this barrier, but so is the content knowledge, since GIS, which is part of the content, requires hardware, software, ideological-ware, and a high-speed Internet. Teachers are expected to master GIS concepts in these three domains: technological, content, and pedagogical.

Furthermore, Abbitt (2011) outlines that the TPACK framework has focused more on pre-service teachers and less on serving teachers; which becomes difficult to measure when
examining these three domains, with no clear understanding on how we measure teachers’ understanding and the actual practice. This results in insufficient reliable and valid methods that may be used to measure teachers’ knowledge. Abbitt (2011) further argues that, since TPACK has focused more on preserving teachers, this has led to another approach of defining and contextualising TPACK. For teachers to implement the curriculum, TPACK is the relevant current framework. Teachers are encouraged to understand these domains; technology, pedagogy, and content (Mishra and Koehler, 2006). When teachers lack understanding on one of these three domains, the curriculum is not implemented accordingly. From the studies discussed above, the technological domain is lacking in most teachers, therefore teachers are not implementing the curriculum appropriately.

Furthermore, a qualitative study conducted by Cherner and Smith (2017) focused on reconceptualising TPACK, highlighting the following limitations around the TPACK framework. By nature, TPACK focuses on teacher knowledge, not on students’ knowledge, meaning that TPACK is teacher-centred not student-centred. This is because TPACK has focused on content instead of context; the context places students at the core of teaching and learning, and knowledge must first be based on students’ capacity and capability before considering the teacher. Cherner and Smith (2017) argue that we need to focus on students to acquire technological skills relevant to the 21st century. This means that teachers should be able to provide instructions regarding the content and the use of technology, but students must be the area of focus, learning by using technology. By adjusting TPACK to a student-centred teaching, with a clear understanding of the context, students are likely to reach their learning goals (Cherner & Smith, 2017).

Table 2.9: Contextualising TPACK Components to Meet the Needs of Moodle

<table>
<thead>
<tr>
<th>Propositions</th>
<th>Moodle Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>Computer, screen, mouse, keyboard, laptops</td>
</tr>
<tr>
<td>Software</td>
<td>Chrome, Firefox, &amp; Internet Explorer</td>
</tr>
<tr>
<td>Ideological ware</td>
<td>Socio-constructive theory</td>
</tr>
</tbody>
</table>

(Generated from literature)
Moodle software cannot operate without hardware. Hardware resources may be described as all the physical components of the computer, which include desktop computers, laptops, and overhead projectors. These must be connected to the Internet to operate Moodle and use the prescribed textbooks. Hardware and software resources are important in the process of teaching and learning. The functioning of these resources is interconnected, meaning that none of these resources can operate without the presence of the other, particularly when teaching using Moodle as a resource. Nowadays, hardware resources have become an instrumental tool for teaching and learning, therefore it is important for teachers to be able to use hardware resources. For example, at a university where this study was conducted, lecturers have access to hardware resources and are using them to teach, assess, and also communicate with students. Khoza (2015c) states that, when the curriculum is dominated by hardware resources, that curriculum addresses the needs of the society and the needs of the specialization. This suggests that the focus of the university is on shared-experience and specialised-experience.

Geography lecturers are expected to use Moodle software. This Moodle software is engaged when a lecturer is able to create an account, which the user is able to log in to (lecturer or student). The user is then able to edit the profile and upload the course or module content; this includes course settings. Moodle software allows lecturers to set the appearance, meaning the specific language in which the course will be displayed. Lecturers must be able to use files, meaning understanding the resources they wish to use; and also understanding the size of the file. This helps them when they have to assess students; for instance, when students have to upload assignments. At the university at which this study is conducted, lecturers were trained on Moodle using Training Guide 209 which provides all the identified expectations in detail and even more from lectures on Moodle. Geography lecturers at this university are aware of Moodle software; however, this does not mean that lecturers are technologically skilled, knowledgeable, or well-equipped on Moodle. The university aims to address shared-experience and specialised-experience. Khoza (2015c) argues that, when the curriculum is dominated by software resources, the curriculum addresses the needs of the society and the needs of the discipline.
Moving further to ideological-ware resources, this refers to the underlying theory which lecturers or teachers use to inform their teaching of Moodle. According to the Moodle training guide used to train university lecturers, no theory underpins their teaching of Moodle. In relation to the geography module guide, no theory is identified that must be used by the geography lecturers in teaching geography using Moodle. This is contrary to Amory (2012), who regards ideological-ware as an important aspect of teaching and learning when he strongly argues that learning is not about technology, but rather it is about ideology. This means that the curriculum must address the needs of the teacher and the student, and hence accommodate self-experience in which the emphasis is on the uniqueness of both these individuals. As Khoza (2015c) explains, when the curriculum is centred on ideological-ware resources to achieve its aim, it mostly addresses self-experience. However, according to Brandl (2005), on the document that was used to train the lecturers at the University of Washington, Moodle is grounded in the socio-constructive theory of learning. The socio-constructive theory relates to teaching and learning structured to accommodate both the lecturer and the students, in which diverse methods of social interaction are used. For instance, students work as a group, in chat rooms, having discussions in Wiki forums, inter alia. Brandl (2005) further notes that forums are set in various ways, for instance, forums may be set to only allow the lecturer or student to post content; or it may be set to allow the lecturer to restrict discussion. Moodle in Washington University is therefore used for self-experience.

2.14 Contextualising Pedagogical Knowledge

At the university where this study was conducted, lecturers are expected to use module outline or course packs; this includes geography as a module. The geography course pack indicates the pedagogical concepts’ aim: the focus is on moving away from paper-based learning to electronic learning; objectives: lecturers are to upload, and monitor students notes via Moodle or online; learning outcomes: students are to benefit by numerous technological skills that are relevant in the workplace after they graduate; assessment: tests, exams, assignments, practical work, presentations, and quizzes are the methods of assessing students as identified by the Training Guide 2.9 and Geography Course Outline, using Moodle. These two documents (Geography Course Outline and Training Guide for lecturers) are in alignment with regard to pedagogy, which then suggests that the implementation of the
curriculum by the lecturers should be in line with their training guide, and also with their course outline which serves as the module policy.

### 2.15 Contextualising Content Knowledge

Geography content is divided into four chapters regarded as the theory component: climatology, geomorphology, settlement, and economic geography. The practical component of geography contains topics such as geographical skills and techniques, calculations, interpretations, and GIS. This suggests that this is a voluminous content that has to be uploaded by the lecturers for students to access via Moodle. However, the Training Guide 2.9 stipulates that the content that has to be uploaded must be in a form of a file, folder, PowerPoint, or such-like. Therefore the content structuring of chapters and topics might differ from the course outline and prescribed geography books for higher education. It must be noted, however, that this lack of alignment between the training guide and module outline suggests that there are gaps in specialised-experience. Moodle should be able to acknowledge these geography chapters and topics as per the course outline.

### 2.16 Learning Theories in the Digital Age

#### 2.16.1 Connectivism

Siemens (2006) describes connectivism as the conceptual framework that views the learning process as the phenomenon that is shaped by technology and socialization. Siemens (2005) believes that the actual learning takes place when knowledge is activated by learner and connected to active participation of learning in the learning community. This learning communing is described as nodes, meaning sources of information such as libraries, Web sites, organisation, journals, and so on (Siemens, 2006). The principles of connectivism by Siemens (2005) are that:

- Learning and knowledge rest in diversity of opinion
- Learning is a process of connecting specialised nodes or information sources
- Learning may reside in non-human appliances
- Capacity to know is more critical than what is currently known
• Nurturing and maintaining connections is needed to facilitate continual learning
• Ability to see connections between fields, ideas, and concepts is a core skill
• Accurate, up-to-date knowledge (currency) is the aim of all connectivist learning activities
• Decision-making is a learning process in itself.

2.16.2 Addie Model

According to Molenda (2003), the term Addie is the colloquial term used to describe a systematic approach to instructional development, virtually synonymous with instructional systems development (ISD). Molenda (2003) further notes that, from this term, scholars agree that ADDIE is an acronym referring to the major processes that comprise the generic ISD process: analysis, design, development, implementation, and evaluation. Beyond that, there is common understanding that, when used in ISD models, these processes are considered sequential and iterative, as indicated below:

The first step in the ADDIE model is analysis. In the analysis phase the instructional problem is identified along with learner characteristics – what you as a teacher want the learners to learn, and how you will define instructional goals and learning objectives. The second step is design, in which an outline of instructional strategies is created and/or learning activities and assessment are determined. The third step is development. In the development phase, a teacher is expected to build learning content, learning assignments, and assessment, at the same time identifying which technologies should be chosen to enhance learning experience. The fourth phase is implementation. The implementation phase includes the testing of prototypes in which training for the instructor happens followed by learners participating in the instruction. Last, there is the evaluation phase. This phase includes formative and summative evaluation. Formative evaluation is a measurement of learning outcomes during the instruction process, and summative evaluation the measurement of learning outcomes after instruction (Davis, 2013).

2.16.3 Gilly Salmon 5-step model for online learning

Stage One, is based on assessment and motivation. Stage Two involves online socialization in which individual participants establish their online identities and then find others with whom to interact. In Stage Three, an information exchange takes place. Participants engage in mutual exchange of information; and cooperation takes place in which each individual supports the other participants’ goals. Stage Four is the knowledge construction. Course-
related group discussions develop and the interaction becomes more collaborative. For Stage Five development, participants look for more benefits from the system to help them achieve personal goals and reflect on the learning processes (Salmon, 2013).

2.17 Chapter Conclusion

In conclusion, the curricular spider-web, as the conceptual framework generated from the work of van den Akker (2009), improved our understanding of the issues of the curriculum and the interaction between them and the levels of experiences. These concepts have moved beyond the narrative, inserting the curriculum into the South African context, drawing from vast changes in our curriculum. On each of the concepts this is what was concluded: 1) Teaching targets; for the curriculum to be implemented correctly regardless of the layer, it must place the interests of the teachers and students at the centre. Aims, outcomes, and objectives must be embedded into one curriculum. Khoza (2016b) concludes that a combination of self-experience, shared-experience, and specialised-experience produces a strong foundation for the reconstruction of the curriculum. With regard to content, the majority of studies maintain that content knowledge is more significant in curriculum. Performance curriculum would thus seem more important than other forms of curriculum, 2) Pedagogical approaches: no curriculum will ever be fully subject-centred, or totally learner-centred, even though the student-centred approach is regarded as the method that motivates students; and lecturer-centred is regarded as the method used by the teachers to meet the needs of the curriculum, 3) Tasks: formal tasks are regarded as the most important tasks, particularly when using performance curriculum; and are important because they are used to grade the students. In the teaching and learning environment, the majority of studies indicate that students find themselves more appreciated by the community and society when learning. Students consider the values and morals of their community when learning, and are likely to understand shared-curriculum/shared-experience, 4) Assessment; currently in South Africa we use a performance curriculum, meaning the method of assessment that dominates in our classrooms is the summative assessment, 5) Accessibility: which include physical access and financial access to higher education.

Furthermore, this chapter has explored concepts of the theoretical framework including presenting the Technological Pedagogical Content Knowledge (TPACK) as the theory that
shaped this study. The origin of TPACK has been extensively discussed, along with the three components of TPACK, namely: technological knowledge, pedagogical knowledge, and content knowledge. Moreover, in this study the three components are not merely discussed; they are critically aligned with the three levels of experiences in turn aligned with the phenomenon of this study, namely: self-experience, shared-experience, and specialised-experience. In addition, experiences were aligned with three types of curriculum, namely, pragmatic curriculum, competence curriculum, and performance curriculum. Strengths and limitations of TAPCK were briefly discussed in this chapter. Last, it was significant to contextualise TPACK components in the context of the university where this study is conducted. Last, it was interesting to elucidate some concepts using attractive diagrams and tables.
CHAPTER THREE:
MOODLE AS AN OPEN-SOURCE LEARNING MANAGEMENT SYSTEM:
OPPORTUNITIES AND THREATS

3.1 Introduction

Internationally and nationally, there is a remarkable transition between post-primary and higher education, which is observed by the rising number of challenges for both students and educators. Ingerman and Yang (2010) identified the top ten issues that are regarded as strategically important to technology in higher education, namely, funding IT, administration, security, teaching and learning with technology, identity or access management, disaster recovery, government, organisation and leadership, learning management systems, and strategic planning and infrastructure. Part of the 21st century issues is that our universities have growing lecture-room sizes. Resources have become more limited, and there are increasing expectations from the “net-generation” (Mohan 2007, p. 211). Mansour and Mupinga (2007), and Carvalho, Areal and Silva (2011) concur with Mohanna (2007) in acknowledging that universities are facing growing numbers of students that limit their resources for teaching and learning. This increase is forcing university lecturers to adopt certain teaching methods. Wen and Lin’s (2007) study, which focuses on e-learning of geographical information in higher education, concludes that e-learning is the solution to this challenge. By utilising an open software course management system (CMS), such as Moodle, students are able to use mobile equipment to learn online. Apart from learning online, students are able to learn independently and understand that the process of learning is based on their individual capabilities. With a CMS such as Moodle, students’ learning is based on a teacher- or lecturer-centred approach, in which the teacher or lecturer is there to provide guidance to students.

This chapter focuses on literature review. A “literature review is when a researcher account for related research in the field of investigation, described literature both in support of and in opposition to his or her own approach, integrate not just descriptive studies, compare, and contrast different studies extracting the key ideas” (Bertram & Christiansen, 2014 p. 15). Cohen, Manion and Morrison (2011) state that literature review is important in research, It serves many purposes, such as to provide clarity on certain concepts, issues, terms contained in research, giving more meaning to the readers. The literature review acts as a springboard
into the researcher’s own study, by raising issues and indicating gaps in the field of study, providing sufficient justification for research to be undertaken. The literature review sets the context for research and establishes the key issues to be addressed. Last, the literature review is important in that it must be informative and give rise to all aspects of research undertaken. It must be sound in providing up-to-date information from a variety of sources such as books, newspapers, articles, conference papers, theses, and the Internet.

The following literature review indicates the concept of Moodle from a range of experiences, and demonstrates how these experiences change the way in which lecturers are teaching in higher education. The purpose of this chapter is to critically engage with literature that relates to Moodle as an effective learning management system through the experiences of geography lecturers. Apart from that, in this chapter, the literature reflects on the overview of the international, national and local researchers that contributed greatly to the understanding of learning management systems. This tends to answer the three research questions that are fully specified in Chapter One. This chapter of the literature review not only advances the study, but further contributes to finding the gaps from the previous research studies that are related to this similar research topic. The discussion in this chapter is steered by the use of the Modular Object-Oriented Dynamic Learning Environment (Moodle) as a teaching and learning tool that is utilised by the university lecturers to transfer knowledge to university students, engaging with the university curriculum. Experiences are divided into three segments, namely, self-experience (personal rationale), specialised-experience (professional rationale Khoza, 2016), and shared-experience (societal/social rationale Khoza, 2016). This study starts by unpacking the concept of experience which helps us understand experiences.

The word “reflection” is taken from the Latin verb ‘reflectere’ which means to turn backwards. The word was introduced to describe the experience of the return of light from a water surface, as a mirror. The same meaning obtains in the human context. In physical science, experience means the return of light, sound, and or heat, after striking a surface, while in psychology, experience means mental image or representation (Schon, 1987). Therefore, the general meaning of the word ‘experience,’ is different from how it is perceived in the teaching profession. Reflection is used metaphorically, since a mirror can only reflect a person’s physical appearance: it does not reflect the person’s mental workings. The word is used worldwide, for example in French “reflexion,” in German “Reflektion,” and in Swedish “reflektion” (Kansanen, 1995). Most definitions that are presented in the articles and books
about experience are drawn from the American philosopher, John Dewey (1933) who introduced the psychological concept of “experience,” John Dewey takes his definitions and understanding from the ideas of other educators such as Plato, Aristotle, Solomon, and Buddha (Houston, 1988). According to Dewey (1933), the concept of experience refers to teachers experiencing difficult or troubling events in their classrooms, trouble that cannot be resolved immediately. Munby and Russell (1990) refer to this as a “puzzle of practice”. In their article, which focuses on educating teachers to become reflective teachers, “puzzle of practice” means that a teacher takes a step back to analyse the situation at hand.

The term “experience” is seen as straightforward and very common in teacher education, however, teachers and lecturers must have a clear understanding of the concept, not only theoretically, but also applying it in the teaching context. The theoretical interpretation of the concept ‘experience’ mostly depends on its users, which are the teachers and lecturers. On the contrary, the concept of experience is still more complex than what is expected. For this literature, it is important to break down the confusion faced by teachers, while stating the roots of confusion. Zhu (2011), in the study of student teachers’ experiences on physical education, mentions observation, semi-structured interviews, and artefacts to generate data from 12 participants. This study indicates that experience involves a plethora of tasks, in which teachers constantly question what they do. They have to address questions such as: To what degree do they facilitate? When does the teaching experience help? How can they improve their teaching? Experience goes beyond application of teaching experiences; it includes careful observation, identifying the problem, strategies of finding solutions using diverse methods, and implementing new ideas. Zeichner (1994) notes that the term “experience” is taken for granted and as a result teachers are confused by it. Akbari (2007) argues that the term experience was influenced by many trends and philosophies, hence the term is open to various interpretations. Furthermore, Akbari (2007) argues that the explanation of the term experience lacks a critical dimension since the focus is on the rationale, and the rationale does not provide evidence that shows teachers’ improvement in their performances.

Similarly, a qualitative study conducted by Kansanen (1995) focusing on teacher experience, and another one by Kansanen (1995), noted that the concept of teacher experience is a highly contested space in the field of research and is very complex. People have different understandings of “experience” which has led to many expressions: “reflective thinking”,

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“reflective teaching”, “experience-in-action reflective”, “reflective practice”, “the teacher as decision-maker”, “the teacher as researcher”, “the teacher as problem-solver”, “enquiry-oriented teacher education” and “the teacher as professional.” These expressions of understanding indicate that the concept of experience is understood differently from person to person. Kansanen, (1995) further outlines that experience occurs in different ways. It may be seen in action, or it may be a cognitive process of self-empowerment. Kansanen, (1995) argues that these multiple expressions of experience indicate that the term experience does not have one distinct definition and understanding, Hatton and Smith (1995) concur with Kansanen (1995) by stating that the term experience is ill defined, and used loosely. The term embraces a number of concepts and strategies. Atkin and Murphy (1993) notes that most literatures has agreed that the concept of experience is lacking clarity, starting from the definition. The debate is how the terminology is described, and used, and the context in which it is used.

In addition, Carol (2002) identifies four challenges associated with the concept of experience. First, it is not clearly defined as to how experience is different from other types of thinking. When teachers think about experience, they do not understand what to do first. Second, it requires a person to have assessment skills that are not clearly defined. Third, with no exposure to the application of experience practically, it is not easy to talk about it. Teachers find themselves using concepts that hold the same meaning or are different, but with overlapping meanings. Last, with no understanding of the concept, it is difficult to conduct research on reflective teachers and their professional development.

Dewy, (1933, p. 9) describes experience as an “active persistence and careful consideration of any belief or supposed form of knowledge.” Dewey (1933) further elaborates that experience is a special method of problem-solving. He outlines that, in order to resolve an issue, active engagement, thinking carefully and ordering of ideas are important. For Dewey, true experience takes place when the individual is faced with a problem that she or he is expected to solve in a rational manner (Brubacher, Case & Reagan, 1994). Vivienne (2000) states that Dewey’s understanding of the concept of experience encompasses a chain of thoughts or steps of ideas, that lead to future action, which is the experience for action; aiming for future action. Dewey (1910) proposed a problem-solving model which included suggesting
solutions, posing questions, hypothesising, applying reasoning, and testing of solutions. These processes formulate reflective thinking.

Zeichner and Liston (1996, p. 12) state that: “If we stopped here, we would not have a very detailed understanding of experience.” These researchers define experience using Dewey’s understanding of experience. Zeichner et al. (1996) view experience as a process in which the teacher engages in questioning their goals and values that guide their work; the context in which they teach, examining their assumptions. Zeichner et al. (1996) further categorised teachers into two groups in a classroom environment. The first are those who are described as technicians, meaning teachers who focus on fixing the students’ behaviour based on their assumptions, not considering the students’ background. In line with that, Zeichner (1996, p. 6) identified five features of a reflective teacher. A reflective teacher must be able to examine, frame, and attempt to solve problems of the classroom. The teacher must be aware of questions, and assumptions, and the value they bring. The teacher must be attentive to the institutional and cultural contexts in which he or she teaches; being part of curriculum development, and involved in the school change effort; and take responsibility for own professional development.

Similarly, Valli (1997) draws her ideas of a reflective teacher from John Dewey’s definition. According to Valli (1997 p. 70), reflective teaching is a process in which a teacher “can look back on events, make judgments about them, and alter their teaching behaviours in light of craft, research, and ethical knowledge.” This definition encompasses three important components of experience, namely, self-experience, shared-experience, and specialised-experience. Other scholars unpack this definition of experience using these three components. For instance Schon (1983) uses the concepts of experience-in-action (shared-experience) and experience-on-action (specialised); van Manen (1977) uses critical experience (self-experience), practical experience (shared-experience), and technical experience (specialised-experience); and last, Khoza (2016b) uses the concepts of personal space (self-experience), social space (shared-experience), and professional space (specialised-experience). Khoza (2015c) uses the concept of curriculum visions to describe three levels of experiences. Khoza (2015c) stresses that experiences are important to teachers because teachers are the centre of all forms of curriculum, and control the curriculum concepts. Khoza (2015c) further notes
that the effect on teaching and learning begins when a teacher is able to identify these three levels of experiences, namely: self-experience; shared-experience; and specialised experience. This will allow teachers to identify their relevant subjects’ goals. Pinar (2004) discusses experience by introducing the concept of *currere* to enlarge our understanding of experiences.

As Harper (2012) points out, *currere* is a Latin verb that means “to run.” This word was also used by Pinar (2004) in his extensive writing on curriculum theory, in investigating the connection between academic knowledge, self-understanding, and social reconstruction. Pinar (2004) developed an understanding of curriculum from this background, which suggests the meaning as “running curriculum or curriculum in action.” Furthermore, Pinar wished to develop an understanding of the curriculum on the basis of teachers’ experiences, which entails the process of progression (imagine and prepare for the future), regression (reflect or remembering the past), analysis, and synthesis. Pinar (2004) describes this process as a complicated conversation. This study uses the “currere concept” to extensively explain “experiences” that automatically bring a high level of understanding of the “curriculum.” Moore (2013) correctly states that currere allows teachers and students to actively participate in the curriculum. Moore (2013) further acknowledges that curriculum is based on experiences that are important for the professional development of teachers. Chien, Davis, Slattery, Keeney-Kennicutt, and Hammer (2013) concur with Moore (2013) by stating that currere is an autobiographical process which develops a curriculum that is based on student/teacher self-knowledge and mutual conversation.

Stage 1: Regression: Moore (2013) describes this stage as the time when teachers think back and record the memories of the past in relation to educational experiences. Kanu (2006) states that past experiences become the data source of knowledge for a teacher at this level. Chien et al. (2013) further note that regression is about returning to the past and transforming it to the present situation. Stage 2: Progression – Pinar (2004, p.125-127) divides this stage into two, namely; stylistic and thematic experimentation. Stylistic experimentation allows the opportunity to “become other”, meaning that experience is based on imitating others for better possibilities in the future. Thematic experience demonstrates what is blocking us from achieving in the future.
At this stage the teacher thinks of himself or herself about the future and records ideas of what is likely to happen, judging by ideas and memories about teaching (Moore, 2013). Stage 3: analytical: at this stage the teacher looks and connects past memories or experiences with the future ideas, creating common themes. The analytical stage is based on “one’s distinction of past and future functions in order to create a subjective space of freedom in the present” (Chien et al, 2013, p. 205). Stage 4: synthetical – At this stage the teacher draws all memories and ideas together to generate new knowledge that has been created as the result of reflecting from: Where have you been? Where are you going? and other common themes created. Synthesis is based on “listening to one’s own inner voice in the historical and natural world”. The aim of synthesising is primarily to achieve “self-understanding, history, self-experience, and self-transformation (Pinar, 2004, p. 35).

**Currere** creates a space for teachers to critique their teaching in such a way that they might not have thought about. **Currere** allows possibilities of emancipates to the teachers, researchers, and others. **Currere** allows others to understand themselves and the contribution one makes to others. Educational and personal experiences are embedded in currere, in that it promotes better understanding for teachers and students to find common ground in the circle of teaching and learning (Pinar, 1978). A qualitative study conducted by Kanu (2006) debated on whether currere was a solution to the teachers’ knowledge or made them regarded as “amateur intellectuals” in society. The study concluded that teachers who follow a currere theory are likely to transform, because they have an opportunity to learn from their past and present experiences with regard to curriculum, and improve their thinking. “Experience is what one senses, one feels, one thinks: it is, in a word, one’s living through one’s life. So, curriculum reconceptualised is **currere**; it is not the course to be run or the artefacts employed in the running of the course; it is the running of the course” (Pinar & Grumet, 1976, p. 18). In the same sentiment, Bruner (1992) identifies two ways of knowing, namely, narrative knowing, and paradigmatic knowing. Narrative knowing is described as the knowing that occurs through reflecting on one’s personal experiences; while paradigmatic knowing is generated through scientific methods. The four stages of currere are used as the framework for experience on the curriculum. For the benefit of this study, it is important to start by defining curriculum before discussing these three levels of experiences. The study wishes to put experiences into the context of the curriculum of a South African university, in particular. Khoza (2016b) argues that, when teachers have a clear understanding of curriculum, they are
able to reflect on and improve their teaching. In this study these reflections are referred to as experiences.

3.2 What is Curriculum?

There are numerous definitions of the concept “curriculum”, however, for the purpose of this study, I have narrowed them down to two. The first one is the explanation by van den Akker (2009) who described curriculum as a “plan for learning” (intended stage). This means that van den Akker (2009) views curriculum as a framework that indicates and guides what teachers should do in class in order for learners to learn. The curriculum therefore recommends the teaching strategies for the teacher. Such teaching strategies will enable teachers to proficiently facilitate learning and achieve their goals. Second is the explanation by Pinar (2004) who defines curriculum as a “plan of learning” (implemented and attained). A curriculum therefore assembles the content that teachers should deliver to learners. At this level, the performance and routine of teachers in conveying the content to learners should have coherence with the curriculum. For teachers to achieve such, they should be able to reflect on their teaching experiences. In South Africa, currently, we embrace both the performance curriculum, which focuses on curriculum as a plan for learning (formal document). We also embrace the implemented/enacted curriculum which focuses on the plan of teaching (teachers’ experiences). On the other hand, Van den Akker (2009) identifies five layers of curriculum, which include: the international curriculum; the national curriculum; the school curriculum; the development of teaching and learning; and the attained curriculum.
3.3 Blended learning

Experiences are important to teachers because they are at the centre of all curriculum concepts. All forms of curricula are shaped by experiences. Any quality teaching and learning requires experiences to enhance critical thinking (Khoza (2016b). van Manen (1977), in his most powerful writings, focuses on the “linking ways of knowing with ways of being practical”. Experiences are divided into three levels: critical experience (in this study it is referred to as self-experience), technical experience (in this study it is referred to as specialised-experience), and practical experience (in this study it is referred to as shared-experience). Similarly, a qualitative study conducted by Khoza (2016b) on Moodle for personal, societal, or professional spaces (curriculum visions), identifies three important levels of experiences: personal, societal, and professional. According to this study, these levels enable teachers to understand the foundation of their teaching: Why they are teaching particular modules; and for the students: What do students learn in their modules? This study also acknowledged that, when teachers understand these three levels of experiences, they are able to understand their curriculum and their responsibilities towards the curriculum, informed by a strong foundation on these three types of experience. Also, a qualitative study conducted by Mpungose (2016) on the topic: “Can the rationale of using Moodle help when lecturers reflect?” identified three types of experience: personal, informal, and formal.
experiences. These three types of experience are similar to those identified by Khoza (2016). Equally, Khoza (2016) and Mpungose (2016) acknowledge that societal or informal experience informs horizontal/competence curriculum, while professional or formal experience informs vertical/performance curriculum. Khoza’s (2016) self/personal experience informs the pragmatic curriculum. The diagram above demonstrates the interconnection between these three levels of experience (shared-experience, self-experience, and specialised-experience). Zeichner and Liston (1987) posited that the reflective teacher is the one who has the ability to assess the work, and understand the purpose/rationale for the work. The following is an extensive discussion on each of the three levels of experience.

Self-experience focuses on a system of teaching that puts the individual teacher/lecturer or student at the centre of teaching and learning; it allows teachers or learners to construct their own individual understanding. At this level, teaching and learning also allows these individuals to discover themselves as unique from the rest of the group. Self-experience acknowledges that each person is different from the other, therefore strengths and weaknesses of persons cannot be measured on the same basis as another. Rather, the focus is on talent, uniqueness, and identity of the individual. Khoza (2015a), Ngubane-Mokiwa and Khoza (2016b), Pinar (2012), van Manen (1977), and Boud and Walker (1991), argue that a good place to start when teaching and learning is to begin with the teachers and learners: What do they bring to the event of their own activity? What do they wish to gain at the end? This may be achieved when a personal foundation is catered for: this stage of understanding personal identity is paramount in education. Van Manen (1977) also believes that self-experience is based on the personal experiences of a teacher to systematically examine the situation in a classroom and consider ethical issues to deal with every situation. This includes the ability to consider ethical issues that might arise in the classroom as part of the events.

Mayer (1999) states that a teaching identity is personal and demonstrates how an individual identifies him or herself with being a teacher. It positions the feelings of the teacher at the centre; how the individual feels as a teacher. Similarly, Walkington, (2005) states that the teacher’s identity and uniqueness are central to what they teach, because it upholds their beliefs, values, attitudes, and practices that inform their daily actions whether it be in or outside the classroom. Sutherland, Howard, and Markauskaite (2010) identify four characteristics of self-experience. First is “interpretation and reinterpretation of experiences”
suggesting that, at this level, a teacher develops owing to individual goals of what they wish to become. Second, there is interaction between a person and a context, suggesting that teachers must have the ability to move from their personal knowledge to accommodate knowledge of the community. Third comes formation of professional identity, suggesting that a teacher must be able to explain and justify his or her actions in the specialization or in the field of study, meaning being aware and knowledgeable on the subject matter. Last, there is understanding of sub-identities in the workplace, suggesting that the teacher must be aware that being a teacher means taking other roles as well, such as being a caregiver, nurse, social worker, counsellor, etc. Valli (2009) uses the concept of ‘personalistic’ experience to explain self-experience; asserting that it is a process in which teachers reflect on their personal levels. Their concern is for themselves and their students, even beyond the classroom situation.

Self-experience is underpinned by a pragmatic or artistic curriculum, in which the focus is on outcomes. Formative assessment is also refers to as assessment-for-learning, this form of assessment requires students engagement which promoted by the use of ideological-ware resources which also require the active engagement of students. In this approach, students’ and teachers’ needs are at the centre of teaching and learning (Khoza, 2016) According to van Manen, (1977) self-experience seeks to establish personal conditions and self-understanding with the aim of emancipating teaching and learning. A qualitative study conducted by Mpungose (2017) on “Can the rationale of using Moodle help when lecturers reflect?” concluded that lecturers were using self-experience when teaching using Moodle. They were able to reflect on all curriculum concepts or signals (rationale, aims, goals, content, resources, time, assessment, period, accessibility, and location). Lecturers were driven by self-experience to produce a horizontal curriculum. In other words, self-experience suggests that the curriculum should be structured in such a way that knowledge presented is based on the capabilities of students and teachers rather than students and teachers being the receivers of the curriculum. Zeichner and Liston (1987) believe that proper learning starts when teachers make judgments about the curriculum they teach, giving direction. Kenneth, Zeichner and Liston (1996) argue that, in the curriculum, many staff developments in schools ignore the knowledge and expertise of teachers. They apply top-down models of school reform which force teachers to comply with research-based solutions. Those solutions are based on daily problems faced by teachers in their classrooms. The experience and expertise of the teachers are thus not considered when developing the curriculum, yet teachers are the implementers of
the curriculum. Aoki (1999) argues that the curriculum should not focus only on the planned (curriculum-as-plan), but also on how it is implemented by teachers to students (curriculum-as-lived). The second level of experience is shared-experience. Khoza (2016b) uses societal rationale/reason to describe shared-experience. Societal rationale is similar to shared-experience. Van Manen (1977) uses practical experience to describe shared-experience. Van Manen (1977) notes that this kind of experience is open for investigation, and its focus is on goals to be achieved; not only identifying goals but also examining on what these goals are based, with well-defined learning outcomes. Schon (1987) uses the concept of experience-in-action to explain shared-experience. Mpungose (2017) describes this experience as the informal experience that is based on society, and societal needs are at the centre of teaching and learning. Societal/social vision places society at the centre of the teaching/learning environment. This kind of teaching and learning is called competence or horizontal curriculum (Khoza, 2015c & Bernstein, 1999). Zuma (2016) notes that, for teachers to understand the community and society at large, it is important to infuse values and beliefs of the community into the curriculum.

Further to what has been presented on shared-experience, Schon (1987, p. 54) notes that this kind of experience is an instantaneous experience that happens when a teacher applies his or her level of experience to solve problems or dilemmas. In this process, a teacher draws from the range of knowledge, skills, and understandings of the situation with the aim of changing the situation. He or she applies various strategies in the classroom. According to Schon (1987), this form of experience is divided into two parts, intuitive responses and deliberative responses. Intuitive responses imply that a teacher is able to react instantly in situations, demanding immediate responses to a problem. Van Manen (1995) explains this process is the “immediate reflective awareness.” He further refers to this immediate response as “tactful action”, meaning that these actions are based on perceptions and are controlled by insight while depending on feelings. Deliberative response is a process in which teachers allow themselves to stop and think about the lesson during the progress of the lesson, deliberating on the actions to take. Van Manen (1995) calls this process “stop and think.”

Similar to self-experience, shared-experience is underpinned by the horizontal curriculum, in which the focus is on outcomes, formative, assessment-for-learning, ideological-ware
resources, and require the active engagement of students. At this level of experience the needs of the community are at the centre of teaching and learning. A curriculum is driven by what is needed by the community and society. This kind of curriculum is called a competence curriculum in which the curriculum is driven by specific outcomes. At this level of experience, levels of outcomes are not important. Learning is influenced by the views and opinions of the larger society; and day-to-day knowledge is generated horizontally (Khoza, 2016b). For instance, in South Africa we had an education system that was aimed at providing solutions to the challenges that were encountered by South Africans before democracy. This education was intended to produce responsible citizens. This type of education system was known as Outcomes-Based Education (Curriculum 2005). This education system focused on assessing learners’ performances, based on whether the outcomes envisioned were achieved (Zuma, 2016). After OBE failed, the Department of Basic Education introduced another horizontal/competence curriculum called the National Curriculum Statement (NCS) which was driven by specific outcomes and those outcomes were sub-divided into critical outcomes. Within those critical outcomes, developmental and learning outcomes were included (Khoza, 2016b). Owing to the lack of productivity of the NCS in 2002, the DoE introduced the Revised National Curriculum Statement (RNCS). Again, the implementation faced challenges, and it was reviewed in 2012. Khoza (2015c) commented that, with competence curriculum, assessment is about what learners have achieved based on the needs of society.

Bernstein (1999) differentiates between horizontal and vertical discourse. Horizontal discourse is based upon our understanding and the use of our common sense in dealing with dilemmas. At this level we all have the potential to interpret and think differently. “This form has a group of well-known features: it is likely to be oral, local, context dependent and specific, tacit, multi-layered, and contradictory across but not within contexts”. The crucial feature is that this curriculum is organised by culture segments, specialised activities and practices (Bernstein, p. 159). Circulation of knowledge is not based on systematic and organising principles. Although horizontal discourse has rules and regulations, they are structured on shared-experience, from its practice and contexts. In Bernstein’s (1999) vertical discourse, the way of doing things is organised, things are done systematically and according to the principle of specialised criteria. Circulation of knowledge at this level is based on rules
and regulations, as well as on time. The third and final level of experience is specialised-experience.

Khoza (2016b) use the concepts of professional/discipline/content while Mpungose (2016) utilises the concept of formal rationale also to describe specialised-experience. Khoza (2016b) notes that specialised-experience places specialization or content at the centre of teaching and learning. Van Manen (1977) uses the concept of practical experience to describe specialised-experience. According to van Manen (1977), the focus of this experience is on the efficiency and effectiveness of such experiences. By these means set goals may be accomplished, not open for any further adjustment or debate. Specialised-experience is a source of knowledge for teachers: decisions are framed by research, values, and attitudes. Schon (1987) uses the concept of experience-on-action to describe specialised-experience. According to Schon (1987) specialised-experience is a conscious process that takes place after an event or teaching session. At this level the focus of a teacher is on critical analysis and evaluation of the action; the teacher has questions of what might have happened had a different course of action taken place.

According to Schon (1983), these two concepts: experience ‘in’ and ‘on’ action, are focusing on the knowledge some teachers have, and not only on clear understanding of theory and practice. Usually in education there is no relationship between clear understanding of theory and practice. The basic understanding is that theory exists in universities in preparation for student teachers to be professional teachers. Practice exists in schools in which these student teachers are. According to Zeicher and Liston (1996), the role of the teachers is to apply the theory of the university when doing their job. Little support is given to the teachers to embrace the theory and practice it in schools, hence teachers are facing difficulties in their workplaces. Sadly, teachers, as professionals, do not address these difficulties in the same way. Schon (1983) categorised these teachers into two groups. The first group is called swampy lowland, suggesting that these professionals involve themselves in messy problems, their methods of addressing the problems relying on trial and error intuition, as well as simply muddling through. The other, high ground, focus on technical rigour determined to be solidly professional. Fearful of involving themselves in a process in which they do not understand what they are doing, they decide to focus on narrow technical practice.
Specialised-experience is underpinned by performance or collection or a vertical curriculum in which the focus is on the cognitive domain. Less attention is given to other domains. The centre of attention at this level is the content, which the learner is expected to master using correct concepts, knowledge, theories, and language (Khoza, 2016b & Mpungose, 2016). According to Bernstein (1999), a vertical curriculum is based upon systematic principles. The process is based on steps and uses a specific language. Knowledge structure and circulation at this level is based upon rules regulating processes. Knowledge circulation is distribution and measuring in terms of time, space, and actors. Outcome of knowledge distributed is accomplished through explicit contextualization and assessment.

An example of performance curriculum in South Africa is the Curriculum Assessment Policy Statement (CAPS), focused on content, and using a teacher-centred approach, making the teacher’s role crucial. The qualitative study conducted by Mpungose (2016) on: “Can the rationale of using Moodle help when lecturers reflect?” concludes that lecturers were using self-experience, shared-experience and specialised-experience when teaching using Moodle. These lecturers were able to reflect on all curriculum concepts or learning signals. Similarly, the qualitative study conducted by Khoza (2016b) on, “Is teaching without understanding curriculum visions and goals a high risk?” also concludes that self-experience (which is built by the family and culture) is able to assist teachers to build a strong shared-experience (shaped by community knowledge). This enables the teacher to build a strong foundation for specialised-experience (informed by content knowledge). Aoki (1999) correctly states that any curriculum should not be based only on the planned curriculum (curriculum-as-plan) but should also be based on how students and teachers lived the curriculum (curriculum-as-lived).

Within these three levels of experiences (self, shared, and specialised-experience), all are significant in structuring the curriculum. For any curriculum, at any level (SUPRA, MACRO, MESO, MICRO and NENO), it is important to be framed within the boundaries of acknowledging the self-identity of both students and teachers. This allows the curriculum users to appreciate themselves as unique individuals who need to be praised and are allowed further growth and development. This boosts the self-esteem and confidence of curriculum users, both psychologically and mentally. At this level, the curriculum should assist teachers
and learners first, to find themselves. Once they succeed in doing this, the second stage is to understand cultures, beliefs, and values of the wider community. These two levels of experience cannot be separated, in that human beings live in the community but use varying cultural practices and values. Therefore, to be accommodated by the community, one must have strong foundations of self-individualism. Last is specialised-experience; for any nation/society/community to develop (economically/politically/socially), understanding of content knowledge is crucial. It is crucial to understand Moodle, as the teaching and learning tool used by universities these days to prepare students to meet the needs of globalisation. These concepts have been changed in this chapter with the aim of creating new meaning that contributes to the body of knowledge and contributes to the larger discussion. A change of these concepts/terms may create better understanding among teachers or lecturers, enabling them to make connections with what was misunderstood from previous scholars. Furthermore, this demonstrates a clear understanding of the phenomenon that the researcher is unpacking, while aiming to add value.

3.4 Learning Management System

There are many expressions that are used by scholars to define educational computer applications, for instance learning management systems (LMS), course management systems (CMS), and e-learning systems or virtual learning environments (VLE). Szabo and Flesher (2002), in their writings based on contextualised multiple intelligence (CMI) theory and practice, describe an LMS as a structure that handles aspects of learning. This infrastructure is responsible for supporting and delivering learning content: assessing, collecting, and presenting data, and tracking the progress of the individual. Moodle is also an educational computer application intended to enhance educational goals through the use of technology.

3.5 Moodle

Moodle is an acronym for Modular Object-Oriented Dynamic Learning Environment (Wilnechenko, Arul-Pragasam & Arul-Pragasam, 2008). Moodle was created by Martin Dougiamas in Australia as part of a research project aimed at understanding the role of Internet software in supporting social constructionist epistemologies of teaching and learning (Winter, 2006). It is a free and open-source software set that is designed to use sound
pedagogical principles and may be used by Windows or Mac computers (Got Moodle, 2008). Moodle is almost the same as Blackboard, the difference being that it is an open-source software. Moodle is therefore free to download and to use. The major advantage of open-source software, such as Moodle, is that they have the ability to be modified and redistributed by the users themselves. It may be a solution to some of the common problems such as language, because users can develop their own language packs and instal them into Moodle. This then provides easy communication between the lecturers and the students in which the learning environment is supportive to students and encourages collaborative learning. However, the major disadvantage of open-source software is that it lacks support. Open-source software needs personnel with the essential knowledge and skills for proper implementation of the software (Machado & Tao, 2007).

Moreover, Bates and Poole’s (2003) study on framework for technology describes Moodle as a tool for educators that is used to structure courses, deliver subject content, and assess students. Moodle assists teachers to effectively model the National Education Technology Standards for Teachers (NETS, 2008) since it guides and provides instructions to students. Moreover, with Moodle, teachers can accommodate individual learning needs. It gives educators flexibility and time to structure courses in a way that is more meaningful to students and provides choices in education. According to Costa, Alvelos, and Teixeira (2012), Moodle further provides platforms to explore new teaching and different teaching and learning methods.

Alternatively, Khoza (2016b) describes Moodle as a resource and environment for learning. An educational resource is anything that facilitates or initiates learning or “any person or thing that communicates learning” (Khoza, 2012, p. 75). Khoza (2012), in his study titled, “Who helps an online facilitator to learn with students in a day?” places these educational resources into three categories: First; hardware (HW) resources, which refer to physical equipment that facilitates the learning process, for instance computers, overheard projectors, and others. Dougiamas and Taylor (2003) assert that Moodle is designed for teachers to create their own platform of servers utilising their desktop computers. Second is the software (SW) resources, which refers to software required to display and interpret information from the hardware for users (teachers and learners). Moodle falls under software resources as software that requires hardware in order for it to function and provide meaningful information to its
users. Third is ideological-ware (IW) resources, which refers to teachers’ pedagogical knowledge of the subject matter. Costa, Alvelos, and Teixeira (2012) noted that Moodle resources are represented as instructional materials that have to be created into digital formats and then uploaded to learning spaces. We may therefore have hardware and software resources, but Moodle still requires ideological-ware (teacher understanding) for full implementation in the classroom environment.

A qualitative study conducted by Machado and Tao (2007) on “Blackboard vs Moodle”: comparing user experience of Learning Management Systems, utilised two groups of students who have been exposed to both Blackboard and Moodle. This study defined Moodle as an application that is designed with the specific aim of supporting teachers in meeting their pedagogical needs and to deliver learning content to students according to their goals. Singh (2014) states that it provides teachers with the necessary tools to create a course website for enrolled students to access. It also provides numerous tools for effective teaching and learning, in which the teacher uploads and shares the material with students. Singh (2014) further outlines the importance of such software, noting that with globalisation swelling across the globe, traditional methods of teaching have been replaced by technology. The use of ‘chalk and talk’ is vanishing. Platforms such as Moodle further allow students to express themselves in many ways. Learning can take place out of the classroom, giving more time for composing questions that lead to greater participation than when students are in class, some being too shy to engage.

3.6 Tools and Functionalities of Moodle

3.6.1 Hardware resources

Garrison and Kanuka (2004) refer to hardware resources as technical resources which are the necessary tools to meet teaching and learning needs. According to Khoza (2012, p. 75), “Hardware is any machine or tool used in teaching and learning but in terms of online teaching and learning they are used to access the Internet.” Hardware is divided into two: external hardware (equipment that is connected outside the main computer). Examples of external hardware resources are the monitor, keyboard, mouse, printer, and speakers. Examples of internal hardware resources (these are necessary for computer to operate) are processing memory motherboard, hard-drive, and video/memory card. The majority of higher institutions around the world use hardware resources, with laptops being the most popular.
Laptops are now trending and are currently owned by university students because of university programmes and learning methods that demand that students utilise computers (Lauricella & Kay, 2010) similarly, a qualitative study conducted by Smith and Caruso (2010) indicates that the majority of students in higher education use hardware resources for their learning. All popular accounts such as YouTube, iTunes, Facebook, and Learning Management Systems (LMS), are accessible because of hardware resources. This assists students with their learning experience. Without hardware resources, students may not have learned these popular programmes today. Ally and Gardiner (2012) state that increasingly useful information and communications technology is the smart mobile technology. This includes mobile phones and tablets. These gadgets are portable and have Internet connections. Students usually use them for social media on a regular basis. Hence, if these hardware resources are utilised for educational purposes, the curriculum objectives will be achieved. Khoza (2015c) states that, when the curriculum is dominated by hardware resources, the curriculum addresses the needs of the community/society and the needs of the discipline.

3.6.2 Software resources (SW)

Numerous human activities use software resources, services such as teaching and learning, (Basic Education and Higher Education); businesses and or social interactions. Higher education depends on the Internet to support students that will contribute to society. (Vaquero, Rodero-Merino, Caceres & Lindner, 2008; Darries, 2004). Khoza (2012, p. 75) define software resources as “any material that is produced for the hardware to display information or communicate learning”. Khoza (2012) identifies two examples of software resources as offline transparencies for the overhead projector, and online PowerPoint slides. Online and offline software are different. Online software may be seen and not touched, whilst offline software may be seen and touched. Other examples of software resources are Moodle, antivirus programmes, emails, Internet browser, and presentations. Derris (2004) notes that, for South Africa, it is important for students to utilise the Internet. Graduates are being prepared for the electronic working environment. With the development of technology in schools and the use of the Internet in developing countries in particular, the approach to teaching and learning is making a paradigm shift. Online learning with the use of relevant software, is a promising field. This increases the number of students enrolling in higher education institutions. Distance learning is accommodated by the use of software resources that support students’ learning (Su, Bonk, Magjuka, Liu, & Lee, 2005). Khoza (2015c) notes
that, when the curriculum is dominated by software resources, it addresses the needs of society and the needs of the discipline. This suggests that the curriculum focuses on software resources and aims to achieve shared-experience and specialised-experience, similar to the curriculum driven by hardware resources.

3.6.3 Ideological-ware (IW)

Shulman (1987) describes ideological-ware as the teacher’s understanding of the curriculum. Teachers deploy helpful forms of presenting ideas, content, illustrations, explanations, demonstrations and examples. Teachers’ knowledge can make learning either easy or difficult for learners. Johansson (2006) notes that providing schools with sufficient computers or any other educational resources, does not mean that educational aims have been achieved. A qualitative study conducted by Ishtaiwa (2011) on the use of Moodle in higher education concluded that lecturers have a strong interest in using Moodle. They hold the view that it is an effective tool promoting teaching and learning. Some lecturers view Moodle as a tool that solves the problem of large classes: they use Moodle to distribute teaching material without changing their teaching strategy and the content they teach.

These three categories of resources have significant meaning in shaping the curriculum. As indicated earlier, the three levels of experience (self-experience, shared-experience and specialised-experience) underpin a particular approach to teaching. For instance, self-experience informs the pragmatic approach; shared-experience informs the horizontal approach; and specialised-experience informs the content approach. In relation to teaching resources, a qualitative study conducted by Khoza (2013) indicates that teachers believe that HW and SW are important in teaching. They encourage students to learn using these learning resources instead of learning with teaching. Baker (2005) similarly notes that the challenge we have in South African school lies in trying to establish the learning environment in which technology may be effectively taught, neglecting the critical part, which is to equip teachers with subject content. Amory (2012) comments that learning is not about technology, but is rather about ideology. This suggests that learning is not only about hardware and software resources. Ideological-ware is especially important, yet teachers neglect it (Amory, 2012). A qualitative study conducted by Khoza (2015c) points out that a curriculum that is centred on hardware resources to achieve its aims, mostly addresses specialised-experience (content) and shared-experience (community needs); whereas the curriculum that is centred on ideological-
ware to achieve its aim addresses self-experience (needs of the teacher and the students). Khoza (2012) identifies examples of ideological-ware: teaching and learning strategies; theory of teaching and learning research findings; and teaching experiences. These examples indicate the teacher’s understanding of the subject matter or content in utilising the correct methods of teaching and learning. It further understands both positions as a teacher and as a learner.

3.7 Advantages of teaching and learning using Moodle

According to Dougiamas and Taylor (2003), Moodle is designed to be user friendly and flexible for students and teachers. Moodle uses popular language, which accommodates any computer. This allows teachers to create their own servers by using desktop computers. Dougiamas et al. (2003) contend that Moodle is created in a highly modular fashion. It includes conjoined technologies such as shared libraries, and cascading style sheets. It is also designed to link with other systems, for instance mail servers or student encyclopaedias. This suggests that Moodle focuses on or was designed to address a competence and performance curriculum aligned with shared-experience and specialised-experience, in which students can socialise with one another; at the same time, formal learning will be taking place.

Table 3.1: Most Important Features of Moodle

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description of the Feature Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson</td>
<td>Platform on which various kinds of activities may be conducted by students</td>
</tr>
<tr>
<td>Chat</td>
<td>Platform for students to discuss their work or their issues</td>
</tr>
<tr>
<td>Forum</td>
<td>Platform on which students’ discussion takes place on the posted activity</td>
</tr>
<tr>
<td>Wiki</td>
<td>Learning tool to assist students in their group work</td>
</tr>
<tr>
<td>Choice</td>
<td>Selection of questions by the students to respond to, using opinions of the class</td>
</tr>
<tr>
<td>Assignment</td>
<td>Platform on which students’ work may be uploaded; then graded with comments</td>
</tr>
<tr>
<td>Quiz</td>
<td>Set of questions that are automatically graded. Students receive immediate feedback.</td>
</tr>
<tr>
<td>Workshop</td>
<td>Platform that is used for peer assessment. This has different levels for grading</td>
</tr>
</tbody>
</table>

(Originated from the literature)

The lesson feature is presented as a set of topics organised and summarised. Instructions are provided using these lessons. The user or the student must use the respective link to access
lessons. This feature of Moodle (Lessons) is designed to address the needs of specialised-experience, where the learning process has to follow certain procedures. However, the Chat feature is a platform that is used as the communication tool as it allows synchronous conversation. Chat becomes important for students to gain understanding of different topics through discussion with peers. Chat discussions can be beneficial for group discussions when meeting-up face-to-face with a group is impossible (Singh, 2014). This feature of Moodle is designed to address the needs of shared-experience, where students demonstrate understanding of topics through chat. Forum: This platform is also used as a tool for communication between students and their teachers; the exchange of ideas is promoted by this platform. The platform allows students and teachers to communicate even when not online at the same time. There are no instant messages, as is the case for Chat. Singh (2014) notes that this platform is an advantage to students who are struggling with the language of the course and who are reticent, giving them enough time to think and compose responses. This feature of Moodle is designed to address the needs of self-experience, which places the needs of the student or the teacher at the core of the curriculum.

Wiki: allows the students and teachers to collectively edit web pages and further provides a platform for teamwork between users. The Wiki is thus designed to fulfil the needs of the students and teachers. Therefore it caters for self-experience in which teachers and students are able to change or rectify the Wiki so that their needs are embraced. Choice: a platform on which teachers may ask questions to students, providing specific multiple-choice answers. It promotes high-level thinking among students on specified topics. Choice is therefore designed to address specialised-experience since it consists of specific multiple-choice questions that deal with specific questions. Assignment: allows teachers to collect assignments quickly. It also provides immediate feedback to students who are able to upload their assignments within this platform. Assignment is thus designed to fulfil specialised-experience: students have to do work according to the instructions of the teacher. Quiz: allows teachers to use quizzes as the method of assessment. Quizzes are designed with different sets of questions and answers; for instance, multiple choice and true or false questions. Quiz promotes students’ interaction with their work and understanding of different topics. Quizzes are so designed to fulfil specialised-experience (Kats, 2010). These features of Moodle imply that Moodle is ideal for a performance and competence curriculum in which students, teachers, and lecturers are expected to comply with the demands of Moodle, regardless of their personal interests and beliefs on teaching and learning using Moodle.
As alluded to in the above paragraphs, Moodle is free of charge. All features referred to in Figure 1.2 are free of charge. Teachers only have to download it from the Moodle website (www.moodle.org). Chat-rooms and forums are there to support students, so that they will interact with one another. Interaction serves multiple purposes including guidance on the tasks, sharing of ideas, and socialization. However, students and lecturers benefit from Moodle academically, because subject content, tasks or assignments, discussion forums, learning resources and instruction reach students on time. This availability of information assists students who need extra support in their work, or students who have missed classes. It also provides a platform on which students may connect with the curriculum outside their lecture venues (Shachar & Neumann, 2010). In addition, Moodle is complementary and is beneficial to students and lecturers in our local universities, allowing our universities also to meet the international standards of quality teaching and learning, via the use of technology. However, at this level, Moodle addresses shared-experience and specialised-experience. Therefore, students and lecturers implement and learn Moodle with proper understanding. Moodle should address self-experience. Khoza (2016b) intimates that a strong foundation of self-experience builds a strong foundation for shared-experience. A strong shared-experience builds a strong foundation for specialised-experience.

Today Moodle is used by numerous universities across the world; universities in North American, Asia, Australia, South America, and even universities in Africa. It is available in 60 different languages in 120 countries (Itmazi & Megias, 2005). Carvalho, Areal, and Silva (2011), and Khoza (2016a) noted that Moodle is used most by higher education institutions for teaching and learning. The survey conducted by Matušů, Vojtěšek, and Dulik (2008) on technology-enhanced learning tools in European higher education, concluded that almost all universities in more than 27 European countries use Moodle, more than any other LMS. Universities in Portugal use Moodle as a tool for teaching and learning, with most institutions moving from Blackboard. The following are examples of universities that use Moodle.

According to Carvalho, Areal, and Silva (2011), the use of LMSs in schools and universities in Europe has been adopted as part of teaching and learning. This is well supported by the
government of Portugal by ensuring that from primary and secondary school, students are
taught how to use Information Technology; when they enter universities they are well
equipped. The government ensures that all levels of education from primary to university
students have support material for technology, such as laptops. The most popular LMS in
universities in Europe is Moodle, which is used in more than five universities. The study
conducted by Carvalho, Areal, and Silva (2011) indicates that most secondary students in
Europe use Moodle; and in universities use Blackboard and Moodle. This exposes students to
more opportunities to understand both LMSs and also have options of choosing their
preferred LMS. Moodle becomes the preferred choice because students have been exposed to
it in secondary school. However, students may have a clear understanding of Moodle and be
willing to learn further. The most important figures to understand these LMSs are the teachers
who are the implementers of the curriculum. Prensky (2011) compares the current generation
with the older generation, acknowledging that the children of today are more exposed to
technology and have spent more hours on using technology than their parents who are digital
immigrants. The interpretation deduced from this summary that in this university, Moodle is
used to achieve both a vertical and horizontal curriculum. In terms of experiences, this
suggests that the emerging experiences at this level are the specialised-experience (vertical)
and the shared-experience (horizontal).

Moodle is the leading open-source solution in California. In 2006, the University of
California announced that the Faculty Committee on Educational Technology should use
Moodle as the platform for teaching and learning. The qualitative study conducted by
Machado and Tao (2007) on “Blackboard vs. Moodle: Comparing User Experience of
Learning Management Systems”; and a qualitative study conducted by Van Duzer and Munoz
(2013), the “Learning Community Explores the Potential of Mobile Apps in Higher
Education”, both concluded similarly, that the majority of students in United States
universities are satisfied with, and prefer to use Moodle over other LMSs. Experiences that
emerge from the use Moodle by these universities in California are the specialised-experience
and shared-experience.

One of the universities in Tanzania uses Moodle today. Since 1985, Tanzania has undergone
political and economic transformation; changes saw a shift from centralization to market-
oriented, in order to meet the needs of globalisation. The university started by shifting from using Blackboard to Moodle, because the costs of licence fees were unaffordable for the university. Moodle was then used as a distance programme, and it was adopted because it accommodates diverse learning styles. The applications on Moodle can allow information to be displayed and presented in differing formats. Apart from this, Moodle, is used as the intervention programme to address the challenges facing the African content on the use of technology in African universities. Migrant students receive assistance from Moodle in a number of ways (Mtebe, Dachi, & Raphael, 2011). The focus of the curriculum in this university is on a vertical and horizontal curriculum, which means that Moodle is projected to specialised-experience and shared-experience.

One university in South Africa ensures that Moodle is compulsory. In 2016, some first- and second-year students bought laptops for easy access to Moodle. This was Phase One of Moodle implementation. In 2017, the second phase of implementing Moodle, the focus shifted to third- and fourth-year students. In 2018, the third and last phase of implementation of Moodle, the focus was on postgraduate students. All students in this university are required to have hardware resources that use the Internet (cellphones, laptops, and computers) to access Moodle. The majority of students come from under-resourced schools, meaning that few students were previously exposed to digital technology for the purpose of learning. Lecturers must therefore have a clear understanding of Moodle so that notes will no longer be hard copies.

The transformation of this university suggests that the university is moving towards meeting the needs of globalisation in which education received by students is comparable with the world standard regardless of the fact that South Africa is a developing nation. However, the introduction and compulsory use of Moodle focuses on students, who are regarded as the Google generation (Khoza & Manik, 2015) or digital natives (Prensky & Berry 2001). Carvalho, Areal, and Silva (2011) state that students arrive at universities with a clear understanding of technology and are skilled in using technology. However, what about university lecturers: are they well equipped to teach these students using Moodle, or is it the other way around? Costa, Alvelos, and Teixeira (2012) state that, in order to overcome challenges of implementing e-learning, we must consider learning platforms and learning contexts, which critically depend on teachers. We must ask these questions: Do teachers have
sufficient knowledge of the tools they use? Are they aware of how to use those tools? Are they able to organise those tools? The actions taken are not new to South African universities; a university in Johannesburg made laptops or tablets compulsory in 2015. Another university in Johannesburg is planning on making Moodle compulsory; while the University of South Western Cape is looking to make similar moves. This indicates that universities are shifting from what was well-known as a paper-based learning environment, lecturer notes, or course packs, to an online learning management system. These universities are therefore focusing on their vertical curriculum, which demands that students and lecturers perform, students being regarded as “digital natives.” This promotes specialised-experience as the dominant experience that overpowers self-experience, in which students’ needs should be at the core of any curriculum.

Moodle is designed to accommodate both students’ needs and the teacher/lecturer needs. As the users, they are enabled to create the Moodle environment which is based on experiential and subjective activities, in which students and lecturers are capable of constructing rigorous knowledge. Self-experience is promoted when knowledge constructed in a supportive environment triggers personal actions within students’ and lecturers’ subconscious minds (Khoza, 2011). Dougiamas and Taylor (2003) acknowledge that Moodle is designed to be flexible and compatible, and easy to modify. Moreover, the language that is used in the Moodle environment allows easy understanding of any user. Moodle therefore promotes self-experience in which the interests of the students and teachers are considered in the process of teaching and learning. The qualitative study conducted by Khoza (2012) indicates that online learning is important to students and teachers. Features such as online chat promote thinking among students; and students are able to engage with the discussion without feeling embarrassed.

Moodle is an open source that is different from other open sources, because Moodle may be improved and modified from time to time. Singh (2014) identifies the following as special elements of Moodle. First, Moodle becomes special because of its sound educational philosophy: Moodle was formulated with the basic foundation of social constructivism by Martin Dougiamas (Winter, 2006). Other LMSs are based on tool-based learning whereas Moodle is learning-based. Constructivism means knowledge is constructed not reproduced: experience before, during, and after, are important. Learning from others is important while at the same time the autonomy of the student is important. Second is community support.
Moodle accommodates communities around the globe while at the same time is able to share and support communities who work together as one community which leads to quality. Third, is great documentation; Moodle is well documented compared with other open-source LMS systems. Moodle topics are well structured and are related to one another, which is suitable for a reader or user. Fourth, there is a great collection of modules. Moodle has a large database that accommodates the learning needs of each student and teacher. Fifth, language options: Moodle is available in most popular languages. It is easy for teachers and students to access Moodle in their preferred language. Moreover, Moodle is transferable to students’ language. Currently, Moodle has been translated into 126 languages around the world. Last, responsive interface design: Moodle has responsive designs of themes. This makes it easy for users to understand.

Al-Ajlan and Zedan (2008, p. 60) noted that Moodle is designed for individuals who are familiar with computer software. For any other user Moodle is complex to use. Over 66% of users are teachers, students, and administrators. For the beginners, it is not easy to instal and use Moodle, because of complex technical words that need understanding by the user. Moreover, Moodle requires the course administrator to work with teachers and technicians to create online course content and material. Last, Al-Ajlan and Zedan (2008) note that Moodle lacks simple-to-obtain support. For instance, forums are useful features of Moodle offering a great deal of information; however, almost all are in the English language. Al-Ajlan and Zedan (2008) therefore propose that, even though Moodle is seen as a CMS that is dominated or that was founded to fulfil the world of shared-experience, it still requires an element of specialised-experience. It requires a certain language with certain concepts that may be easily understood by an individual with special knowledge relevant to Moodle.

3.8 Disadvantages of teaching and learning using Moodle (Moodle)

According to Bower and Wittmann (2009, p. 34), some limitations of Moodle are that it is time consuming to create a sequence; it requires technology-literate students; and has poor or confusing interface design. Moreover, module templates are too rigid, because not all learning experiences can be online. On the other hand, Al-Ajlan and Zedan (2008) identify the following four limitations around Moodle. The first one is that only an expert can easily understand and instal Moodle. Second, not anyone can instal Moodle because of its complex words when installing. Third, Moodle requires a course administrator to assist teachers and students for them to easily understand Moodle. Last, forums are only in the English language,
which forces all users to understand English. Users of Moodle are likely to be challenged by
the structure of Moodle which forces them to understand the language used in specialised-
experience in order to be accommodated by Moodle.

3.9 Chapter Conclusion
This chapter generated propositions such of the concept experiences. These propositions were
self-experience, specialised-experience, and shared-experience. The rationale behind
unpacking these concepts is to bring a clear understanding and application or use of these
concepts in the higher education context. This literature makes a clear distinction between
curriculum as a plan for learning, and curriculum as a plan of learning. These concepts of
curriculum have been aligned correctly with the three levels of experiences (self-experience,
specialised-experience and shared-experience) based on the South African context. From the
literature it is clear that, without understanding these three levels of experience, teachers and
students are not going to be fully effective as curriculum users. Any curriculum must first
place the teacher or student at the centre. The curriculum must acknowledge that people are
unique, and their capabilities are not identical with others (self-experience). This literature
review further engages extensively with the concepts of Moodle as the teaching and learning
tool used by the majority of universities around the world. Thus, teaching resources enabling
teachers to be aware of the three categories of resources: hardware, software, and ideological-
ware, have been discussed in connection with their role in the curriculum.
CHAPTER FOUR
RESEARCH METHODOLOGY

Figure 4.1: Graphic representation of Chapter four
4.1 Introduction

In the previous chapter, I explore concepts of the theoretical framework including presenting the theory that underpins this study, which is the Technological Pedagogical Content Knowledge (TPACK). Furthermore, the components were critically aligned with the three levels of experiences, which is the phenomenon of this study, namely, shared-experience, self-experience, and specialised-experience. Alignment was also made with the three types of curriculum, namely, competence curriculum, pragmatic curriculum, and performance curriculum. In order to achieve research objectives and be able to respond directly to the research questions, it is important to utilise the necessary research benchmarks that add value and meaning to this study. These research benchmarks are: 1) The critical paradigm, 2) The phenomenological research study, 3) Sampling, which includes convenience and purposive sampling, 4) Data generation, which includes reflective activity, 5) Artefacts and semi-structured interviews, 6) Guided data analysis, which includes deductive and inductive analysis, and 7) ethical issues and trustworthiness, which includes confirmability, dependability, credibility, and transferability. These research benchmarks are framed by the three levels of experience: shared, self, and specialised, as the table below indicates.

Table: 4.1: Utilising Experiences to Frame Research Benchmarks

<table>
<thead>
<tr>
<th>Research Benchmarks</th>
<th>Shared-experiences</th>
<th>Self-experiences</th>
<th>Specialised-experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research paradigms</td>
<td>Interpretive</td>
<td>Critical</td>
<td>Positivist</td>
</tr>
<tr>
<td>Phenomenological</td>
<td>Practice</td>
<td>Critical</td>
<td>Technical</td>
</tr>
<tr>
<td>research study</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sampling</td>
<td>Purposive</td>
<td>Convenience</td>
<td>Random</td>
</tr>
<tr>
<td>Data generation</td>
<td>Artefacts</td>
<td>One-on-one semi-</td>
<td>Reflective activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>structured interviews</td>
<td></td>
</tr>
</tbody>
</table>
4.2 Educational Paradigms

4.2.1 What is a research paradigm?

Cohen, Manion, and Morrison (2011) suggest that, for any research to be undertaken, a study must outline the research paradigm underpinning it. As Groenewald (2004) points out, the word paradigm is a noun, originating from the Greek (paradeigma) and Latin (paradigma) meaning pattern, model, or example. Göktürk (2005, p. 2) describes a paradigm as “a set of assumptions, concepts, values, and practices that constitutes a way of viewing reality for the community that shares them, especially in an intellectual discipline”. Similarly, Morgan (2007, p. 53) describes the paradigm as, “shared beliefs within a community of researchers who share a consensus about which questions are most meaningful and which methods are most appropriate for answering those questions”. Morgan’s (2007) understanding of the term research paradigm is taken from a shared-experience position, wherein the view of the world is informed by the community. Blanche, Blanche, Durrheim, and Painter (2006, p. 40) describe research paradigms as the “systems of interrelated ontology, epistemology, and methodological assumptions”. Research paradigms follow a discipline which in this study is referred to as specialised-experience; wherein the view of the world is informed by a particular specialised knowledge. Blanche et al. (2006, p. 40) describe paradigms as “perspectives that provide rationale for the research and commit the researcher to particular methods of data collection, observation, and interpretation.” Last, Denzin, and Lincoln (2000, p. 157) provide a very short and on point description of a research paradigm, calling it a “basic set of beliefs that guide action”. Research paradigms thus follow a self-experience, wherein the view of the world is informed by individual identity. These definitions of a research paradigm enable me to reflect in three areas; self, shared, and specialised experiences, creating the alignment between research paradigms and types of experience.

Guba and Lincoln (1994) identify the three main questions that describe a research paradigm. The first question is ontological: What is the nature of reality? And what is to be known about it? The second question is epistemological: What is the nature of knowledge between
the knower and that to be known? The third question is on methodology: How can the researcher gain the required knowledge? Guba et al. (1994) further state the significance of a research paradigm in a research; the paradigm is central to answering the main research questions and the manner in which the research is going to be undertaken. Cohen et al. (2011) recognise three paradigms in educational research: 1) The positivist paradigm, which strives for objectivity, meaning that the understanding of the world is based on rules and laws, 2) The interpretive paradigm, which strives for understanding and interpretation of the world, and 3) the critical paradigm, which strives for human emancipation (Cohen, 2011, p.31). Each paradigm is ordered according to three levels of thinking: ontological, epistemological, and methodological (Burrell & Morgan, 1979). Trochim (2000) states that ontology includes the philosophy of reality that we know, while epistemology is intended to address how we know or understand reality; and methodology is methods to be utilised to attain knowledge. Krauss (2005) further notes that epistemology should ask these fundamental questions: what is the connection between the one who is the knower and that which is known? How do we know what we know? What is it that we can regard as knowledge? The following figure explains the three paradigms in educational research as described by Cohen et al. (2011) and Guba (1999).

![Alignment between research paradigms and experiences](image)

Figure 4.2: Alignment between research paradigms and experiences

The following paragraphs will focus on the types of research paradigm that are regularly used in research, aligning them with types of experience. First, the positivist paradigm focuses on
the scientific ways of viewing the world, scientific methods of collecting data, and also scientific recommendations made. This paradigm uses a quantitative approach (Creswell, 2014). This way of reflecting on the scientific world is aligned with specialised-experience, wherein a particular specialization language and processes are followed to reach recommendations. Data generation and findings are centralising what science and law or procedure reflect around the world. Second, the interpretive paradigm seeks to understand human behaviour and interpretation of the world (Creswell, 2014). This way of reflecting on human behaviour is aligned with shared-experience, wherein human behaviour and actions are influenced by the views of the community. Data generation and findings are indicating what communities reflect on in the world. Last, there is the critical paradigm, wherein empowerment of individuals or groups in a democratic society is the main purpose of the researcher (Cohen, Manion, & Morrison, 2011). This way of reflecting on the world centralises individual identity, uniqueness, and personal experiences. Data generation and findings on this type of experience focus on self-experience. This study is more interested in the critical paradigm in which issues of power and the self-development of geography lecturers using Moodle is concerned.

4.2.2 Significance of these paradigms in educational research

Cohen et al. (2011) argue that paradigms in educational research play a profound role. First, paradigms allow the researcher to formulate critical questions that enable the researcher to answer the research and find reality and truth around the topic. Second, paradigms enable the researcher to characterise participants, teachers, and students to generate relevant data. Third, research paradigms shape the methodology that must be used by the researcher, which informs the kind of data a researcher needs to focus on, and how the data will be analysed. Bertram and Christiansen (2014, p. 22) further note that paradigms in research are there to represent a specific world and its interpretation; a researcher determines the choice of paradigm through carefully answering the following questions: what kind of questions are supposed to be asked? What is it that may be observed and investigated? What methods of data collection are used? How may the findings be interpreted? The answers to these questions are shaped by a particular world of experience. Within these three paradigms presented, this study is underpinned by the critical paradigm. The following is a graphical representation of the critical paradigm in relation to the ontology, epistemology, and methodology.
First, for better understanding of this study, it is important to discuss Figure 5.3 in detail. Ontologies “are content theories about the sorts of objects, properties of objects, and relations between objects that are possible in a specified domain of knowledge” (Chandrasekaran, Josephson, & Benjamins, 1999, p. 20). The significance of ontology to a research is that first, the structure of knowledge is clarified, meaning better understanding of the domain. This includes providing vocabulary for better representation and strong analysis of knowledge. Second, it enables the sharing of knowledge (Chandrasekaran et al. 1999). One of the fundamental questions that ontology must ask is: “What is the nature of reality?” (Guba & Lincoln, 2005, p. 24). In relation to ontology, this study utilises the qualitative research method wherein the interest is on finding the reality between the object (lecturers) and subject or the phenomena (experiences): why lecturers reflect in particular ways. However, the most interesting element of this study is on human emancipation which led to the utilization of the phenomenological research study.

Second, Oquist (1978) describes epistemology in relation to a phenomenological research study as an enquiry based on understanding the ways in which humans produce knowledge; the ways of justifying that produced knowledge, the relationship between theory and practice, and last, the relationship between ideology and science. Similarly, Guba & Lincoln (2005, p. 24) note that epistemology is based on one fundamental question: “What is the nature of knowledge and the relationship that exists between the knower and the known?” In this study, the critical paradigm is utilised with the aim of generating data that addresses the experiences
of lecturers in relation to the phenomena (experiences). Furthermore, a phenomenological research study was utilised to transform lecturers.

Third, Brown (2006, p.13) describes methodology as “a philosophical framework within which the research is conducted or the foundation upon which the research is based”. Methodology is important to the researcher because it enables the researcher to explain the ways in which data was generated, which is informed by understanding these three points: What is reality? What is knowable?, and What value does the research have? (Brown, 2006). A phenomenological research study was utilised with the aim of empowering geography lecturers who are not empowered on Moodle. There are three methods of generating data: reflective activity, one-on-one semi-structured interviews, and artefacts. These methods are aligned with three types of experience: reflective activity is aligned with specialised-experience; one-on-one-semi-structured interviews is aligned with shared-experience; and artefacts are aligned with self-experience.

4.3 Definition of a Critical Paradigm

4.3.1 What is a critical paradigm?

The notion of a critical paradigm originated in the work of Habermas and his predecessors, Adorno, Marcuse, Horkheimer, and Fromm (Cohen, Manion, & Morrison, 2011). The fundamental aim of the critical paradigm is to emancipate individuals or groups in a democratic society, in which people have political freedom. The intention of the critical paradigm is not to provide an account of the behaviour of people in the society with regard to democracy; and not to understand phenomena being investigated; but rather, to bring about social change based on empowering those who have been disempowered. The inequality and injustice done to those that were treated unfairly must be redressed. A critical paradigm seeks to provide power to those who are powerless. The central agenda is on legitimacy, equality, and active participation (Wahyuni, 2012; Cohen et al., 2001; Guba et al., 1994; Connole, 1993). This study has therefore to undergo a process of transformation: it should empower people if findings indicate the need to do so. Wahyuni (2012) notes that the critical paradigm focuses on challenging the beliefs of the known or the truth. This paradigm focuses on studying human behaviour, while at the same time it believes and acknowledges that knowledge results are based on social conditioning. Cohen et al. (2001) notes that this paradigm views human understanding as framed by a particular context such as politics and ideology. Furthermore, this paradigm is utilised commonly in these three methods, namely:
research that focuses on curriculum; research that is participatory phenomenological research study and feminist theory; in which issues of power are articulated.

4.3.2 Advantages of utilising critical paradigms in this study
One of the major advantages of utilising the critical paradigm is that of the empowerment or development of individuals or groups (Cohen et al., 2011). In this case, lecturers are not empowered on the use of Moodle, yet are fully expected to use it as the mode of teaching and learning. Fortunately, many of the lecturers who are participants in this study understand technology, which makes it easier for them to quickly grasp Moodle; however, they still require empowerment. The second advantage of a critical paradigm is that the researcher can change the situation in a community or area. The research is not only about reporting the findings of the study. In the case of this study, the researcher was able to transform geography lecturers, not only on Moodle, but also on understanding the concepts of the curriculum, and furthermore, the types of experiences which help them to improve their teaching of geography. Third, the critical paradigm carries the agenda of interrogating the relationship that exists between the school and society, for instance, how to address issues of inequality, and how society constructs knowledge (Cohen et al., 2011). In this study, the use of the critical paradigm enabled the researcher to categorise experiences into three types—self-experience, specialised-experience, and shared-experience. Last, this paradigm is significant in educational research in that it questions findings rather than accepting them, as they are unlike other paradigms. The aim is to promote the transformation agenda for the researcher.

4.3.3 Application of the critical paradigm to the South African context
Zuma (2016) utilises the critical paradigm to explore “Teachers’ experiences of teaching Geographical Information Systems (GIS) at Grade 11 within CAPS”. The study utilises three methods of data generation: reflective activity, one-on-one interviews, and group interviews. The findings of this study indicate that teachers lack understanding of the GIS, and that required teaching resources are scarce in most of these schools. After the phenomenological research study cycle process, teachers were educated on GIS; and all have a clear understanding of the system. However, the challenge are the supply of resources such as hardware; and relevant software scarcity still persists.
Nkohla (2017) utilises the critical paradigm to “explore teachers’ experience in teaching agricultural science in South African schools”. Methods of data generation were reflective activity, one-on-one semi-structured interviews, and group interviews. The findings of this study indicate that in agricultural science classrooms there is a mismatch between theory and practice, which is influenced by the lack of relevant resources. The role of the critical paradigm was then to allow teachers to reflect while participating in finding possible solutions to this problem. Transformation was achieved.

Mpungose (2017) again utilised the critical paradigm to explore “Can lecturers’ experience on and in the use of Moodle platform on students succeed?” Methods of data generation that were used include reflective activity and one-on-one semi-structured interviews. The study concluded by acknowledging that lecturers should use both experience-on-action and experience-in-action in order for students to succeed. Further to that, lecturers use Moodle to teach science modules for formal curriculum; and less attention is paid to the informal curriculum.

Last, Khoza and Mpungose (2017) utilise a critical paradigm to “Explore the psychological spaces used by academics in the assessment of postgraduate theses or dissertations supported by Turnitin at a South Africa university”. This study notes that academics’ use of Turnitin was based on self-space with less intention on societal and professional spaces. Therefore, the study tries to bring about balance and alignment between the three spaces that academic should utilise. The aim was to transform academics.

4.3.4 Disadvantages of the critical paradigm

The critical paradigm has been criticised by scholars, including prominent scholars on educational research such as Cohen et al. (2001) and Guba et al. (1994). The critical paradigm is seen as a paradigm that carries the political agenda of the researcher, which is contrary to the aims of conducting research. Further to that, the researcher is seen as the only individual who has a say over the others, which may result in the researcher gaining less understanding of the knowledge and experiences of participants (Kemmis, 1982). In most cases, there is confusion between phenomenological research study and qualitative research, and the lack of understanding results offers doubts about the study itself. Moreover, researchers who undergo phenomenological research study often lack sufficient training, which means that they are likely to have more weakness on methodology, in particular. Last,
phenomenological research study is time consuming; the lack of sufficient time is among the challenges which interrupt effective phenomenological research study to gain the required results (Cohen et al., 2001). Morrison (1995a) argues that one major challenge with the critical paradigm is that this paradigm claims to empower and to transform, yet no empirical test concurs with this claim. On the same sentiment, Morrison (1995) acknowledges that one may be empowered by ideology or action which is an empirical method. Cohen et al. (2011) asked: Is the critical paradigm and phenomenological research study genuinely empowering and emancipatory? If so, where is the evidence?

4.3.5 Overcoming challenges of critical paradigms in this study

Wellington (2015) offers possible solutions in cases such as the ones identified in the above paragraph. To overcome challenges identified by Cohen et al. (2001) on critical paradigm, as a researcher, I acted neutrally: I did not take any side on the views and inputs of the participants. Additionally, in phenomenological research study, a researcher must understand the role; a researcher must interact with the participants in such a way that will allow him or her to learn from other participants. In this case, I am not merely a researcher: I also hold the role of being a teacher who teaches geography that involves or includes technological aspects. As a teacher and researcher I do not know everything. Therefore, I also need to learn and to transform my practice. On the challenge of time mentioned above, in order to save time for both participants and for myself, I planned the meetings and remained organised. A systematic approach was used for all aspects, to save time. On the challenge of objectivity, it is important to understand values and beliefs that underpin this study, acting accordingly to achieve results (Wellington, 2015). To better understand the results of this study, the researcher employed a qualitative method, which is aligned with the critical paradigm. On the last question from the above paragraph by Cohen et al. (2011), which focuses on the evidence of the critical paradigm empowering people, a qualitative study conducted by Zuma (2016) uses the critical paradigm and phenomenological research study findings. Findings indicate that geography teachers were transformed in their methods of teaching GIS, and also in their understanding of the curricular concepts. Also, a qualitative study conducted by Mpungose (2015) utilising the critical paradigm and phenomenological research study findings, indicate that physical science teachers were empowered; they gained knowledge unknown of before the study. These studies indicate that a critical paradigm does produce evidence of teacher development.
4.4 RESEARCH APPROACH OR STYLE: QUALITATIVE APPROACH

4.4.1 What is a qualitative approach?

Cohen et al. (2011) describe qualitative research as an approach that provides in-depth understanding of the phenomenon (experiences) when the researcher has understanding, of questions such as ‘how’ and ‘why’ fully answered. This includes understanding how things are in the way(s) they are. Similarly, Hancock (2002) describes qualitative study as an approach that is concerned with explaining and developing an understanding of social issues that we use to shape our understanding of the world, questioning why things are the way they are. In a qualitative study, people create their own meanings of the phenomenon. The researcher must have a clear understanding of the context on which participants’ responses are based. The responses may be context-related, context-dependent, context-rich, and behaviour based. The researcher must understand that these are multiple realities, therefore gaining required data is important. Researchers must also be aware that there is a strong relationship between the knower and what is already known. Mertens (2014) further states that a qualitative study focuses on a variety of empirical materials such as case study, life history, personal experiences, interviews, introspection, cultural texts, artefacts, observations, and visual texts that define the problem being studied. Key concepts that formulate qualitative study include complexity, discovery, contextual knowledge exploration, and inductive logic (Mertens, 2014).

Krauss (2005) argues that qualitative research works on a different epistemology, which differs from quantitative research. In many qualitative studies, the researcher believes that one of the best ways of understanding the phenomenon is through understanding the context, rather than quantifying it, which is viewed as limiting its nature. The focus is on examining small portions that will provide an important sample of reality on the phenomenon. From epistemology, the qualitative study has its own ontology. The ontological assumption of qualitative research is that there is no single reality. Since we, as individuals, have different experiences, each of us has differing views of reality or the phenomenon (Krauss, 2005). Krauss (2005) cautioned researchers that conducting research without understanding this ontological assumption of the qualitative research may result in the questioning of the validity of the research. The researcher must acknowledge that every person is unique, including the researcher, who has personal experiences and biases about the phenomena.
4.4.2 Advantages of employing a qualitative approach in this study

Mertens (2014) identifies these two major possible reasons for a researcher to utilise a qualitative method in viewing the world. First, it accommodates a constructivist view, in which perspectives such as phenomenological research study, critical theory, participatory, and feminist theory are used to transform people or society. These transformative paradigms believe that reality is socially constructed, and that reality is not absolute. Reality depends on time and context. As a result, they choose qualitative methods in order for them to gain an understanding of the constructed knowledge of the people living in that context. Second, it allows the researcher to build trust in the members of the community where the study will be conducted. The qualitative study becomes relevant in this case because a researcher wishes to understand individual or group behaviour in the community. A qualitative method is useful when the researcher wishes to capture particular natures or experiences. Lecturers’ experiences may be informed by either self-experience, shared-experience, and/or specialised-experience. Interestingly, Yin (2013) notes that the significance of a qualitative approach is that participants are the holders of primary data – the researcher is likely to provide data analysis that is trustworthy. More importantly, Choy (2014), and Ramrathan (2017) acknowledge that, in a qualitative study, a theoretical framework and research concepts are produced from the literature review. Themes emerge from the concepts when the researcher is analysing data. In this study, concepts of the curricular spider-web were generated from the literature review. Also, themes on the data analysis were generated from these concepts, which provided a simple and very informative data analysis.

This study embraces these characteristics of qualitative research. The aim was to have a clear understanding of the phenomenon – human behaviour which is coupled with the social context. Knowing that there are many realities out there assisted the researcher to carefully generate relevant data regarding the phenomenon (Creswell, 2012). The rationale behind utilization of a qualitative approach was the values that this approach upholds, which is the in-depth information and depth of understanding of the phenomena. The in-depth information will be obtained from lecturers’ actions, attitudes, and their behaviour apropos of the phenomenon. While I was observing as a researcher, participants were given time to participate and their remarks were carefully noted. These in-depth responses enabled me to have ample data to classify participants’ belonging, for instance: self, shared, and specialised-experiences. The utilization of a qualitative approach enabled me to respond to the three critical research questions identified at the beginning of this chapter.
Furthermore, in this study, a qualitative approach had to be used since the focus was on defining human behaviour in relation to their teaching of geography using Moodle. Cohen et al. (2011) describe a qualitative method/approach as a method that provides clear understanding of ‘how’ and ‘why’. This includes the process of understanding how things are the way they are. These questions underlined by Cohen et al. (2011) have been identified as the critical research questions. This study has its own questions that will allow the researcher to understand lecturers’ experiences. These questions are: How do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university? Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university? Which lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university?

4.4.3 Disadvantages of employing a qualitative approach in this study
While we employ a qualitative approach in our research, this does not mean there are no limitations. The qualitative approach is not easily understood by researchers, particularly in the scientific world, because it focuses on the textual data rather than scientific methods (Creswell & Poth, 2017). In this study, this is not a challenge, however, because geography content is divided into two, the first half being textual content which connected well with geography lecturers in this study. Second, is scientific content, which also connected with geography lecturers. Paley (2007) cautions researchers who employ a qualitative approach, stating that in data generation of a qualitative study, participants are likely to respond in ways that a researcher wishes to hear. Paley (2007) further notes that it is important to know and understand how people interpret what happens to them or their actions. In consideration of Paley (2007), more than one method of generating data was used. This being an phenomenological research study, I therefore had to first understand the lecturers’ experiences. Even though I am engaging in the process of educating, as a researcher, I must also be willing to learn from others. Nevertheless, the qualitative method has the potential of providing data that is credible and trustworthy. Apart from employing the qualitative approach, a phenomenological research study is also employed to further strengthen this study and to provide change where necessary.
Five Approaches to a Qualitative Study Research

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Narrative Research</th>
<th>Phenomenology Research</th>
<th>Grounded Theory Research</th>
<th>Ethnography Research</th>
<th>Case Study Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus</strong></td>
<td>Exploring the life of the individual</td>
<td>Understanding the essence of</td>
<td>Developing a theory based on</td>
<td>Describing and interpreting</td>
<td>Developing an in-depth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experience</td>
<td>data</td>
<td>culture</td>
<td>description and analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of a case or multiple</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cases</td>
</tr>
<tr>
<td><strong>Type of Problem best for Design</strong></td>
<td>Needing to tell stories of individual experiences</td>
<td>Needing to describe the essence of a lived phenomenon</td>
<td>Grounding a theory in the views of participants</td>
<td>Describing and interpreting the shared patterns of culture of a group</td>
<td>Providing an in-depth understanding of a case or cases</td>
</tr>
<tr>
<td><strong>Data Collection</strong></td>
<td>Using primarily interviews and documents</td>
<td>Using primarily interviews with individuals, documents, observations and art</td>
<td>Conducting interviews with 20-60 individuals</td>
<td>Making observations and giving interviews</td>
<td>Making observations, conducting interviews, interpreting documents and artefacts</td>
</tr>
<tr>
<td><strong>Data Analysis</strong></td>
<td>‘Restoring’ developed themes in chronological order</td>
<td>Making significant statements, meaning unites contextual and structural description of ‘essence’</td>
<td>Analysing data through open coding</td>
<td>Analysing data through description of culture-sharing and themes</td>
<td>Analysing data through description of cases and themes and cross-cases</td>
</tr>
<tr>
<td><strong>Written Report</strong></td>
<td>Developing a narrative about the stories of an individual’s life</td>
<td>Describing the ‘essence’ of the experience</td>
<td>Generating a theory</td>
<td>Describing how culture-sharing groups work</td>
<td>Developing a detailed analysis of one or more cases</td>
</tr>
</tbody>
</table>

(Creswell & Poth, 2017)
4.5 Definition of a Phenomenological Research Study

4.5.1 What is phenomenological research?

From the above five approaches to a qualitative research study, this study opts for a phenomenological research study because the central idea in this study is to study lecturers’ experiences. Creswell and Poth (2017) and Cohen, et al. (2007) describe a phenomenological study as a study describing meaning for several individuals of their lived experiences of a concept. Phenomenologists describe what all participants have in common as they experience a phenomenon. The aim is to reduce individual experience to a universal essence (van Manen, 1990). Similarly, Creswell, Ebersohn, Eloff, Ferreira, Ivankova, Jansen and Van der Westhuizen (2010) note that a phenomenological study focuses on the meaning based on experiences held by participants able to provide comprehensive descriptions. Van Manen (2014, P. 27) states that phenomenological research is beginning “with wonder at what gives itself and how something gives itself”. Mickunas (1990) and Cohen (2007) state that phenomenological research must display the following characteristics of their philosophical viewpoint: a return to the traditional tasks of philosophy: philosophy without presuppositions.

4.5.2 Types of Phenomenology

van Manen (1990, p.4) identifies two approaches to phenomenology, namely, hermeneutic phenomenology, and empirical, transcendental/psychological phenomenology. Husserl is regarded as the introducer of phenomenology into research. Husserl was interested in the foundation of science and questioned the commonsense assumptions of everyday life. He further wished to find out how things appear directly to us rather than through the media of culture and symbolic structure (Cohen, et al. 2007). Contrarily, Schutz was concerned with understanding the structure of the world of everyday life. Cohen (2007) argue that meaning can be accounted for by means of reflexivity. Meaning is reflexivity, depending on people’s identification of the purpose or goals they seek. People learn from social contexts which differ from situation to situation and from location to location (Cohen, et al. 2007). In short, hermeneutical phenomenology is oriented towards lived experience. Transcendental or psychological phenomenology is based on the interpretations of the researcher on a description of the experiences of participants.
4.5.3 Procedures for conducting phenomenological research
First is to examine whether the research problem requires the use of a phenomenological approach. The research problem must be about understanding several individuals’ common or shared experiences of a phenomenon. This is for developing a deeper understanding about the phenomenon. Second is the phenomenon of interest to study. Third, the researcher recognises and specifies the broad philosophical assumptions of phenomenology. Fourth, data must be collected from the individuals who have experienced the phenomenon. In the collection of data, the researcher must use observations, journals, poetry, music and art. Fifth, the researcher develops clusters of meaning from these significant statements, placing them into themes. Last, from the structural and textural descriptions, the researcher writes a composite description that presents the ‘essence’ of the phenomenon. (Creswell et al, 2017, Cohen, et al. 2007, & van Manen, 1990).

4.5.4 Disadvantages of a phenomenological research
According to Creswell et al. (2017), a phenomenological research approach to analysing the data helps provide a structured approach. For novice researchers, this may be a challenge in generating more relevant data, the phenomenological research requiring broader understanding of phenomenological assumptions. This research requires participants with broader experience of the phenomenon. For a researcher, particularly a novice, it is difficult to identify broader experience. It is also difficult for researcher to move out of text, because it is impossible to suspend the researcher’s understanding of the phenomenon, as van Manen (1990) indicates. Creswell et al. (2017) suggests that a researcher must decide how and in what way his or her personal understanding will be introduced into the study.

4.6 Sampling for this Study
Cohen et al. (2011) describe sampling as one of the most important elements in research, in which a researcher should determine sampling methods during the planning phase before actually conducting the research. Cohen et al. (2011) advise researchers to be aware of these factors when deciding on the sampling: time factor, expenses, and accessibility. In most cases these factors limit researchers from generating relevant and sufficient data from appropriate people. Hence it is more advisable to have a small group of people. Data gained from that group could represent a large group of people. However, this depends on the paradigm of the study. Furthermore, Cohen and Holliday (2006) categorise sampling into two major groups. First there is probability or random sampling. This type of sampling is based on a wide
Although this population is wide, the researcher still has the responsibility of providing equal chances to participants. The second sampling type is purposive or non-probability sampling. This type of sampling is based on a few groups of the population selected from the wider population, some people in the wider population being excluded. Purposive sampling is a qualitative method of study (Cohen et al., 2013). This study utilises purposive and convenience sampling which fall under non-probability sampling.

4.6.1 Purposive sampling
Purposive sampling is one of the characteristics of qualitative research. At this point, the researcher is expected to decide on sampling based on the kind of participants that should be used for the study. The researcher judges the sample based on the specific results he or she wishes to achieve from the study. Hence, as the name suggests, purposive sampling is conducted for a particular purpose. The aim of purposive sampling is to elicit relevant people who are knowledgeable on the topic to provide the desired information (Cohen et al., 2011). Purposive sampling is employed when the researcher seeks in-depth knowledge on a particular subject. Similarly, Maree (2007) describes purposive sampling as a method of selecting participants based on the same significant characteristics which make them unique from other people, and holding exclusive information required by the researcher. Furthermore, Frankel and Wallen (2003) note that purposive sampling requires the choice of a researcher to make judgement whether the sample size of participants is sufficient, based on the required data. This study uses four geography lecturers as participants, all teaching at one university in South Africa. Lecturers were selected on the basis that they hold relevant and required data for this study.

4.6.2 Advantages of purposive sampling in this study
Cohen et al. (2011) state that the name purposive suggests “purposing”, meaning that the participants have been selected for a particular purpose. This sampling is amongst the boosted sampling researchers prefer to utilise, because they are able to manage the number of participants. More importantly, purposive sampling enables the researcher to select participants for the purpose of social inclusion, wherein people are represented based on issues of power, gender, race, inter alia. In the study, a group of geography lecturers was selected from one of the South African universities because this study focuses on the lecturers’ experiences. These lecturers were selected because they might indicate the most distinct data relevant for this study. Purposive sampling will allow other lecturers who are not
part of this study to learn from their colleagues, this being an action-research study with a high potential of educating others who need development. Cohen et al. (2011) state that purposive sampling is intended to elicit knowledgeable participants in a particular context. Above all, in this study, the required participants were purposively selected in order to fully achieve the objectives of this study. This sampling is used in a small-scale research, in which there are few participants, and this makes the study less complicated.

4.6.3 Disadvantages of purposive sampling
Cohen et al. (2011) note that, amongst the disadvantages of purposive sampling, is that it involves a small number of participants, which has the potential of misrepresenting others. Similarly, Onwuegbuzie and Leech (2007) state that purposive sampling is biased because the choice of the participants is based on what the researcher wants. This suggests that purposive sampling has the potential to provide questionable findings. Another disadvantage of purposive sampling is that the sample selected might not represent a true experience of the wider population – this allows the researcher to have a greater influence on the results of the study (Etikan, Musa & Alkassim, 2016).

4.6.4 Overcoming disadvantages of purposive sampling
Several scholars pinpoint the issues of bias in purposive sampling (Cohen et al., 2011; Onwuegbuzie & Leech 2007; Etikan, Musa, & Alkassim, 2016). In this study, bias was not an issue, because the study sought to transform geography lecturers. The critical paradigm and phenomenological research study is aimed at emancipating a particular group of people. In this case, some geography lecturers do not understand Moodle, and some do not understand the curricular benchmarks. Therefore, the responsibility of this study is to mend that misunderstanding/misinterpretation, educating geography lecturers. The agenda of this study was well-defined from the start. This study is biased by nature. Nonetheless, relevant geography lecturers who hold required data based on their experiences are the participants in this study. Several methods of generating data were utilised, namely, reflective activity, artefacts, and one-on-one semi-structured interviews. The following table indicates the details of the participants, reflecting participants’ qualifications, module taught, gender, race, and age, all of which were considered.
Table 4.2: Participants’ Details

<table>
<thead>
<tr>
<th>Participant</th>
<th>Highest Qualification</th>
<th>Module Teaching</th>
<th>Gender</th>
<th>Race</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Master’s Geography</td>
<td>Female</td>
<td>A</td>
<td>25-35</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Master’s Geography</td>
<td>Female</td>
<td>A</td>
<td>25-35</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>PhD Geography</td>
<td>Male</td>
<td>A</td>
<td>35-45</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>PhD Geography</td>
<td>Male</td>
<td>A</td>
<td>35-45</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>PhD Geography</td>
<td>Male</td>
<td>A</td>
<td>35-45</td>
<td></td>
</tr>
</tbody>
</table>

4.7 Convenience Sampling

Cohen et al. (2007) describe convenience sampling as “something accidental or opportunity sampling”, in which a researcher chooses participants because they are close and available for the research project. In this study, participants were chosen because it was convenient to generate data from them. The university where this study is conducted is close to my place of work. A researcher, I am also a geography teacher, therefore understanding of the subject matter was not difficult. Apart from that, participants were the same lecturers I was with as classmates during my junior degree: they were convenient for me. Cohen et al. (2007) further note that the purpose of convenience sampling is to have a group that will produce data, not to generalise the findings for the larger population. Even though convenience sampling is appropriate to most researchers, it can be biased. In this study, direct quotes are used in analysing data to prevent any form of bias. Janson (2002) states that convenience sampling may be used as a derogatory concept to define those who are participating in the study. At the same time, convenience sampling may be used to strengthen the validity and reliability of the study when properly documented.

4.7.1 Advantages of convenience sampling

Convenience sampling has an advantage to the researcher because the researcher can choose individuals that are nearby and fit the purpose (Cohen et al, 2007). This has enabled this study to acquire sufficient participants because they were closer to the researcher and easy to find for data generation. As Etikan and Alkassim (2016) note, convenience sampling has the advantage of attaining participants who are within the desired proximity which is convenient to the researcher. Part of the criteria for selecting participants was convenience, because these geography lecturers were known by the researcher and were closely accessible for data
generation. This made it easier to generate data without being influenced too much by the transport budget and the time-consuming processes.

4.7.2 Overcoming disadvantages of convenience sampling

However, convenience sampling might have a sampling error (Saunders et al., 2012). According to Cohen et al. (2007), an error does not necessarily mean oversight made during the sampling stage, but errors may occur through haphazard selection of participants, or there are certain characteristics displayed by participants which are not required by the researcher. To avoid errors in this study, I used both purposive and convenience sampling. This was done to select relevant participants who are geography lecturers. Even though I employed convenience sampling, certain criteria were followed, for instance: participants had to be geography lecturers; they had to lecture geography at postgraduate level; the study is recommended to have different age groups; participants had to be easily accessible; and finally, they had to participate voluntarily.

4.7.3 Finding participants for this study

Finding participants for this study was not easy, since this is an phenomenological research study; meaning the fundamental aim is for participants to be transformed in their practice after participating in this study. TRANSFORMED participants will gain knowledge around issues of experiences. For these reasons, it was important for participants to willingly participate and be aware of the gain afforded by this study, which is empowerment as geography lecturers. Five university lecturers were identified to participate in this study. I met the first participant and told her that I wished her to be part of my study. She was eager see my proposal first before committing herself to participate. Thereafter, I sent her an email for an appointment, and we met. I presented the study to her, and answered all her questions. She agreed to be part of this study. What made her eager to participate is that she had read my Master’s thesis about GIS in secondary schools; she is also currently researching GIS for her doctoral thesis. Furthermore, she needed me to participate in her own study. She also needed me to assist her to find subject advisors, relevant schools, teachers, and learners for her study: I am still based in secondary school, while she is based at a university.

The second participant was very interested in being part of this study. She responded instantly to my request through email and declared her availability before I even presented my study to her. We were unaware that we knew each other because we were communicating
via email. We were surprised to realise that we had been classmates during our undergraduate period. Her willingness to participate in the study was genuine: from this I was able to deduce that she is interested in Moodle.

The third participant was reluctant to participate in the study. Her excuse was that she was not going to have enough time because she is occupied by university work. She stated that she has many responsibilities even after work, so she was unwilling to commit. She then wished to know who my supervisor was. Once she knew this, she availed herself, but time was still a problem. I then assumed that she only agreed to participate because she was fond of my supervisor.

The fourth participant was not willing to participate, because, after sending him an email requesting an appointment, with the details of the study, he only read the study topic and said he does not regularly use Moodle. I tried to convince him by telling him that using it or not is not important because we will engage in a process of educating one another. The fact that he does not use it while the university has made Moodle an official policy is significant to my study. This attitude will strengthen this study because it shows that there are contradictions between lecturers and university policies. He then refused completely. I had to find another participant who was a female: she agreed to participate. Surprisingly, only females were interested in participating in the study.

4.8 Data-generation Methods
Csikszentmihalyi (2011) and Cohen et al. (2013) note that any research is about data generation and that data must able to answer research questions. Data generation is the key element of research and must be aligned with research questions. Graig (2009) describes data generation as methods that are clearly stipulated and followed when gathering data. Ramrthan (2017) states that understanding of the phenomenon for the study depends heavily on engaging participants for data generation. In this study, three methods are utilised to generate data, namely, reflective activity, semi-structured interviews, and artefacts. These methods have been identified because they were capable of obtaining relevant data for this study. For instance, reflective activity is aligned with specialised experience; artefacts are aligned with shared-experience, and one-on-one semi-structured interviews are aligned with self-experience. Phenomenological research study that I conducted had four stages in Phase One,
and three stages in Phase Two; questions for all three methods and their phases were based on curriculum benchmarks.

4.8.1 Reflective activity (open-ended questionnaire)

According to Barkie (2007), reflective activity is a process that includes open-ended questionnaires that permit participants or respondents to use their own words to respond to the question. Hall (1996) notes that reflective activities are important because they are emancipatory, and based on building the knowledge of the participants. Furthermore, data from the reflective activity is authentic, since participants reflect on their own experiences. Last, the reflective activity upholds the principles of democracy; participants are free to respond. In this study questionnaires were crafted based on the objectives of the study and the concepts of curriculum which are forming the conceptual framework. Cohen et al. (2007) state that open-ended questionnaires are useful because participants are allowed to respond as much as they wish. This allows the researcher the ability to investigate complex issues. Mpungose (2017), Nkohla (2016), Makumane (2018), and Zuma (2016), in their qualitative studies which incorporate phenomenological research study, utilise reflective activity to generate data. From these studies, reflective activity has been instrumental in transforming participants, because practitioners are required to reflect on their own previous practice in order to change their future practices. A qualitative study utilises phenomenological research study, in which the focus is on transforming practitioners, reflective activity being among the best methods of generating data.

By the same argument, Cohen et al. (2007) cautions researchers on the disadvantages of questionnaires. Participants or respondents are likely to overlook or misinterpret questions. This may occur when the participant is occupied with too many questions to respond to in writing. Apart from that, responding to a questionnaire that has open-ended questions takes more time than responding on a document, on which you tick or cross the answer. At this level, participants are given the opportunity of responding to the questions, which involves telling a story on their experiences of using Moodle when teaching geography. The rationale for this is to gain lecturers’ understanding of Moodle. Lecturers were encouraged to write in simple and plain English. This was done to circumvent misinterpretations of the responses and questions. Reflective questions frame the concepts of the curricular spider-web: Van den Akker (2009) describes the concepts as follows:
Table 4.3: Curricular Benchmarks, Propositions, and Proposed Questions (Khoza, 2015)

<table>
<thead>
<tr>
<th>Curriculum Benchmarks</th>
<th>Propositions</th>
<th>Proposed Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teaching Targets</td>
<td>Aims: Self-experience</td>
<td>What are your targets when teaching geography using Moodle?</td>
</tr>
<tr>
<td></td>
<td>Objectives: Specialised-experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outcomes: Shared-experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Resources</td>
<td>Software resources</td>
<td>Which resources are you using to teach geography using Moodle?</td>
</tr>
<tr>
<td></td>
<td>Hardware resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ideological-ware resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Content</td>
<td>Content knowledge, content expertise &amp; curriculum knowledge</td>
<td>What content you are teaching?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Pedagogic approaches/lecturer’s role</td>
<td>Student-centred role &amp; lecturer-centred role</td>
<td>What approach do you utilise when teaching geography using Moodle?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Tasks</td>
<td>Informal tasks &amp; formal tasks</td>
<td>What type of geography task do you give to students?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Teaching &amp; learning space</td>
<td>Computer room &amp; lecturers’ room</td>
<td>In what kind of environment is teaching and learning taking place?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. Teaching & learning time

- Hours, days, weeks, & semester

When is the teaching of geography taking place?

---

8. Assessment

- Formative assessment, peer assessment, & summative assessment

How do you assess students using Moodle?

---

9. Accessibility

- Community financial support
- Physical support

How do you gain access to the teaching of geography students?

---

The following are examples of the anticipated responses from the participants, relating the questions above.

**4.8.1.1 Why are you teaching geography using Moodle? (Targets/rationale)**

Lecturers are expected to understand three levels of experiences (self, specialised, and shared-experiences) when reflecting on their activities. Furthermore, they are expected to be able to bring understanding of the alignment between self-experience and aims, specialised-experiences and objectives, shared-experience and outcomes. With the module aims and self-experience: at this level lecturers are to reflect on their personal experiences in teaching of geography using Moodle. On the specialised-experiences and objectives, lecturers are expected to reflect on their content and the policy that governs the university in relation to the geography module. Finally, shared-experiences and outcomes: at this level lecturers are to reflect on the needs of the community when teaching geography.

**4.8.1.2 Which resources are you using to teach geography on Moodle? (Resources)**

Lecturers are expected to respond on three types of resources: software, hardware, and ideological-ware resources. They should not only respond to these three categories of resources but also demonstrate understanding and the alignment between resources and the three categories of experiences. For instance; software resources are aligned with self-
experience, hardware resources are aligned with shared-experience, and ideological-ware resources are aligned with specialised experience.

4.8.1.3 What are you teaching? (Content)
Lecturers are expected to reflect on their understanding of the content and micro-curriculum. This means they must understand their role as module experts in terms of the content knowledge, content expert, and retainer of curriculum knowledge. Further, geography lecturers are to demonstrate alignment between content expertise and self-experience; in which the content taught to students is encouraging individual identity. Content knowledge comes with specialised-experience; in which the content knowledge of the lecturer is informed by the policy guidelines and module content. Last, curriculum knowledge and shared-experience; is based on the content that addresses the needs of the community or society

4.8.1.4 What approach do deploy to teach geography using Moodle? (Lecturer’s role)
Lecturers are expected to have a clear understanding of the roles in teaching of geography using Moodle. The lecturer’s role is based on teaching approaches, two that are common: lecturer-centred and student-centred. Furthermore, they must understand the three levels of experiences in relation to these propositions. Lecturer-based learning is aligned with specialised experience; in which the lecturer is expected to deliver the content, based on the time frames and on the objectives of the module. On the other hand, student-based learning is aligned with self-experience; in which the needs of the student are at the core of learning. The lecturer’s engagement with students is to allow students to be actively involved in the lesson.

4.8.1.5 What type of geography task do you give to your students? (Tasks)
Lecturers are expected to respond on the two techniques of assessing tasks given to students, which are formal and informal tasks. They must demonstrate understanding of the two methods in relation to experiences. For instance, informal tasks are aligned with self- or shared-experiences, formal tasks are aligned with specialised-experiences. Informal tasks are practised during the process of teaching and learning. This includes tasks in the class, homework, and class demonstrations and class discussions; while formal tasks include projects and controlled tests. These are tasks conducted at the end of teaching and learning.
4.8.1.6 Where is the teaching of geography taking place? (Teaching environment)
Lecturers are expected to describe the teaching place or environment at which the teaching and learning of geography using Moodle takes place. Is the environment suitable for the teaching of geography using Moodle? If not, to what extent can it be improved to accommodate the needs of the module/specialization, of the teacher/student/self, and of the community/shared?

4.8.1.7 When is the teaching of Geography using Moodle taking place? (Time)
Lecturers are expected to describe times, hours, days, weeks during which they teach geography using Moodle. Time includes lecturers’ timetables to which they teach. This should be aligned with the module policy in terms of time allocation for the teaching of geography.

4.8.1.8 How do you assess students? (Assessment)
Lecturers are expected to display understanding of three types of assessments: formative, continuous, and summative assessment. Moreover, they need to understand these assessment types and also be able to align them with the three types of experience. Formative assessment is aligned with self-experience; this assessment focuses on students’ needs. Continuous assessment aligns with shared-experience; this assessment focuses on the needs of the community. Last, summative assessment aligns with specialised-experience; this focuses on the module content or the needs of the module.

4.8.1.9 How do you gain access to the teaching of geography students? (Accessibility)
Lecturers are expected to respond on the issues of support which includes physical access, where we focus on whether students and lecturers have physical access to the teaching and learning of geography using Moodle. Second, is financial access, considering whether there are any financial barriers that affect the teaching of geography using Moodle. Last come the issues of culture, bearing in mind that there may be cultural practices that set up barriers to the teaching of geography using Moodle.

4.8.2 One-on-one semi-structured interviews
After the lecturers have completed the reflective activities, one-on-one semi-structured interviews follow. According to Morse and Richard (2002), semi-structured interviews are
characterised by open-ended questions. Such questions are prepared by the researcher in advance to generate organised data, and are designed for a researcher to probe for further information and clarity. Haralambos (1985) further elaborates that semi-structured interviews are more relevant when a researcher wants to find information on opinions and attitudes from the participants. In this study, the objectives are: first, to identify lecturers’ experiences of using Moodle in teaching geography. Second, to explain the reasons for lecturers reflecting in a particular way on the use of Moodle in teaching geography. Finally is to understand the lessons learnt from lecturers’ experiences of using Moodle in teaching geography. These objectives are to be achieved when the researcher utilises semi-structured interviews to generate in-depth information.

Kumar (2005) states that one of the most important strengths of utilising semi-structured interviews in research is that semi-structured interviews provide in-depth information about the research topic from the participants. Second is that participants respond with freedom and with no limits in the questions asked them. Similarly, Bell (1993) states that the strength of interviews is ‘adaptability.’ This is when the researcher makes follow-up questions on the responses of the participants. This moves beyond the limitations of questionnaires. The researcher is able to probe at this level which includes clarifying questions and further developing responses. This goes beyond the questionnaires where responses are likely to be taken at face value. Participants are not limited to any question and no specific answers are required. At the same time, participants are free to ask any questions related to the research. This results in the researcher generating rich data for his or her research; and the findings of the study are likely to be trustworthy. In this study, open-ended questions were more appropriate for achieving the objectives of this study. However, in the actual application of one-on-one semi-structured interviews, I probed lecturers at the end of their statements and avoided interrupting the participants’ flow when they were responding. Although they responded with freedom and with no limit, I had to guide them to respond to the questions because of the time constraints, so as to limit irrelevant data.

Although open-ended questions are appropriate for this study, as a researcher, was aware of the weakness of the method; this is important in order to curb challenges that may come with this method of data generation. According to Kumar (2005), the weakness of utilising semi-structured interviews in research as one of the methods for data generation is that it is not easy to analyse data from these questions. Another weakness of semi-structured interviews is
that they can lead to misinterpretation, which suggests that a researcher is likely to be biased during data interpretation. This is an phenomenological research study and as such, being biased is possible. The fact that I will be teaching and engaging with lecturers at the end of Phase One of the phenomenological research study, means that lecturers will be provided with a particular knowledge each one is lacking.

Hatch (2002, p.160) provides clear guidelines for conducting and shaping semi-structured interviews. These guidelines include that questions asked to the participants be open-ended, which provides freedom to the respondent; and this prohibits the researcher from imposing responses on the participants. Another guideline is that questions asked to the participants be as clear as possible; this is done to avoid misinterpretation and misunderstanding of the question that may lead to inappropriate answers not intended to be provided by the participants. Last, is that questions should be phrased such that they embrace and respect the subject knowledge (Hatch, 2002). Interview questions were designed similarly to the reflective activity; and the interviews were limited to one hour per lecturer. Audio-taping of participants was utilised after which those interviews were transcribed. All interviews were conducted at the university at which this study is conducted and where the four geography lecturers teach.

4.8.3 Artefacts
Artefacts are methods of data generation that have been used from the 18th century until today. Artefacts have been used by historians, anthropologists, and others in the field of research. The word “artefact” is derived from two Latin words, the first four letters arte meaning skill. The second part of the word is a past participle of facere which means to make. Artefacts are created by humans to convey a particular message for a particular period (Friedman, 2007, Smith, 2007). Smith (2000, p. 3) further interprets artefacts as “objectified human knowledge and practice”. Cohen et al. (2011) describe artefacts as one of the ways of conveying messages used in research, for example; use of objects that are designed to tell a story, equipment, pictures, maps, etc.

4.8.3.1 Strengths of artefacts in this study
According to Cohen (2011), artefacts have the potential of instantly giving a researcher a clear message about the topic, easy to observe, at the same time easy to interpret. Artefacts may be seen, observed, smelled, or touched, therefore these senses allow the researcher to
easily interpret and analyse artefacts. A researcher can readily stimulate or probe participants when using artefacts. Both participant and researcher may use artefacts to generate information. Artefacts are therefore relevant for phenomenological research study. Artefacts are used to display feelings and experiences on a particular subject matter. Therefore, a researcher must understand why artefacts have been used to generate data (Cohen et al, 2013). Artefact use depends on a researcher’s research questions, in which the researcher decides whether to use existing artefacts to generate data from participants, or whether participants will provide artefacts. When using these methods, a researcher needs to be fair, in order to justify the use of artefacts; and be honest about the multiple interpretations of artefacts that may follow (Cohen et al., 2011).

In this study, geography lecturers were provided with reflective activities to respond to the questions identified in the table above, then from there lecturers were provided with spaces on both pages on which they had to illustrate their individual thinking or ideas and experiences of Moodle in geography as either good or bad practice. Lecturers were also provided with spaces below the artefact illustrations in which they had to explain the meaning of a particular illustration. This was done to avoid misinterpretation of images, maps, etc. The purpose of artefacts in this study, first, was to generate data in a time-saving way. Second, it was to move beyond the data that is generated based on interviews and reflective activity. A method was used that will enable the participant to utilise their creative skills to demonstrate their world around the phenomenon. This assists the researcher to have a clear understanding or picture of how the lecturers depict Moodle.

**4.8.3.2 Disadvantages of artefacts**

According to Cohen et al. (2011), even though artefacts are one of the best methods of generating data in qualitative study, they are sometimes difficult to interpret. They may tell a story or send a message that is different when presented through the eyes of the researcher. They further display what is done but do not provide reasons for it being done. The reasons rest with the researcher. When the researcher interferes or modifies the images this may result in reality discrepancies. In this study, the researcher provides participants with a clear direction to interpret their drawings or pictures after drawing them, to avoid discrepancies. It is of paramount importance for a researcher to use artefacts in conjunction with complementary methods of data generation. In this study, the researcher used two methods of
data generation in addition to artefacts: reflective activity, and one-on-one semi-structured interviews.

### 4.8.3.3 Overcoming disadvantages of artefacts

Since artefacts are difficult to interpret, I gave participants the opportunity to describe Moodle in illustration format. From there, lecturers were asked to interpret their illustrations in writing and during the interview session. The interpretation was both descriptive and verbal. This was done to avoid misinterpretation of artefacts. Furthermore, geography lecturers were given clear instructions, which were to demonstrate Moodle as good practice and Moodle as bad practice. The rationale behind utilization of artefacts is that I sought insight from geography lecturers. To strengthen data from artefacts, other methods of data generation were utilised (reflective activity and one-on-one semi-structured interviews). Cohen et al. (2011) advises that artefacts may be properly used with other methods of data generation. However, some participants were not aware of what artefacts are, and what was expected from them in dealing with the artefacts. When I spoke of artefacts, I had to explain their meaning, at the same time, being careful not to influence the responses about Moodle. This study did not transform lecturers on experiences about Moodle and geography only, but also on research as whole. Most of the lecturers had not been exposed to the practice of phenomenological research study; they only understood it in theory.

### 4.9 Data Analysis

McKernan (1998) describes data analysis as a way of analysing data in which the researcher actively takes a neutral position when viewing and deducing concepts which are the framework for understanding the entire research. Yin (2003) states that, when analysing data in a qualitative study, there are five ways that may be used by a researcher. These include: observe the pattern of data; integrate data with propositions if propositions were used; have logical building of data; consider time; and employ logic Models and synthesis. Yin (2003) further notes that propositions are modelling data. They keep the researcher focused and provide further explanations about the phenomenon. The aim of data analysis is to unpack the phenomena (experiences) and concepts (Christiansen et al., 2010). At this level of the study, data from the three methods of data generation is analysed, namely, reflective activity which produces data for specialised-experience; one-on-one semi-structured interviews, which
produces data for self-experience; and artefacts, which produce data for shared-experience. In a qualitative study, data analysis encompasses organising and explaining data, which means data analysis is about making meaning from the information obtained from the participants.

Qualitative data is not easy to interpret. A researcher needs to first find patterns and categorise data into themes, unlike in a quantitative study in which the researcher is analysing data using figures (Cohen et al., 2011). According to Cohen et al. (2013), qualitative data is generated from observation, interviews, video, audio, and film. While interviews are one of the most important methods of data generation, in a qualitative study, a researcher needs to be cautious when transcribing interviews in the process of analysing data. Furthermore, researchers in a qualitative study should use verbatim records at times; however, at times verbatim quotes are not used because they contribute to the time consumed during the process of interviewing and that of transcribing. Cohen et al. (2011) note that, in qualitative study, one of the best methods of analysing data is guided analysis. In this study, I use guided analysis to analyse data, not because of personal interest, but rather, because it enables me to fully answer research questions and enables me to frame data from shared-experience and specialised-experience. Furthermore, guided analysis enables this study to identify and close (through phases of phenomenological research study) the gap that existed in the self-experience.

4.9.1 The use of guided analysis in this study
Christiansen et al. (2010), Cohen et al. (2011), and McKernan (1998) describe guided analysis as a method of engaging with data with the aim of making judgements. Cohen et al. (2013) note that guided analysis involves inductive and deductive methods. Inductive data analysis occurs when a researcher categorises data to identify themes and patterns that emerge from the generated data. Christiansen et al. (2010) state that, with inductive methods, a researcher starts with generated data then determines patterns, and gaps, and formulates a hypothesis, developing informed conclusions or theories. In this study, inductive data analysis is informing shared-experience, since the focus is on generalization and theories. Data generated at this level is informed by the views of the community or society. As Christiansen et al. (2010) concur, at this level, categories of themes emerge from the data. This method is open: open-ended questionnaires are mostly utilised to generate data.
Furthermore, there is the deductive method. According to Christiansen et al. (2010) this method does not generalise; rather, it is specific, usually starting from the theory; thereafter specific categories are developed to specify data. The researcher identifies patterns, linking them. When utilising this method, the researcher starts placing categories, then data follows from the identified categories. This method is narrow and focused, hence deductive data analysis informs specialised-experience. Both these methods of guided analysis assist the researcher in gaining more knowledge about lecturers’ experiences when teaching geography using Moodle. In this study I first formulated categories in the form of concepts and propositions which were generated from the literature and named as curriculum benchmarks. I then identified the theoretical framework, which was the TPACK theory, which underpinned my study.

Furthermore, data from interviews were tape recorded, then transcribed. The rationale behind tape recording and transcribing was to ensure that data is not distorted; and it saves time for both myself and participants (Cohen et al., 2011). Data analysed was from the reflective activity, wherein I was able to first gain an understanding of lecturers’ experiences of using Moodle. Artefacts assisted me to have a deeper understanding of lecturers’ experiences, because they were able to display their feelings and emotions around Moodle. One-on-one semi-structured interviews enabled me to ask questions and seek clarity from the lecturers as well as observe their attitudes through facial expressions about Moodle. Data was coded and categorised into themes based on similar ideas (Cohen et al, 2011), while some themes were formed around the curriculum benchmarks and theory (deductive), and others emerged from the data (inductive). Themes were named according to their main ideas. The following themes emerged: teaching targets, resources, content, pedagogical approaches, tasks, teaching and learning space, teaching and learning time, assessment, and accessibility.

Last, according to Lincoln and Guba (1985), and Christiansen et al. (2010), data needs to be interpreted with clear and sound reasons; depending on the trustworthiness of the research. Therefore, before concluding with data, all the data should be considered. Also, in a critical paradigm, conclusion of data is informed by the theoretical framework (Christiansen et al., 2010). In this study, conclusions drawn were not based on myself being biased; but rather on what lecturers knew before and after the study. Since this was an action-research study, as a researcher, I automatically actively participated in the study. Further theoretical frameworks were used to draw conclusions from the data and new knowledge that the literature and
theories neglected was produced – that of self-experience as the foundation of understanding any curriculum benchmark.

4.9.2 Advantages and disadvantages of guided analysis
From the above description, guided analysis is composed of deductive and inductive methods. Both these methods address data that fully answers specialised experience (deductive) and shared-experience (inductive). Self-experience was missing from the method of analysing data. As a researcher I had to use my understanding of the phenomenon in order to make judgements on the data. Furthermore, these two methods of guided analysis do not cover all three types of curriculum; competence, pragmatic, and performance curriculum. These two only cover competence and performance curriculum. The pragmatic curriculum was not addressed during lecturers’ experience; and yet this study advocates a pragmatic curriculum as the area of attention. The following table simplifies Alignment between Experiences, Curriculum, and Data Analysis.

Table: 4.5: Alignment between Experiences, Curriculum, and Data Analysis

<table>
<thead>
<tr>
<th>Experiences</th>
<th>Shared-experience</th>
<th>Self-experience</th>
<th>Specialised-experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curricula</td>
<td>Competence curriculum</td>
<td>Pragmatic curriculum</td>
<td>Performance curriculum</td>
</tr>
<tr>
<td>Data Analysis (guided analysis)</td>
<td>Inductive data analysis</td>
<td>Gap</td>
<td>Deductive data analysis</td>
</tr>
</tbody>
</table>

(Generated from the literature)

Furthermore, the utilization of curriculum benchmarks helped me to categorise data simply into themes, enabling me to determine the level of experiences the data belongs to. This also allows me to easily determine emerging themes.

4.10 Ethical Issues
Leedy and Ormmond (2005) argue that, when investigating humans, ethical considerations are followed. To clearly embrace ethical issues in a research project, a researcher needs to understand these categories: protect participants from any harm, let them be aware of the
research through a consent form; ensure that they can exercise their right to privacy; and last, be honest.

4.10.1 Protection of participants from harm
According to Sarantakos (2005), harming participants in a research project may occur in three ways: physical harm, legal harm, and mental harm. Physical harm means physically abusing participants. Legal harm entails taking away the rights of the participants and as human beings. Mental harm includes harming participants emotionally. This may be in the way we communicate and by not using proper language that everyone is comfortable with. In this study, participants were not exposed to any kind of harm. Participants were made aware of their rights in this study and as a researcher I was obligated to protect participants from harm.

4.10.2 Consent letter
Participants were informed through consent letters, which they were asked to read and sign. Consent letters were clear about the research project, research topic, and the aim of the study which was to transform lecturers’ practice, and further educate lecturers about experiences (rationale) and curriculum benchmarks. Moreover, some of the most important points, such as the right to withdraw at any stage, were included (refer to Annexure D).

4.10.3 Right to privacy
From the first meeting that I held with the participants, I ensured that their right to privacy was the most important point of my introduction to them. Participants were made aware of their rights pertaining to their participation in this study. Participants were also told that, to ensure that their right to privacy was retained at all stages of this research, pseudonyms would be used, specifically, participant A, B, C, D, and E. Furthermore, participants were made aware that the outcomes of this study were for research purposes only, and for their personal development. Last, participants were made aware that data generated on this research project will be kept in a secure space, and be destroyed after five years. This is done in adherence to the university guidelines on ethics.
4.10.4 Honesty with participants

As indicated to the participants, findings are for the research project and are to be used for that purpose only. To ensure honesty, findings of this study were transcribed and presented in direct quote format. This was done to avoid misinterpretation and to acknowledge participants’ voices verbatim. Last, I was honest at all stages of this study. Participants were sent emails asking for an appointment; when I was granted the appointment, I presented my research topic, explained phenomenological research study, their role, and my expectations from participants. Before the actual process started, we embarked on creating a schedule that was professionally convenient for all participants.

4.11 Trustworthiness

According to Lincoln and Guba (1985), trustworthiness belongs in a qualitative study, in which research is expected to answer many questions in support of the arguments that arise with the findings. Trustworthiness is about proper interaction with data, identifying imaging topics, identifying raw data, triangulation, and finding patterns in the emerging data. Prominent scholars in the field of research note that the purpose of trustworthiness is to explain the phenomenon in a research project (Lincoln and Guba, 1985, Cohen et al, 2011, Leedy & Ormmond, 2005). Lincoln and Guba (1985) state that trustworthiness in a qualitative study entails dependability, confirmability, credibility, and transferability.

4.11.1 Dependability

Prominent scholars in research (Shenton, 2004, Trochim & Donnelly, 2007; Guba & Lincoln, 1994) describe dependability as the extent to which research projects can generate similar results or findings if the research project was conducted repeatedly in similar contexts, utilising the same research methods and the same type of participant. Shenton (2004) states that, in order to address dependability issues, a researcher needs to use data-generation methods that are overlapping, such as group interviews and one-on-one interviews. To confirm dependability in this study, I first started by formulating research objectives and questions which led me to purposive and convenience sampling of five geography lecturers because this was an phenomenological research study. From there I moved to data-generation methods which include; reflective activity, artefacts, and one-on-one semi-structured interviews. The interviews were tape-recorded and later transcribed. Thereafter, data was
analysed and I made necessary recommendations. Finally, great engagement with literature and theory strengthens findings of this study.

4.11.2 Confirmability
Several scholars, regard confirmability as a qualitative study concept that focuses on the objectivity of the research findings (Shenton, 2004; Trochim & Donnelly, 2007; Guba & Lincoln, 1994). Furthermore, confirmability is about the use of instruments of data generation that are not depending on humans. Shenton (2004) notes that, when addressing confirmability, the findings of the study need to indicate participants’ experiences and their ideas rather than being dominated by the voice of the researcher. In this study, I avoided bias by ensuring that voices of participants are interpreted and quoted verbatim. Furthermore, I took the transcripts to the participants for verification and confirmation. From there they went to the supervisor and the external auditor for proper writing of language and correcting errors.

4.11.3 Credibility
According to Shenton (2004, p. 64), credibility is about the question of, “How congruent are the findings in reality?” According to Guba and Lincoln (1994), credibility is one of the major ways of indicating trustworthiness in a research project. Shenton (2004) notes that credibility is about the elements that researchers should follow: The use of the correct research methods to yield results; the development of a bond with participants; random sampling; triangulation, honest information; interactive questioning; frequency debriefing; and peer scrutiny. Considering what Shenton (2004) states, I first ensured that I created an environment that is conducive to participants by the way I approached them, I made appointments for the presentation of my study and stated everyone’s role in the study. Because of my presentation to the majority of participants, they were eager to participate even before we started the actual process. Building that trust was interesting, and I believe it was for a good cause. Participants were provided with copies of transcripts for verification. As Kumar (2012) notes, credibility is about taking participants’ information back to them for confirmation and approval.
4.11.4 Transferability

According to Cohen et al. (2002), Shenton, (2004), Guba and Lincoln, (1994) and Kumar (2012), transferability refers to the degree to which findings of the research project may be transferable and be generalised to a wide population. This study is underpinned by the critical paradigm; therefore the results are based on equality and democracy; this study did not intend to find out about behaviour; rather, the aim was on human emancipation which promoted equality and freedom. Data presented in this study is not static: it can change from geography lecturer to geography lecturer, from context to context, and from time to time. In this study I cannot guarantee that the results may be applicable to other contexts for many reasons, which include differences in age groups. However, I can guarantee that something new may be learned, and transformation is bound to take place, even among those lecturers that have a clear understanding of Moodle but lack understanding of curriculum benchmarks and how to incorporate them into Moodle.

4.12 Limitations and Anticipated Challenges

According to Leedy and Ormrod (2005) and Simon (2011), limitations in a research project are there to empower the researcher; without them the researcher’s project will not exist. The limitation that I experienced in this study is the use of only two phases of the phenomenological research study cycle. I believe that if more than two phases were used, more observable results could possibly have been yielded. On the time frame at which this study was conducted, geography lecturers were more committed to other important activities. Moreover, the study was conducted to geography lecturers only, which was a challenge, because there were few geography lecturers willing to participate. I had to move to another campus and travel about 65 kilometres in search of other participants. Similarly, I was forced to do away with group interviews which I had planned during my proposal stage, because it was too difficult for lecturers to meet under one roof owing to their tight schedules. Initially, the study focused on postgraduate lecturers; however, owing to limited participants, I moved to geography lecturers only. However, these limitations were overcome by understanding three types of experience: self-experience, which enables me to understand the different personalities of my participants; shared-experience, which enables me to influence or sell my study better to others who believe in the views of community or others; and specialised-experience, which allows me to gain an understanding of lecturers whose actions are shaped
by their professional activities. In this way I was able to retain five diverse geography lecturers.

4.13 Conclusion of this Chapter

In conclusion, this chapter presented an informative structure of research design and methodology that was implemented in attaining the findings. I managed to accomplish the study as whole: the objectives of this study were achieved. More importantly, was the framing of curriculum benchmarks, wherein proposition and fundamental questions in each curriculum benchmark have more meaning. Furthermore, levels of experiences were simplified to give meaning to participants and readers. More important was the extensive engagement with research benchmarks from the critical paradigm: phenomenological research study sampling, data generation, guided data, ethical issues, and trustworthiness. Theorising on each of these concepts was covered; strengths and weaknesses were identified in each concept; and last, ways of overcoming those weaknesses were clearly stated and accordingly implemented.
CHAPTER FIVE
DATA PRESENTATION AND ANALYSIS

5.1 INTRODUCTION
In the previous chapter I have discussed research benchmarks relevant to this study; these research benchmark include discussing three research paradigms and aligning them with three types of experience (shared, self, & specialised). Of the three paradigms this research opted for the critical paradigm as the paradigm that underpins this study. This was not a matter of selecting a paradigm but rather a comprehensive demand from the research objectives and research questions obliged this study to opt for a critical paradigm. The critical paradigm was aligned with phenomenological research study as research methodology, convenience, and purposive, data-generation methods; (reflective activity, artefacts, and semi-structured interviews). Methods of analysing data were guided data analysis; and ethical issues were considered, as presented in the previous chapter. In this chapter, I present data that was generated using reflective activity, artefacts, and semi-structured interviews. Data that is presented is aimed at answering these three research questions:

1. How do geography lecturers experience Moodle as effective learning management system (LMS) at a selected South African university?
2. Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university?
3. What lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university?

Grabich (2012) cautions researchers that, when they reach the stage of analysing data, researchers must consider the following: first, be cautious about yourself in interfering with data and the impact of the data being analysed. Second, use methods that will generate the required data and be able to manage that data. Last, display data using the correct theories or conceptual frameworks so that readers understand it.
5.2 Discussion and Critique of Findings

Baxter and Jack (2008) argue that discussing findings in a qualitative study is not easy; it is a complex task. At the same time, it is the responsibility of the researcher to simplify complex phenomena so the reader is able to understand. Therefore, it is important to properly describe the context and the participants’ background so that readers are able to determine whether the study is applicable to their context. When reporting, the report points or events must be in chronological order; chronological order is shaped by addressing each proposition used in the study; and the study enables the answering of critical research questions (Baxter & Jack, 2008). Tuckman and Harper (2012) state that discussion of findings is important in research because these extend understanding of the literature, the conceptual framework, and the theoretical framework. In this study, findings that are to be discussed are generated from the reflective activity, artefacts, and one-on-one semi-structured interviews in two phases of phenomenological research study.

For the benefit of this study, and the readers, it is important to note that, before lecturers were able to reflect on the specific curriculum benchmarks, they were asked to explain their experience in general around the use of Moodle in relation to their teaching of geography. This was done to generate data that will provide me and the readers with a broader understanding of the lecturers’ experiences and to better understand lecturer’s backgrounds. This was the most interesting aspect of data generation. I noticed that those lecturers who were not taught how to use Moodle, knew about Moodle only from their own initiative. Further, it was interesting to note that these lecturers were enthusiastic to learn in this study. Geography lecturers were interested in understanding curriculum benchmarks rather than Moodle, because the majority of them did not view the programme as essential in teaching and learning. The study generated data twice for better understanding of lecturers’ experience in teaching using Moodle. It was crucial to generate data that seeks to understand the background of these participants. The following are lecturers’ experiences from the first to the last participant.

**Participant One (P1)**

Participant One is between the ages of 25- to 35-years old. She has been using Moodle for about two semesters. When she started, she knew nothing about Moodle,
but she learned Moodle independently, nevertheless. Now, she can use Moodle to upload students’ notes or slides, assignments, tasks, announcements, and so on. She notes that Moodle becomes instrumental when students are on strike. As a lecturer, she can still communicate with students through this platform. However, at first students were hesitant to use Moodle because they were used to hard copies handed out in lectures. They resisted the change for a while. P1: “I told them that Moodle is here to stay, it’s a University policy not my policy, you do not have a choice”. Suddenly they started exploring Moodle. They began to enjoy it because they realised that Moodle is user-friendly and is helping them to gain access to resources that will enrich them on the module.

From this participant’s experience, I can deduce that she comes from a position of specialised-experience, where the needs of the module are at the centre of learning; this is derived from the fact that this participant, without being told how to use Moodle, learnt it independently. She used the Moodle guide and learned step-by-step, as a lecturer, how to use Moodle to disseminate information to students. Furthermore, she made her students understand that Moodle is set by a policy of the university and that they must learn to use it.

**Participant Two (P2)**

Participant Two is between the ages of 25- to 35-years old. She has never been taught how to use Moodle. She was informed that the university is migrating from paperless learning to e-learning for economic reasons – to save printing course packs – and for educational reasons – to meet the globalising effort migrating to an online learning system. One of the major tools that will ensure that the university is moving faster to e-learning is Moodle. What P2 knows and understands about Moodle she learned on her own per the Internet, through the use of a manual/guide on Moodle. Other than that, she recommends that Moodle is a good tool to use when teaching, particularly with large classes; and when students are on strike or when you are away from university, one is able to teach regardless of not being there in the lecture room with them.

From this participant’s experience of teaching geography using Moodle, we can deduce that her ability to use technology enables her to learn Moodle on her own without being taught
how to use it. Furthermore, her experiences are telling us that she comes from a specialised-experience position which is aligned with performance curriculum in which the module needs or content delivery is at the centre; this may be observed when she learned how to use Moodle by using an official university guide on Moodle; not waiting for unknown training or workshops. Because she uses official Moodle guides and follows the step-by-step outline, she has no problem using Moodle. However, there are other possibilities of her gaining insufficient knowledge because no instructor is present in her learning on the use of Moodle.

Participant Three (P3)

Participant Three is between the ages of 36- to 49-years old. He regards Moodle as an excellent teaching tool that is also user friendly. In particular, it is useful in large classes and hence there is inadequate time to have social interaction or contact with all students. Moodle also provides a real-time, one-on-one online interaction with students, giving an opportunity to multi-task. However, its reach has not been fully exploited by students. Hence, the use of Moodle has been limited to “notice board” and academic resource sharing tasks, rather than as a full interactive teaching and learning tool.

From this participant’s experience of teaching geography using Moodle, I deduce that he understands technology and is passionate about using it as a tool for teaching and learning. He seems to come from both self-experience and shared-experience, where he strongly believes that Moodle promotes social interaction between lecturers and students. This suggests that this participant is using more competence-curriculum in which the views of the society are at the centre of teaching and learning. Furthermore, the shared experiences tell us that, while Moodle is available to both lecturers and students, lecturers are still opting for notice board as a means of communicating with students.

Participant Four

Participant Four is between the ages of 35- to 49-years old. This participant does not believe in Moodle. He believes that Moodle makes students passive instead of being active: students do not attend classes when a lecturer depends on Moodle. Moodle creates a gap between a lecturer and student and much time is lost that way. This participant only uploads notes for students and the rest is done in the lecture room and communicated via email. P4e uses Moodle to save paper from printing of Module
guides or course packs. This may be observed from his words during the interview session for Phase One, “Moodle is not for me, I don’t believe [in] it.”

From his experience I deduced that he is not interested in using Moodle for many reasons which include lack of self-experience; meaning lack of individual identity and self-being in the world of technology, or lack of shared-experience; meaning the influence of the community or the colleagues is lacking, or last, lack of specialised-experience; meaning formal knowledge about Moodle: he has never attended a formal workshop on Moodle, hence he is less interested in Moodle. Currently, this participant may be observed as a person who lacks knowledge of technology and that influences his attitude towards Moodle. For instance, he points out that: “Moodle is not for me”. This implies that he is a “digital immigrant” as Prensky (2001) describes. This study becomes significant to participants like this. It being an phenomenological research study, lecturers will be empowered at the end on the use of Moodle. Also at the end they will understand the three levels of experience. P4’s experience suggests that Moodle was not properly introduced to lecturers who are supposed to use it on a daily basis: they were just forced to use this technological tool without capacitation.

**Participant Five (P5)**

Participant Five is between the ages of 35- to 45-years old. He has mostly been using Moodle in his big classes. Those classes are for undergraduate students, first- and second-year levels in particular, where he taught more than 400 students in one class. Moodle becomes an instrumental tool for him to instantly communicate with all the students. He puts information and activities for students on Moodle which students can use in the Module; for instance uploading readings, slides, announcements, and so on. He further notes that no workshop was held specifically on Moodle; he has attended numerous workshops such as proposal writing and others but none were conducted that spoke to Moodle. What he knows and understands about Moodle was thanks to his efforts, although support systems such as the Internet and computers are available to him.

In addition to the background provided, it was important compare these lecturers’ background with data generated from artefacts. During data generation phases on the phenomenological research study cycle, artefacts were used as the second step of generating
data. At this level, artefacts have been put forth because they contain almost the same ideas as the lecturers’ general experiences portrayed in the above paragraphs. Artefacts are human-crafted ideas or objects that express feelings, emotions and skills that are based on what people are experiencing on a daily basis (Smith, 2007). These artefacts have been utilised because they allowed a clear message instantly on lecturers’ experience, particularly during Phase One of data generation (Cohen et al, 2011). This has worked to my advantage because, by the time I moved to Phase Two, I was able to understand almost every participant in this study, and was able to position their artefacts as self-experience, shared-experience, or specialised-experience.

Figure 6.1: Participant One artefacts

Starting from Moodle as virtuous practices, the affirmation from P1 indicates that the three categories of experience are important in ensuring that teaching geography using Moodle is effective as either specialised-experience (geography content), self-experience (lecturer) or
community (students). This participant places geography content at the centre, with both lecturer and student brought together by the geography content. This indicates that without geography content these two figures (lecturer and students) are not combined. The lecturer is concerned with the needs of the module as she places the geography content at the centre. She indicates: “…there has to be a lecturer and students that are brought together by geography content…” Other surrounding elements such as reliable Internet, software, hardware, time, user supporter, updates, and training are also important. These elements are regarded as the drive of effective teaching that must work as a system to produce results, this is referred to as virtuous practice in this study. Bad practice involves no interaction between the identified concepts starting from the centre. The following diagram 6.2 is my own interpretation of her experience which has been drawn to contextualise her experiences without losing the actual meaning of her original work regarding virtuous practice.

![Diagram 6.2]

Figure 5.1a: Researcher’s own interpretation of data

Aligning her artefacts ideas and experiences with curriculum, I judge that her acknowledgement of placing content of geography at the centre of teaching, suggests that she is driven by specialised-experience which informs a vertical/performance curriculum. The vertical curriculum places the needs of the specialization at the centre of teaching (Bernstein, 1999). Moving further, her acknowledgement of positioning students and lecturer on the dependence of geography content (specialised-experience) suggests that shared-experience (student) and self-experience (lecturer) are considered as minor experiences. In alignment with the curriculum, this indicates that the horizontal curriculum (which focuses on student’s
needs/community) and pragmatic curriculum (lecturer/teacher-based) are equally important. The vertical curriculum is more important than the horizontal and pragmatic curricula. Based on her experiences noted above and demonstrated through her knowledge using artefacts, I then determined that this participant is grounded in specialised experience which relates to a vertical/performance curriculum.

Furthermore, when lecturers are grounded in specialised-experience (vertical curriculum), the way in which they teach their students is also grounded on specialised-experience. Grounding students into their specialization is recommended because this kind of experience teaches students to value time and this creates order in their learning. Specialised-experience promotes students who are able to work in a step-by-step manner that follows procedure. These students are unlikely to commit mistakes because they act based on facts and prescribed procedure. These students learn best when they practise using a particular frame or guide as the reference. However, these students are not copying shared-experience (horizontal curriculum) in which they have to learn based on the views of the community; and where time is not critical, as long as they have learned at the end, all is well, according to their community. They wish to be guided before any action, because they are fearful of committing mistakes, which is part of learning. Therefore, they are not exploring the world as part of their daily lives. Whilst the lecturer is grounded in specialised-experience, consideration of students that are produced to meet the real-life situation is essential.

Figure 5.2 Participant Two: Artefacts
Starting from Moodle as virtuous practice, her illustration and explaining of artefacts indicates that one of the most important elements of effective teaching using Moodle is being able to communicate with students. Students must be able to communicate with you as a teacher. Communication is a two-way process. P2 illustrated this: “communication is key, so being able to communicate with student and them being able to communicate too”. P2 regards good practices of teaching geography using Moodle as placing the needs of students at the centre of her teaching. She regards the virtuous practice of teaching geography using Moodle as the one that should be dominated by shared-experience. Having said that, her explanation of artefacts further includes the importance of using tasks when teaching and acknowledges the important of time, as she said: “… evaluate and grade these tasks with comments is very important which Moodle allows…. I personally believe that this teaches students the value of time management ” P2’s explanation on the issue of grading students and time shows that, although she is driven by shared-experience, by regarding communication as the most important aspect of good teaching, she does so because she wishes her students to fit into the specialised-experience. This is characterised by time as one of the major differences from the other two experiences (self and shared-experience). On Moodle as bad practices, she demonstrated the use of Moodle without giving students challenging tests that will develop them and enable them to be critical thinkers. P2 therefore seems more concerned with what students are gaining, meaning she confirms her shared-experience position. In aligning her artefacts with the curriculum, I conclude that she regards horizontal/competence curriculum as the important curriculum that promotes effective teaching and learning of geography using Moodle.

Similarly, when lecturers are grounded in shared-experience they also teach their students to be grounded in shared-experience. This kind of experience is good and acceptable, particularly by the community; because the needs of the community are centred on. Student learning is not measured by the content knowledge and time; rather by learning outcomes. Time and content in shared-experience are not important. This kind of learning encourages students to be proactive with their learning, to be independent in decision-making and unafraid to commit mistakes: they are used to learning without formal structure or patterns that guide them when they have to perform an activity. However, when students are learning based on the views of the community, it is likely that they are failing to manage time, because time does not have meaning for many community members. What matters most are those
opinions that surround them. Also, when they are learning based on the views of community, there is a great possibility of too many errors, because students do not have a formal structure to follow when they are learning.

Figure 5.3: Participant Three: Artefacts

Starting from virtuous practice, P3’s artefacts indicate that all three categories of experience should be able to complement one another. By observing the illustration above, I deduce that the module is at the centre, flanked by lecturer and student. They all interact to produce the virtuous practice of geography using Moodle. The fact that the module is the centre of this illustration explains that P3 is driven by specialised-experience although he acknowledges the significance of the lecturer (self-experience) and student (shared-experience). Apart from my observation of the artefacts, he also states: “Moodle provides a good platform to quickly and effectively communicate with student. It also provides a platform to upload resources and receive feedback on the platform”. Moodle is badly utilised if there is no communication between a lecturer and student. P3 states: “I think Moodle should be able to be used independently with complementation with class announcements. In its current form, it is under-exploited, and student are not obliged to get into the system”. Although the university has made Moodle a compulsory tool for teaching and learning, students are misinformed
about it. When students are obliged to use Moodle, as is happening to lecturers, they will be forced to communicate with lecturers: currently, it is a one-way process.

Figure 5.4: Participant Four: Artefacts

Starting from virtuous practice of P4, his expression of using a smiling face to describe virtuous practice suggests that he is driven by self-experience, in which he uses feelings to describe the situation. He smiles when he has resources, students are willing to learn; he is also willing to provide students with tasks, and assessments. He also ensures that students’ work is marked. This may be confirmed by his statement: “…. I have all resources available for my teaching cooperating students, tasks, assessment are uploaded on Moodle for students and I have mark students’ work”. His students are important as they contribute to making him smile. P4 is driven by self-experience to demonstrate his good teaching; his action is informed by shared-experience. Equally, when students are not making use of Moodle as their learning platform, P4 wears a long face. This may be confirmed by his statement: “…but what makes me have this long face, is when students are not making use of resources available to them…”. P4 is driven by shared-experience when teaching geography using Moodle. His actions are undermined by what the students (community) are doing.
Starting from virtuous practice, P5’s artefacts are almost the same as P3’s. His demonstration indicates that module needs, which is the content, announcement, and classroom management are at the centre of teaching. This suggests that his understanding and experience of virtuous practice is based on ensuring that the needs of the specialization are at the centre. P5 is driven by specialised-experience when teaching geography using Moodle. The lecturer (self-experience) and the student (shared-experience) are there to make use of the content. What becomes important, according to his demonstration, is that there must be a link between these three role players: content, lecturer, and the students. On Moodle as bad practice, P5 regarded this as when there is no communication between the lecturer and student. This may be confirmed by his statement: “Moodle to this data seems to me like a one-way communication system. The instructors sending instructions to the learners. The learners rarely utilise this platform for communication purposes...”. P5 therefore regards shared-experience (students) as the missing experience when teaching geography using Moodle.
Considering Grabich’s (2012) guidance, the following table indicates curriculum benchmarks, themes, and types of experience. This table was drawn up to simplify data from reflective activities and one-on-one semi-structured interviews for the readers; to give shape to this study; and above all, to ensure that research questions are fully answered.

Table 5.1: Themes, Grouping of Lecturer’s Responses, and Types of Experience

<table>
<thead>
<tr>
<th>Themes (Curriculum benchmarks)</th>
<th>Grouping of Responses</th>
<th>Types of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teaching Targets</td>
<td>Targets for teaching (Aims)</td>
<td>Self-experience</td>
</tr>
<tr>
<td></td>
<td>Targets as teaching (Outcomes)</td>
<td>Shared-experience</td>
</tr>
<tr>
<td></td>
<td>Targets of teaching (Objectives)</td>
<td>Specialised-experience</td>
</tr>
<tr>
<td>2. Resources</td>
<td>Software resources</td>
<td>Shared/specialised-experience</td>
</tr>
<tr>
<td></td>
<td>Hardware resources</td>
<td>Shared/specialised-experience</td>
</tr>
<tr>
<td></td>
<td>Ideological-ware resources</td>
<td>Self-experience</td>
</tr>
<tr>
<td>3. Content</td>
<td>Content knowledge,</td>
<td>Shared-experience</td>
</tr>
<tr>
<td></td>
<td>Content expertise</td>
<td>Self-experience</td>
</tr>
<tr>
<td></td>
<td>Curriculum knowledge</td>
<td>Specialised-experience</td>
</tr>
<tr>
<td>4. Lecturer Job Description</td>
<td>Instructor</td>
<td>Self-experience</td>
</tr>
<tr>
<td>n/Designation</td>
<td>Facilitator</td>
<td>Shared-experience</td>
</tr>
<tr>
<td></td>
<td>Evaluator</td>
<td>Specialised-experience</td>
</tr>
<tr>
<td>5. Tasks</td>
<td>Teacher-based</td>
<td>Self-experience</td>
</tr>
<tr>
<td></td>
<td>Problem-based</td>
<td>Shared-experience</td>
</tr>
<tr>
<td></td>
<td>Content-based</td>
<td>Specialised-experience</td>
</tr>
</tbody>
</table>
### 5.3 Theme One: Teaching Targets (Rationale: Self, Shared, and Specialised-Experience)

*To which target are you teaching Geography using Moodle?*

According to van den Akker (2010), when teachers teach they must have a rationale behind their actions. Rationale answers the question: “Why are you teaching?” van den Akker (2010) notes that rationale is made up of three propositions (reasons for teaching), namely, personal, societal, and content. van den Akker (2010) places rationale at the core of his curricular spider-web, which suggests that rationale is a point of departure for any curriculum, be it enacted or implemented. In this context, we focus on curriculum as implemented by teachers who are regarded as curriculum implementers and are obligated to understand the rationale behind their teaching. In this study, the concept of rationale is replaced by the concept of experiences; and the curricular spider-web as a whole is replaced by curricular benchmarks. Curricular benchmarks are the signals of any curriculum, be it competence/horizontal, performance/vertical, or pragmatic. With the propositions for teaching targets, personal is replaced by target for teaching (self-experience), societal is replaced by target as teaching (shared-experience), and content is replaced by target of teaching (specialised-experience).
In this study, geography lecturers are expected to understand the three levels of experience (self-experience, shared-experience and specialised-experience). Furthermore, they must be able to bring understanding of the alignment between self-experience and aims; shared-experience and outcomes; and specialised-experience and objectives. The aims/self-experience are used by lecturers to reflect on their personal experiences in teaching geography using Moodle. Outcomes/shared-experience are used to reflect on the needs of the community (student) when teaching geography using Moodle. Last, the objectives/specialised-experience, assist lecturers to reflect on the module content and the policy that governs the university with relation to the geography module and Moodle.

**Phase One**

The first curriculum benchmark that geography lecturers had to respond to was teaching targets (reasons) which encompass self-experience (personal), shared-experience (societal), and specialised-experience (content). In this phase, participants responded as follows:

P1: “Students will expand their content and conceptual knowledge of geomorphology and biogeography in the world, Africa and South Africa. But above all, good communication skills will be developed, students’ writing skills will improve through regular homework activities posted and submitted via Moodle”. P2: “I use Moodle to convey messages to students on a continuous basis. Typically, I remind students of upcoming tasks that are to be completed online and the closing dates”. Similarly, P3 states: “Because Moodle allows me to easily interact with a large number (about 420) of students”. Most interestingly, P4 notes: “I don’t believe in Moodle, my students knows and they can tell you, when you use Moodle students are not coming to class... however, if it happened that I used it just for them to get learning material and instruction or clarity”. In addition, P5 records: “Moodle facilitates efficient and effective communication between me and my students...”.

From these five participants, I can deduce that participants are teaching geography using Moodle because of shared-experience (societal needs) since the responses of the participants are more dominated by the community needs. In this case students are regarded as community. P1- P5 all cite the same reason: “using Moodle to communicate with their students”.

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Also during the interview stage, participants still stand firm on what they have written on their reflective activity stage. However, during the interviews some of participants included specialised-experience (content reason) for teaching geography using Moodle. Participants responded as follows. P1: “... Moodle is one of my best tools that I use to reach all most all my students at any time... I use Moodle to upload student’s slides, extra readings and assessment”. Similarly, P2 notes: “with Moodle I was able to communicates with all students on continues bases, be it I want to make announcement, extra readings, slides and so forth I use Moodle”. P3: “Moodle is a very effective tool of communicating with students particularly when students are proactive too in using Moodle, so I use Moodle because of one major reason, I can interact with my students anywhere anytime”. P4, although he does not use Moodle often, does use it for communication with students as he notes: “I normally sent my students announcements via Moodle, slides of that particular lecture I sent them after attending because once I sent them before class they do not come to class”. P5: “I believe all lecturers particularly those who are teaching big classes, first and second years like myself are forced to use Moodle regardless of what. To assists and to communicates with all students is made possible only by Moodle other than that you will be found wanting”.

First, what I deduce from Phase One of phenomenological research study – the rationale behind geography lecturers’ use of Moodle is that when lecturers use Moodle they are mostly driven by shared-experience (societal reasons); meaning the use of Moodle is influenced by the community or society needs (Khoza, 2016b). This is derived from their direct responses, in that P1 to P5 cite the use of Moodle because they wish to communicate with students. This was more evident during the reflective activity stage. Second, during the interview stage in Phase One, the same geography lecturer’s responses were influenced by both shared-experience and specialised-experience for teaching of geography using Moodle. This was evident with P1 and P2: they note that they use Moodle to upload extra reading, and slides, and to evaluate students. Content reason means placing the needs of the module at the centre of teaching and learning (Khoza, 2016b). These geography lecturers are concerned about geography content that must be conveyed to students.

Furthermore, from geography lecturer’s experience from Stage One (reflective activity) and Stage Three (interviews) of Phase One, I deduced that lecturers are teaching geography being driven by outcomes. Outcomes are aligned with a competence/horizontal curriculum.
Competence curriculum places the needs of the community at the centre (Bernstern, 1999; Khoza 2016b). From lecturers’ experiences, particularly during interviews, some lecturers (1 & 2) strengthened their responses to move beyond shared-experience to specialised-experience. Geography lecturers were further driven by objectives of their module which is aligned to performance/vertical curriculum. Performance/vertical curriculum places the needs of the specialization at the centre (Bernstern, 1999; Khoza 2016b). This may be observed from lecturers’ experiences in which they cite the use of extra reading for students, slides uploaded, and student assessment. Furthermore, from this phase, only two levels of experiences (rationale) were hinted at by geography lecturers, namely, shared-experience and specialised-experience. Self-experience is neglected from this phase both from reflective activity and interviews. Hence there was a great need for Phase Two.

**Phase Two**

During this phase, geography lecturers were made aware of the rationale for teaching; also, types of experience were clearly explained to them. These experiences are categorised as propositions: self-experience (personal), shared-experience (societal), and specialised-experience (content). This was intended to provide knowledge to geography lecturers about experiences, and to be able to categorise their experiences. What was interesting was that, at this point, lecturers were not aware of these types (propositions) of experiences, even though, in some instances, they reflected upon them during Phase One. However, they were merely giving answers on what they do on a daily basis; unaware that there are three categories of experiences about the world. This was the most interesting concept to explain to geography lecturers: all lecturers accepted that they were learning something new in this study. They also noted that, although curriculum benchmarks are important in driving the curriculum, understanding experiences (rationale) is the starting point of all action. Rationale determines teachers’ movement and what kind of curriculum is carried out, whether competence, performance, or pragmatic curriculum. Khoza (2016b) referred to these as curriculum visions meaning that they drive the curriculum. In this phase participants responded as given below.

**Self-experience (personal reasons)**

P1: “I believe that one has to develop love of this Moodle even if you are not used to it, because you are stuck with it, I think I have that”. P2: “...above all I enjoy Moodle”. P3: “I am starting to love Moodle because I cannot survive without it in these big classes”. P4: “What I have learn from this is that one has to like Moodle and influence students to like it
too for better teaching and learning”. P5: “I enjoy Moodle because to me is useful particular in large classes and hence inadequate time to be in contact with all my students and address each one and every one challenges regarding the module”.

From these responses, I can deduce that all geography lecturers have developed personal interests in using Moodle. All participants indicated that they teach geography using Moodle because they are fond of Moodle. P2 indicates that he has learn to develop a love of Moodle, meaning that he was previously not interested in Moodle: he indicated initially that he did not believe in Moodle. Learning about the three types of experiences taught him something new, which was important for his personal development. These responses of geography lecturers suggest that lecturers have attached their personal interest to the use of Moodle. This has a major influence on their teaching of Geography using Moodle. Understanding of Moodle is influenced by the love or passion they display. As Khoza (2015a), Ngubane-Mokiwa, and Khoza (2016b) argue, self-experience allows teachers to construct their individual understanding. At this level, teaching and learning also allow teachers to find their identities. Walkington, (2005) affirms that teacher identity and uniqueness are central to what they teach. Identity upholds their beliefs, values, attitudes, and practices that inform their daily actions whether in the classroom or outside it.

Shared-experience (societal reason)

It is interesting to learn that geography lecturers have been able to move from experiences that address their personal needs to include shared-experiences, in which the needs of the community are catered for by lecturers as curriculum designers and implementers. The geography lecturers responded as given below.

P1: “…Second, Moodle is there to improve teaching and learning by ensuring fast communication between a lecturer and the students as they both need to work together throughout the course”. P2: “I communicates with my students via Moodle, support them in any questions they might have particularly when I am away from them”. P3: “across the globe, digital technology is used, you can speak of industries, different government departments, and the list is endless, so it is paramount for us to produce people who will meet the demand of the corporate world...”. P4: “Moodle is communication therefore, I use it for that purpose and I make announcements for instance when I want to cancel the class, I want to change the venue...”. Last, P5: “I enjoy Moodle because I can deal with large classes since
contact time we have with students is inadequate to address each and every one challenges regarding the module”.

From the above responses of Phase Two, I deduce that geography lecturers have used shared-experience (societal reason) as one of the experiences which assists them in teaching geography using Moodle. For instance, P3 notes the benefit of teaching geography using Moodle to the society at large. Msibi and Mchunu (2013) note that, when teachers change, the rest of society changes, because teachers are the agents of change in our society. Teachers must first transform, which we observed in self-experience of lecturers. From there, teachers are expected to change their society. Teachers must first understand their identity before they can change society. Ellsworth (2000) affirms that individual identity and belief are the cornerstones of building a society. Furthermore, from this interesting discussion on shared-experience, when geography lecturers are teaching geography using Moodle, they are following a horizontal or competence curriculum, which is about placing and achieving the needs of the society.

**Specialised-experience (content)**

Almost all geography lecturers provided long answers when they addressed specialised-experience. In some instances they even unpacked the type of geography content they mostly sent to students via Moodle. Their specialization appears very important and is among many reasons for them to teach Geography using Moodle. Geography lecturers responded as follows.

P1: “First, the University has a policy in place for us to use Moodle therefore we cannot cross the University policy. Second, Moodle is there to improve teaching and learning by ensuring all the modules are being taught effectively regardless of big numbers in our classes, some students seats on the steps of the lecture room because of limited space regardless of that Geography must be taught to them ”. P2: “Moodle is there to assist us as lecturers in delivering the content and to assess. Currently Geography is no longer the way it was before the content is shifting, at the same time students are more and more interested in Geography. Meaning we have very big classes like never before. So we really do need to reach out to all our students, what forces me more to use Moodle is because I am able to distribute slides, PDF files, assignments and some of the students have never done Geography at high school level, so it my responsibility to ensure that they go to next level
with clear understanding of Geography”. P3: “...Moodle is my shepherd, since we do not have field trips anymore, I use videos to demonstrate some concepts, I post slides before class, I post notes, assess students, a lot that I do”. P4: “Using Moodle is not a question of being able to use it or not, or a question of like or dislike but it’s a policy therefore we need to comply, both students and lecturers must be able to use Moodle”. P5: “I am employed to teach Geography as a module, so students must get what they are here for”.

From the above geography lecturers’ responses, I can deduce that lecturers are more interested in specialised-experience. This may be observed from their long and informative answers that speak directly to geography content. As Khoza (2016b) states, specialised-experience places content at the centre of teaching and learning. Similarly, Van Manen (1977) argues that specialised-experience is a source of knowledge for teachers, as decisions are framed by research, values, and attitudes. Lecturers’ responses are therefore informed by their understanding of their specialization, meaning knowledge of module which can be measured by their geography qualifications. This knowledge strengthens their understanding of university policies on the module, such that when they teach geography they are guided by university policies and are not willing to compromise. Specialised-experience is regarded as the major reason for geography lecturers to teach geography using Moodle. Furthermore, from this debate on specialised-experience it is clear to see that geography lecturers use Moodle to address the needs of the module. Lecturers teach geography using Moodle being cognisant of a vertical or performance curriculum, which places content at the centre.

5.4 Theme Two: Teaching Resources (Software, Hardware and Ideological-ware)

Which resources do you use to teach Geography?

According to van den Akker (2010), resources are important to effect active teaching and learning: teachers must use proper resources. Khoza (2012) categorises educational resources into three categories, namely: hardware resources – physical equipment that promotes teaching and learning such as computer, laptops; software resources – which are programmes used by hardware to promote teaching and learning, such as emails, PowerPoint, Microsoft, and slides; and ideological-ware resources – which are theories that inform teachers’ practices. These kinds of resources are grounded in the individual’s beliefs about teaching (Khoza, 2012). These resources are aligned with each type of experience, as indicated in
Chapter Two. For instance, software resources are aligned with specialised-experience (content); hardware resources are aligned with shared-experience (societal); and ideological-ware resources are aligned with self-experience (personal). The resource theme was informed by the significant role that teaching resources play in teaching and learning (Makumane, 2017).

Phase One
The second curriculum benchmark that geography lecturers had to respond to was teaching resources which encompass software, hardware, and ideological-ware. In this phase participants responded as given below.

P1: “I use my Laptop, overheard projector, Document reader, Journal articles, and Books”.

P2: “I normally use my computer, Course outlines, Lecture notes, and Class readings PowerPoint”. P3: “Since the university has become paperless we use laptops to project lectures notes which I have to summarise into slides for easy understanding by my students and we have access to the unlimited Internet to aid in teaching, we have free University laptops, even computer LABs are available to those students who do not have laptops but majority of students have laptops since the inceptions of NSFA laptops programme, those are available resources which I believe the university is very supportive on aspect of resources”.

P4: “I use different resources such as laptop, slide, PowerPoint, pdf files, course outline and Moodle platforms to upload students work”. P5: “I use my computer, videos to explain some concepts, prepare slides, emails, USB my external hard drive”.

Equally, on the one-on-one interview section participants responded the way they have done in the reflective activity. From participants’ responses, I deduced that all participants are responding only on two types of resources: software and hardware. Even during the interview stage, none of the participants indicated ideological-ware. This suggests that geography lecturers are unaware of ideological-ware resources as one of most important educational resources. They do not regard themselves as part of resources, as instrumental individuals who decide and make use of hardware and software resources (Makumane, 2017). Johansson (2006) notes that providing schools with sufficient computers and any other educational resources, does not mean aims of education have been achieved. Shulman (1987) regards ideological-ware as the teacher’s understanding of the curriculum; teachers deploy useful forms of presenting ideas, content, illustrations, explanations, demonstrations, and examples.
Teachers’ knowledge makes learning either easy or difficult for learners. Ideological-ware resources are therefore at the centre of teaching and learning. Without ideology no effective teaching and learning can take place.

Geography lecturers are interested in using both hardware and software resources. Geography lecturers appear driven by shared-experience (societal) which aims to address the students’ needs. Lecturers are also driven by specialised-experience (content) which aims at addressing the specialization needs (Mpungose, 2017). In addition, Khoza (2015c) affirms that a curriculum is driven by hardware and software resources, with the aim of addressing the needs of the community (students) and content (specialization). This further suggests that these geography lecturers follow horizontal/competence curriculum (which focuses on the needs of the community) and vertical/performance curriculum (which focuses on the needs of specialization/content).

**Phase Two**

Before embarking on generating data for this phase, it was important first to engage thoroughly with data from Phase One for the purpose of understanding what geography lecturers are missing, providing capacity where necessary. As we moved to this phase from the previous phase, I deduced that none of the geography lecturers reflected on ideological-ware. Hence this phase aimed at covering all three types of resources in a transformative way, paying more attention to ideological-ware. On this phase, participants responded as follows:

P1: “I use different kind of resources, hardware, software, these resources work hand-in-hand for instance I want to make an announcement, I need my laptop with Microsoft where I am able to write and send... when it comes to the actual teaching, I believe all lecturers want to know his/her students by name but because of big classes I can’t therefore I am forced to adopt certain ways of teaching whether I like it or not”. P2: “more than what is available in my eyes, your laptops, videos, desktop etc. I also ensure that facilitators are available to assist my students because they can be better handled in that manner, if they have questions facilitators able to answer them, that contact between teacher and a student is always needed... I use lecturer-approach in class and facilitators are using student-approach, which is more like interaction”. P3: “You can have all your teaching pedagogies or your theories that we learn from different philosophers but the truth is that they are not fitting to any
context, you as a teacher need to pick what is applicable to your class and work on that, in my class I enjoy group work but to first year students group work is not working”. P4: “I use my laptop to upload slides, pdf files… which help me teach even when we are not face-to-face with my students…”. P5: “Since trips are no longer available for my Geography students, I use videos to illustrate theories such as continental drift theory when doing that students are more interactive because some students do not believe in some geographical knowledge so it becomes interesting”.

From the second phase of phenomenological research study, geography lecturers indicate some element of being aware of ideological-ware resources. Khoza (2012) identifies these examples of ideological-ware; teaching and learning strategies, theory of teaching and learning, research findings, teaching experiences, and others. At this phase of the study, geography lecturers are able to reflect on three types of resources; software, hardware, and ideological-ware. Furthermore, some geography lecturers reflected on ideological-ware resources with understanding that to employ a particular theory, understanding of the context is important. P2: “more than what is available in my eyes your laptops, videos, desktop etc., I also ensure that facilitators are available to assist my students because they can be better handled in that manner, if they have questions facilitators are able to answer them, that contact between teacher and a student is always needed... I use lecture-approach in class and facilitators are using student approach, which is more like interaction”. P3: “You can have all your teaching pedagogies or your theories that we learn from different philosophers but the truth is that they are not fitting to any context, you as a teacher need to pick what is applicable to your class and work on that, in my class I enjoy group work but to first year students group work is not working”. Geography lecturers understand their role and believe in controlling the curriculum. Amory (2012) argues that learning is not about technology; rather, it is about ideology. When referring to resources, teachers should be central in determining the required resources. This may be achieved only when teachers understand their role and position.
5.5 Theme Three: Content

What content do you teach in geography?

Content is what teachers are supposed to teach, and it relates to when they must teach it, because teachers are expected to understand concepts and the structure of the subject being taught (Shulman, 2000). This explanation suggests that geography lecturers are expected to fully understand what they teach and be experts in their subject. van den Akker (2010) outlines content as one of the most important curricular benchmarks in that teaching is about understanding content that is conveyed to students via various methods. The research question which intended to generate lecturers’ knowledge of content, was: “What content do you teach in geography when using Moodle?” This was the concept in which geography lecturers displayed a high level of understanding. As a result, only one phase was covered: reflective, active, and semi-structured interviews. There was no need for a second phase.

Phase One

P1: “Hazards and human responses, as well as Method modules which deal with CAPS implementation in FET Geography”. P2: “It depends on the module in question, for example in Geography for educator’s method one, I lecture on how to use the CAPS document to set tasks, assessments and tests. How to construct a lesson plan for Geography, how to use posters and worksheets in teaching and learning then I introduce them to GIS”. P3: “I teach Environmental systems and Introduction to Remote Sensing”. P4: “I teach them Climatology; mid-latitude cyclones, tropical cyclones, tornados, thunderstones, Geomorphology; earthquakes, mass movement, Natural disasters which are hazards and precautionary measures to them”. P5: “We separate Geography into two, I took climatology section and my other colleague is teaching geomorphology. In my section we focus on mid-latitude, tropical cyclones, influence of ocean currents on South African weather”.

During the interview sections, participants were more specific and provided in-depth responses as indicated below.

P1: “I teach Geography in third and fourth years, the content is designed such that there is a link between what is taught in third and fourth. In Geography method 3, I teach them methods or effective strategies of teaching Geography, use of any available resources to teach Geography with a focus on CAPS for FET, basically we cover what is covered in the school Geography curriculum, we prepare them to teach better. In Geography education I
teach natural disasters which are hazards and Human responses to them, sustainable cities, apartheid cities, urbanisation, rural depopulation, settlements which same concepts are dealt within a school curriculum but at this level we also consider more of background or history”.

P2: “I teach Geography for educator’s method one, I lecture on how to use the CAPS document to set tasks, assessments, and tests. How to construct a lesson plan for Geography, how to use posters and worksheets in teaching and learning then I introduce them to GIS, I also take them for make work, where we do map interpretation and map calculations”.

P3: “Geography that I’m teaching is separated into two, 1. Introduction to remote sensing and 2. Environmental systems. Environmental systems, is an entry module for the first years. There are three section in this module; biography section, climatology section and geomorphology section. My section is geomorphology, I teach students; lithosphere, Earth; layers that form the Earth, continental drift, what courses continental drift, evidence of continental drift, ontology, archaeology, eruption, volcanic eruption. Geomorphology is about soil, Earth, continental plants and rocks. How do different systems interact? In geomorphology is a soil that supports the entire system of life. Soil support plant and animals. Continental drift will give you rocks, in rocks they are different aspects such as weathering, different types of weathering. They are different components of soil; soil as organic matter, soil as inorganic matter, water that goes into the soil and we discuss soil budget. In hydrology part of it, that is whole hydrological cycle and how water falls on the ground and all the way into the ocean. In that process, how does that influence geomorphological process such as deposition and erosion? We talk about water cycle, we start with water when it rains on the mountains to rivers. How do they look like? What are the characteristics of rivers that comes top of the mountains and the ones that are near oceans; river is narrow at the top wider at the bottom...”.

P4: “I prepare my students Climatology; climatology is about climate and weather. Most influencing weather phenomena are mid-latitude cyclones; which has great influence in weather of South Africa particularly in South Western Cape which receives rainfall in winter which is in contrary with rest of the country which receives rainfall in summer. We discuss tropical cyclones; focusing on their origin, their negative impact on the socio-economy and environment, tornados, thunderstones. In geomorphology we focus on earthquakes, mass movement, Natural disasters which are hazards and precautionary measures to them”. Last, P5: “I teach biogeography section, at this level I introduce them to ecosystem, this is an elementary stage in which I give them the principles of the course, and in fact what we do is
what they have done in high school but because we know that we must not assume that students know so we must teach them these basics. In second year, we develop from the introduction that we dealt with in their first year. We look at the factors that affects the distribution of plants and animals. I then hook in the issue of theories that are related to module. My focus on this level I want them to apply knowledge taught to them”.

At this level geography lecturers indicate a clear understanding of their module content: all cited specific topics they taught in their respective classes and semesters. Each of those topics was stipulated in their respective module guides. Further, module guides stipulate weeks and topics that must be covered in a specific time frame. Geography lecturers are placing the needs of their specialization at the centre of their teaching. Furthermore, geography content follows a performance/vertical curriculum; which places the needs of the module at the centre. Furthermore, geography lecturers possess understanding of the geography methods module they teach; methods modules are about infusing teaching strategies into the geography content. For instance, P1: “…In Geography method 3, I teach them methods or effective strategies of teaching Geography, use of any available resources to teach Geography with a focus on CAPS for FET, basically we cover what is covered in school Geography curriculum, we prepare them teach better”. And P2: “I teach Geography for educator’s method one, I lecture on how to use the CAPS document to set tasks, assessments and tests. How to construct a lesson plan for Geography, how to use posters and worksheets in teaching and learning then I introduce them to GIS, I also take them for make work, where we do map interpretation and map calculations”. Methods modules equip geography student teachers to be better future teachers and have a clear understanding of the CAPS policy document. However, the lecturer decides which methods or approach should be employed when teaching a particular aspect of geography. Geography lecturers, in addition to being content driven, are also driven by self-experience. This means that the needs of the lecturers are at the centre of the curriculum they teach to students. Self-experience informs a pragmatic curriculum. When teachers understand the content they teach, their confidence rises and this is significant in emancipating society (Boody, 2008).
5.6 Theme Four: Lecturer Designation (Instructor, Facilitator, & Evaluator)

*What is your role in the teaching of geography using Moodle?*

Pedagogical approaches are the classroom instructions and interactions used by the teacher, instructions which include the interactions between students and the content during teaching time (Grossman (2005). To teachers, the pedagogical approaches are important to understand: teaching approaches inform the ways in which teachers engage with students in the classroom. van den Akker (2010) identifies the pedagogical approach as one of the elements needed to reach curricular benchmarks; teachers are expected to have a full understanding of their role in the classroom. The role of the teacher in the classroom depends on the curriculum that is followed. For instance, a competence curriculum requires lecturers to facilitate in the classroom; whereas a performance curriculum requires lecturers to be evaluators or assessors. At some point, lecturers must combine the two when the curriculum is pragmatic, when their roles are more instructive. In this study, the pedagogical approach question was; “What role do you play in teaching geography using Moodle?” Geography lecturers responded as follows:

**Phase One**

P1: “I use Moodle to upload notes, to post announcements and tasks, which students submit via Moodle. I also mark the tasks on Moodle then at the end of the semester I open up a portal where the students are expected to evaluate the module”. P2: “I’m a lecturer so I log in as a lecturer and upload/set tasks and set due dates for submission on Moodle. Thereafter I evaluate and grade the tasks on Moodle so that students have access to my response to their tasks”. P3: “I prepare notes in different format, I teach and assess but all in all my role is be communicator”. P4: “I assists my students in achieving good results because learning is about achieving at the end, so as a lecturer I must ensure support to my students I am using Moodle to reach out to them very easily, I take the work to them and I monitor”. This suggests that this participant is using student-centred approach when teaching. Last, P5: “When using Moodle, I regard myself as a communicator because I send work and receive from students...”.

van den Akker (2010) categorises two major classes of teachers’ role: student-centred – this approach is utilised by lecturers when they are aiming to achieve learning outcomes.
Learning outcomes are aligned with shared-experience which aims to achieve competence or horizontal curriculum. The second category is the lecturer-centred approach. This approach is utilised by the lecturers when they aim to achieve learning objectives. Learning objectives are aligned with specialised-experience (content driven) which aims to achieve the performance/vertical curriculum (Hyland, 2006; Van der Merwe et al., 2015). According to Kolb (2014) and Mpungose (2017), lecturers’ roles comprise three categories; facilitator (outcomes-driven), assessor (content-driven), and instructor (aim-driven) From the above participants’ responses I can deduce that lecturers are facilitated when teaching geography using Moodle. These lecturers are driven by shared-experience (societal needs). For instance, P1: “I use Moodle to upload notes, to post announcements and tasks, which students submit via Moodle. I also mark the tasks on Moodle then at the end of the semester I open up a portal where the students are expected to evaluate the module”. And P4: “I assists my students in achieving good results because learning is about achieving at the end, so as a lecturer I must ensure support to my students I am using Moodle to reach out to them very easy, I take the work to them and I monitor”. These responses indicate that Geography lecturers are using Moodle when assessing their students. In this phase, lecturers do not indicate what informs their choice of teaching methods, when teaching geography using Moodle. Furthermore, self-experience of lecturers is missing; therefore lecturers need to be aware of this as we move to Phase Two.

Phase Two

P1: “...when I am teaching Geography using Moodle, in most cases I am not in front of my students, I don’t have a prescribe approach that I follow because my role is not clear there since I am not physically in class, alternating methods is what I do, depending on the situation at hand. However, I believe in student-based method”. P2: “My role is simple, I facilitate and assess my students...to me facilitating means I make all the required resources available for students and they are the ones who are proactive...”. P3: “I like students-centred approach and I think students shouldn’t be regarded as machines that we control in order to do the job rather be critical thinkers... that can be achieve when students are given tasks to do on their own, teach them to think critical and independent...”. P4: “Depending of the number of students... in big classes I use student-based approach, in small classes like postgraduate classes; I use teacher-based approach at time I feel both methods can
complement each other”. P5: “…I regard myself as a facilitator... I use Moodle to communicates with students...but at times role changes but not because I like that but the working environment forces me to adopt certain approaches and neglect others whether I believe on it or not”.

From the participants’ responses, we can observe that geography lecturers were transformed in the second phase. Their responses were more informative than on the first phase. This may be observed from P2: “My role is simple, I facilitate and assess my students...to me facilitating means I make all the required resources available for students and they are the ones who are proactive...”. Geography lecturers are placing the needs of students and that of their specialization at the centre of their action. Furthermore, the lecturers’ role is driven by self-experience (personal) and specialised-experience. Lecturers are not adopting these roles for personal interests, but because they wish to achieve specific outcomes and objectives of the module. This may be observed from P1: “I like students-centred approach and I think students shouldn’t be regarded as machines that we control in order to do the job, rather be critical thinkers. That can be achieve when students are given tasks to do on their own, teach them to think critically and independent…”. P3 believes that students should construct their own knowledge through engagement in processes of their own learning. Lecturers have particular theories that inform their actions, although none of them declared any theory. Also P5: “…I regard myself as a facilitator... I use Moodle to communicate with students...but at times role changes but not because I like that but the working environment forces me to adopt certain approaches and neglect others whether I believe on it or not”. Geography lecturers are therefore driven by self-experience and shared-experience when teaching geography using Moodle. The teacher’s role, at times, depends on the context in which teaching and learning is conducted. Geography lecturers may like to explore all three approaches; however, circumstances, such as large classes, are difficult. Teachers therefore adopt a certain approach that works with the context.

5.7 Theme Five: Teaching Tasks

What tasks do you give to geography students when using Moodle?

Tasks are beneficial in teaching and learning if they are structured in such a way that they benefit the students, enhance the module content; and the language that is used is
comprehensible to students (Long, 1985). By the same token, van den Akker et al. (2012) state that teaching tasks are important in teaching and learning, because they drive any curriculum: tasks enable students to generate knowledge and skills. Furthermore, King et al. (2009) note that teachers should be aware that students’ participation in the classroom is not the same in these tasks. Even the selection of tasks by the teacher should be able to accommodate each student’s needs. Biggs (2011) identifies three types of task that drive any curriculum, namely, teacher-based tasks (self-experience), problem-based tasks (shared-experience) and formal-tasks (specialised-experience).

**Phase One**
P1: “I use Moodle only for informal activities... for the formal activities I don’t use Moodle because they must submit in hard copies”. P2: “I upload activities on Moodle... quiz, homework, for my students to do electronically”. P3: “In most cases I use platforms of Moodle to assess my students...chatrooms and discussion forum are mostly used but initially most of the students were not that active on these platforms, only now when they realise that my teaching style doesn’t change, they are following”. P4: “I use Moodle portal to make announcements, reminding students on due tasks, instructions about assignments from there my students know that they must upload their assignments”. P5: “All notes, slides, or files that I prepare for them in the classroom, I also sent to them... each lesson has its own task”.

Because tasks are categorised into three (teacher-centred, student/problem-base, and formal tasks), geography lecturers are expected to respond on these three categories. If not, there is a great need for lecturers to be developed. In the above responses, I deduced that lecturers were driven by shared and specialised-experience when responding to this question of teaching tasks. This claim is evident to P2: “I upload activities on Moodle... quiz, homework, for my students to do electronically”. Also P3: “In most cases I use platforms of Moodle to assess my students...chatrooms and discussion forum are mostly use but initially most of the students were not that active on these platforms, only now when they realise that everything my style doesn’t change they are following...”. These lecturers’ responses suggest that geography lecturers are concerned for the students they teach, therefore tasks they design must address students’ needs. During Phase One of this phenomenological research study on the question of tasks, lecturers were focusing more on students than themselves or their
module (geography). However, P5: “All notes, slides or files that I prepare for them in the classroom, I also sent to them... each lesson has its own task”. Although the majority of geography lecturers address the needs of the students, there are lecturers who use tasks that are driven by specialised-experience. As we move to Stage Two, geography lecturers must be able to embrace all three types of task in order to attain transformation or change.

**Phase Two**

P1 states: “Activities are based on what you want to achieve as a teacher, to me I use chatroom when I want to check my student understanding of a particular concept... I normally use emails when I want my formal assignment”. P2: “I love interaction mode of teaching... in my class I promote the use of discussion forum and chat rooms”. After probing this participant continued by saying: “not only myself who is doing the assessment, the students also assess us at the end of the semester for our own personal development... that is how I normally design my tasks”. P3: “I design practical tasks then Geography tutors do the marking... but I think we all like to see discussion taking place in our classroom because I believe that how the actual learning is happening but due to large classes we end up using theories that are not productive if I may say so”. P4: “…I am aware of different philosophies and theories around teaching activities but to me I only choose to focus on formal activities because if I may entertain all your students-based activities, teacher-based activities and others, I will not finish my work for the semester... classes are too big, students strike every now and then so time does not wait for you”. P5: “I encourage my students to do presentations, discussions, their peers have got an opportunity to challenge them and ask questions, these bring about dimension of problem-solving skills and able to develop public speaking... my tasks are mainly formal”.

In Phase Two, geography lecturers’ responses indicate that they are aware of the three types of tasks that drive any curriculum: teacher-centred, student-based, and formal tasks (Biggs, 2011). King, Petrenchik, Law, and Hurley (2009) affirm that teachers should be aware that students’ participation is not the same in these tasks; students are most active in the informal task as the tasks are unstructured. For instance, P2: “...not only myself who is doing the assessment, the students also assess us at the end of the semester for our own personal development... that is how I normally design my tasks”. This participant is driven by self-experience in which the design of tasks by the lecturer are informed by what students want.
Wajnry (1992) states that teacher-centred tasks are based on the teacher’s understanding of various means of teaching and learning. This includes teaching while observing your own lesson, as is the case for teaching for self-development.

Further, P4: “…I am aware of different philosophies and theories around teaching activities but to me I only choose to focus on formal activities because if I may entertain all your students-based activities, teacher-based activities and others I will not finish my work for the semester... classes are too big, students strike every now and then so time does not wait for you”. Geography lecturers are also driven by specialised-experience in which they focus on formal tasks owing to the large number of students that they teach; and as such, have less time for other types of task. Leask (2009) states that formal tasks are arranged formally around a well-defined content. They indicate topic and resources. Almost all geography lecturers do believe that student-based tasks are instrumental in teaching and learning, since they enable the promotion of interaction between students. For instance, P5: “I encourage my students to do presentations, discussions, their peers have got an opportunity to challenge them and ask questions, these bring about dimension of problem-solving skills and able to develop public speaking... my tasks are mainly formal”. Tasks that are set by lecturers allow students to be active in classrooms. Leask (2009) states that embracing these three types of task (teacher-centred, student-based, and formal) allows students to gain skills that include: being able to question and respond effectively to the questions, so that class participation is promoted. Moore (1997) concurs by stating that students learn by gaining knowledge through practical tasks, tests, and opinions from teacher and peers; therefore tasks should be structured such that students benefit.

5.8 Theme Six: Learning Space and Time

Where and when are you teaching geography using Moodle?

In this context, learning space means the space where teaching and learning is taking place (Fraser, 1998, Yan & Kember, 2003, Khoza, 2013, van den Akker, 2010). In the curricular spider-web by van den Akker (2010), learning space refers to location and time. The concept of learning space aims to answer the question of where the teaching and learning of geography takes place; while the concept of time aims to answer the question of when the teaching and learning of geography takes place. Several studies (Khoza, 2017, Khoza & Mpungose, 2017, Jackson, 2017) affirm that Moodle platforms may be used as self-
experience, shared-experience, and specialised-experience. Teaching and learning space comprises three categories, namely, direct-space, indirect space, and self-space. Makhulu (2018) and Mpungose (2017) refer to these spaces as face-to-face (direct), online (indirect), and blended learning (self-space). These categories are aligned with each level of experience: self-space is aligned with self-experience; direct-space is aligned with specialised-experience; and indirect-space is aligned with shared-experience.

**Phase One**

P1: “I teach in lecture halls and via Moodle during specified times, as per the timetable, I also teach Geography using Moodle when I’m away from the office”. P2: “Any venue on campus that can accommodate the number of students in the class. Since Geography students have increased in numbers most especially in the beginner’s module phases like Geography 210 and 220, we use the auditorium which can accommodate about 400 students. We use Moodle for all weekly tasks and as a platform to communicate messages to all students outside of the classroom setting”. P3: “Teaching and learning is taking place anywhere; inside and outside the classroom, and any time. This is probably the Moodle’s biggest strength. I can post any time of the day and any time of the week. P4: “I normally use Moodle after class where I sent my students notes, slides, pdf files, and so on because if I sent before class they don’t come to class…” Last, P5: “I use Moodle to upload the content to students so in that regard there is no specific place allocated for that activity... anywhere when resources are available”.

From this Phase One, I deduce that geography lecturers are able to embrace all three categories of learning space in their responses. These learning spaces are self-space (self-experience), direct-space (specialised-experience), and indirect-space (shared-experience). For instance, P1: “I teach in lecture halls and via Moodle during specified times, as per the timetable, I also teach Geography using Moodle when I’m away from the office”. Geography lecturers teaching geography using Moodle are driven by specialised-experience in which they have direct contact with the student, meaning they are utilising direct-space. Also, they teach geography using Moodle, driven by shared-experience in which they have indirect contact with the students, meaning that they utilise indirect-space: they teach even when they are away from university premises. Similarly, P3: “teaching and learning is taking place
anywhere; inside and outside the classroom, and any time. This is probably the Moodle’s biggest strength. I can post any time of the day and any time of the week”. Geography lecturers are thus driven by specialised and shared-experience when teaching geography using Moodle. Even though lecturers’ experiences were informative at this phase, none of them indicated the use of self-space; therefore Phase Two was significant because lecturers do account for self-experience.

Phase Two

P1: “When teaching using Moodle, you are not confirmed in one place... even the issue of time, there is no specific time at which you can teach use Moodle, a good example; this year students have embarked on strike more than five times but I’m up-to-date with my course outline because of Moodle... I use University laptop, unlimited Wi-Fi and my phone in some instances”. P2: “all venues on campus available that can accommodate large number of students, in particular Geography 210 and 220, we use the auditorium because it can accommodate about 400 students... regarding time, no specific time anytime I use Moodle”. P3: “…Moodle can be used anywhere when teaching as long as I have access and my students also can have access to it...I post any time of the day and any time of the week”. P4: “…I use Moodle after class, no notes or slides sent before class because if I do that they don’t come to class”. P5: “…I’m the contract lecturer therefore we are not provided with laptops like permanent staff... when I’m home I use my personal laptop, my Internet here I only have desktop which I can’t take it home...”.

In Phase Two, geography lecturers included self-experience when using Moodle to teach geography. For instance, P1: “…I use University laptop, unlimited Wi-Fi and my phone in some instances”. In some instances, therefore, geography lecturers use their personal cellphones to teach geography. Also, P5: “when I’m home I use my personal laptop, my Internet, here I only have desktop which I can’t take it home...”. The participant using a personal laptop and Internet indicates that, at times, geography lecturers are using their personal resources to teach students, particularly when they are away from university resources. In this phase, geography lecturers are driven by self-experience when teaching geography using Moodle, which was not included in the first phase. This is a sign of transformation or new knowledge gained by geography lecturers. All in all, I accept that,
based on learning space and time, Moodle is used within the prescribed university venues and time. This addresses the needs of the specialization, meaning that this is driven by specialised-experience which prevails mostly during Phase One. Furthermore, teaching of geography using Moodle can also take place outside the university venues and time; which addresses the needs of the students, meaning driven by shared-experience. This prevails mostly during Phase One. Furthermore, at the time, geography lecturers used their self-space (homes) and self-resources (cellphones, Wi-Fi/Internet and laptops) to teach geography, which addresses self-needs; meaning that these lecturers are driven by self-experience. This prevails during Phase Two.

5.9 Theme Seven: Assessment

How do you assess students?

Taras (2005) acknowledges that assessment is a process, therefore steps are required to fulfil this process of assessment. Part of those steps include understanding goals, objectives, and aims. All forms of assessment require parameters that are either explicit or implicit. By the same token, Kennedy et al. (2006) acknowledge that assessment must be aligned with goals, objectives, and aims. Other concepts of curricular benchmarks are important, such as resources, tasks, teaching and learning space, teaching time, teacher’s role, content, and accessibility. For the assessment component, geography lecturers are expected to respond to three categories of assessment, namely, summative assessment (assessment of learning), formative assessment (assessment for learning), and peer-assessment (assessment in learning) (Scriven, 1967; Black, 1998). Summative assessment is aligned with specialised-experience (specialised-assessment) because it assesses the subject content with the aim of grading the student at a specific time (Kennedy et al, 2006; Bloom, 1969; Harlen & James, 1997Garrison & Ehringhaus, 2007). Formative assessment is aligned with shared-experience (shared-assessment) because shared-assessment is based on helping the students to overcome learning problems, and to encourage students to perform better. Harlen and James (1997) argue that shared-assessment considers certain skills and the behaviour of the student. It is concerned with reliability, and it recognises that students should be active in their learning process. Last, peer-assessment (self-assessment) is aligned with self-experience which aims at personal development and understanding of a teacher or student.
Phase One

P1: “Formative tasks are given to students throughout the semester. There are two formal tasks that are given to students and they account for 40% of the final mark. The weekly tasks contribute 10% of the final mark. Then at the end of the semester the students are expected to write an exam (summative assessment)”. P2: “… I log in as a lecturer and am able to upload and send messages amongst other activities to students…”. P3: “There is no obligation to use Moodle by students. Generally, I make announcement in class on the resources posted on Moodle. Students are not obliged to go on Moodle. Any resources posted on Moodle are complemented class announcements”. P4: “I upload weekly tasks for students…projects are formal so they don’t go to Moodle… all in all formal task are not uploaded but I do upload the results on Moodle…”. P5: “I’m not that active on that aspect of Moodle.... However, I only focus on the informal assessment when assessing using Moodle where they write quiz tests, open book tests where ever they are, these tests are there to measure each one level of understanding”.

From geography lecturers’ responses in this phase, I deduced that only two levels of experience drive lecturers’ assessment of their students. Formative and summative assessment dominate the first phase of this aspect. This is evident from P1: “Formative tasks are given to students throughout the semester. There are two formal tasks that are given to students and they account for 40% of the final mark. The weekly tasks contribute 10% of the final mark. Then at the end of the semester the students are expected to write an exam (summative assessment)”. This account indicates that this geography lecturer is driven by specialised-experience, in which the needs of the specialization/module content are at the centre of teaching and learning. Some geography lecturers are following a vertical/performance curriculum in which the specialization needs are central to teaching and learning: the focus is on grading the students. More than specialised-assessment, geography lecturers are also driven by shared-experience when assessing their students. This is evident from P5: “However, I only focus on the informal assessment when assessing using Moodle where they write quiz tests, open book tests where ever they are, these tests are there to measure each one level of understanding…” Lecturers are driven by shared-experience when assessing students. Shared-assessment is aligned with a horizontal/competence curriculum.
Because geography lecturers did not reflect on the aspect of self-assessment which is driven by self-experience there was a great need to conduct Phase Two of this assessment concept.

**Phase Two**

P1: “... my assessments are mixed, formal, and informal or continuous... I have over 300 students, so I don’t mark all of them, for the informal I normally take 10% of students work and screen through it than I do have a picture of what is happening in class...” P2: “I assess them and also grade them because Moodle allows us to grade them... I gave them group work, presentations, and projects... few instances where they assess each other, one or two occasions, I left it because I think it was time wasting...” P3: “most of the tasks are formal, very difficult to assess informal tasks, but I do use quiz tests on Moodle, group work, presentations and discussions but with that I don’t think we do get what we want because few students dominate the groups others are passive...for instance in my honours class we discuss each other presentation via Moodle first before its come to class as the formal presentation, other don’t participate”. P4: “I use quiz tests, they do it via Moodle, just to check their understanding of what I taught to them, tests and examinations are not done on Moodle but I think Moodle has a potential doing that but that element is not propagated”. P5: “...I use quiz tests, upload topics on Moodle for them to discuss and practical”.

In this phase, some geography lecturers indicated that they use peer-assessment; others still maintain that they use specialised and shared-assessment. This is evident for P2: “I assess them and also grade them because Moodle allows us to grade them... I gave them group work, presentations and projects... few instances where they assess each other, one or two occasions, I left it because I think it was time wasting”. P3: “most of the tasks are formal, very difficult to assess informal tasks, but I do use quiz tests on Moodle, group work, presentations and discussions but with that I don’t think we do get what we want because few students dominate the groups others are passive...for instance in my honours class we discuss each other presentation via Moodle first before its come to class as the formal presentation, other don’t participate”. These postulations signify that geography lecturers were not aware of self-assessment during the first phase. In Phase Two they are aware because they are were given clues on categories of assessment. Also, because they regard
self-assessment as a time-wasting form of assessment, they did not mention it during Phase One.

5.10 Theme Eight: Accessibility

**Do you have access to Moodle?**

In the context of education, accessibility means the right to education, regardless of political affiliation, socio-economic and cultural background (UNESCO, 2005). Similarly, the Constitution of South Africa Section 29 (1) stipulates that all people have a right to basic and further education; and that the government must make it available and accessible. All people are entitled to access equal education. The government has introduced free higher education to those who cannot afford it. Prior to this, basic education requires all schools to be No-Fee schools; currently 75% of our schools are No-Fee (Motshekga, 2018). According to van den Akker (2010), accessibility is about physical access to education; meaning the school is reachable for all. Cultural access implies removing any cultural barriers which hamper the right to education. Financial access suggests removing financial barriers that hamper the right to education. In this study, physical access is aligned with specialised-experience which is then named as specialised-access (meaning access to a formal institution of learning). Financial access is aligned with shared-experience which is named as shared-access (meaning access to education depends on financial dynamics of supporting the system). Cultural access is aligned with self-experience which is named as self-access (meaning one has the right and choice to adopt a specific culture). I regard some of these categories as most important because they are beyond the classroom parameters, but they contribute greatly to what happens in classrooms. Accessibility determines what happens in the classroom and how it happens.

**Phase One**

In this phase, participants were not aware of the three categories of accessibility. They responded mostly on the support they received from the university, colleagues, and to some extent, from students. Even during the interviews, their answers were not different from reflective activities.

P1: “I first created a log-in profile, thereafter, at the beginning of each semester I register the module so that the students and I would be able to access the module. Over and above this,
there is a person from ICS that I can e-mail when I am experiencing challenges and I also make use of ‘How To’ option on Moodle, to access information on the challenges that I face”. P2: “...the administrator or module coordinator sets up the module/s for Geography on Moodle. Then I, as the lecturer, have to be registered on Moodle by the person who set it up and has access to log me in before I can log in, thereafter I log in as a lecturer and am able to edit and send messages amongst other activities to students”. Also P3: “Yes. At the beginning of the semester, I enrol myself as a teacher. This gives me full access to upload, edit and remove resources on the platform”. P4: “I normally get assistance from ICT guys, administrators, even ICT students, they are very good...” P5: “I get access through the Internet”.

These lecturers’ responses indicate that lecturers are only reflecting on specialised-assessment, meaning they are driven by specialised-experience, in which they gain access and support only from within the confines of the university. This is evident from P1: “I first created a log-in profile, thereafter, at the beginning of each semester I register the module so that the students and I would be able to access the module. Over and above this, there is a person from ICS that I can e-mail when I am experiencing challenges and I also make use of How to option on Moodle, to access information on the challenges that I face”. Furthermore, P2, P3, P4 and P5 have all reflected on specialised-access. Specialised-access means lecturers position the module content at the centre of their teaching, since they have all the resources they need to drive the module. Other elements such as checking and knowing whether students have access to the same resources, are not considered in this phase (shared-access). Issues of language, gender, sex, age group, and race are also not considered in this phase. These issues are embedded in issues of culture (self-access). Since geography lecturers did not encapsulate shared-access and self-access, there was a great need for Phase Two to be conducted.

Phase Two

P1: “…I have access to University resources and students have access too, they have more than four LAN’s, moreover the National Financial Student Aid Scheme (NFSAS) has supported them through laptops programme which I believe is assisting students...”. P2: “I think it can collide with age, although I do not have such experience in my teaching”. P3: “…it’s easy to follow Moodle, I learn it on my own, I follow simple instructions... that
knowledge I pass it to my students, no difficulties at all, language that is use is very simple…”

P4: “I don’t remember any day where I come to campus hearing that Moodle is not available…at all the time Moodle is available. I think we have more than 100% support on that aspect, computers are available to all lecturers and students, once you are registered it is assumed that you understand the English language… This university is so diverse, but none have complained about not being accommodated by Moodle”. P5: “I normally depend on university Internet because it is free…”

In this phase, lecturers are able to embrace three categories of accessibility – self-access (culture), shared-access (financial), and specialised-access (physical). For instance, P2: “I think it can collide with age, although I do not have such experience in my teaching”. Moodle therefore appears to be used by the lecturers without any cultural barriers, as the resource that promotes effective teaching and learning. P1: “…I have access to University resources and students have access too, they have more than four LAN’s, moreover the National Financial Student Aid Scheme (NFSAS) has supported them through laptops programme which I believe is assisting students…”. Students are using Moodle without any financial barriers because students who are recipients of knowledge via Moodle are supported by NFSAS for laptops and the Internet is provided by the university. Students do not have to buy any hardware or software: all is provided, which makes it easy for teaching and learning of geography via Moodle. Last, is P5: “I don’t remember any day where I come to campus hearing that Moodle is not available…”. This indicates that Moodle is used within a confined university space and physical building where formal education is obtained. Geography lecturers are driven by specialised-experience (which was dominant during Phase One).

A curriculum that is driven by specialised-experience positions content at the centre of teaching and learning. When geography lecturers are using Moodle driven by their specialization, they are teaching to achieve module objectives which are embedded in performance/vertical curriculum. On the contrary, a curriculum that is driven by shared-experience is positioning the needs of the community at the centre of teaching and learning. When geography lecturers gain access to the teaching of geography using Moodle, being driven by student needs, they teach to achieve outcomes which are embedded in the
competence/horizontal curriculum. Last, when lecturers teach geography using Moodle they are being driven by self-experience: they are positioning their needs (as lecturers) at the centre of teaching and learning. They wish to achieve their aims of teaching which are embedded in a pragmatic curriculum (Bernstein, 1999; Khoza, 2016; Mpungose, 2016).

5.11 Conclusion of this Chapter

This chapter has systematically presented data analysis and a very informative discussion which was demonstrated by the use of a table that frames themes of curricular benchmarks. The table was not merely utilised but its fundamental aim is to properly channel the readers in the right direction. The curricular benchmarks, which are the cornerstone of this data analysis, are instrumental in all forms of curriculum, be they competence/horizontal, performance/vertical, or pragmatic curriculum. Each concept is important; therefore, it was also important for geography lecturers to learn about these concepts. Phase Two in each concept was conducted, except for the content concept. In most themes, geography lecturers were lacking the self-experience drive, particularly in Phase One. Specialised-experience and shared-experience dominated Phase One in almost all themes, because of the imbalance and individual capacity to accomplish the aims of a phenomenological research study, Phase Two in almost all themes was necessary.
CHAPTER SIX
RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

In the previous chapter, data was systematically presented using curricular benchmarks to frame discussion. Data that was analysed was generated from the reflective activities, artefacts, and one-on-one semi-structured interviews. In this chapter the focus is on theorising lecturers’ experiences that are systematically presented in previous chapters. The aim is to address the purpose of this study: to explore reimaging Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university. The purpose has been shaped by these three critical research questions as indicated below:

1. How do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university?

2. Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university?

3. What lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university?

In order to attain results, it was proper for this study to systematically engage ample literature that is related to this study. This greatly assisted in categorising experiences (phenomenon) into three domains, namely, self-experience, shared-experience, and specialised-experience. These experiences work as a single unit in driving a balanced curriculum. Furthermore, employing a critical paradigm together with phenomenological research study, has been a good choice. Ultimately, the aim was to understand lecturers’ experiences on Moodle as an effective learning management system. These experiences were to be gathered from lecturers’ daily practices. Data was generated in two phases. The first phase focused on exploration; and the second phase focused on sharing experiences and framing them into self-experience, shared-experience, and specialised-experience. This chapter aimed at summarising the whole
study, theorising findings which are key aspects of this chapter; recommendations and conclusion are included.

From the onset, this study affords a stimulating topic: “Reimagining Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university”. Such a topic stimulates in that there are very limited studies that speak to experiences on Moodle and geography. Furthermore, there are few and limited studies, if any, that speak to the South African context. Geography, as a module, has migrated from paper-based (traditional) to technology-based to meet the needs of a globalising society. This study is a qualitative study: its aim is to understand people’s social behaviour. Understanding the background of the topic supported the choice of the research paradigm, which is the critical paradigm. This paradigm was not merely chosen at face value: critical research objectives and research questions were considered to draw conclusions for this study. Furthermore, this study was framed by the Technological Pedagogical Content Knowledge (TPACK) theory. This theory was engaged on the basis that it captures almost all aspects of the curriculum and the topic being studied as a whole. Last, three methods of data generation were utilised – reflective activity, artefacts, and one-on-one semi-structured interviews. These methods were selected based on the need to fully answer the research questions.

The literature review as unpacked categorises experience into three spheres, namely, self-experience, shared-experience, and specialised-experience. These experiences have been clearly aligned with the curriculum, which has been defined from different perspectives. What these definitions have in common is that the curriculum is shaped by curricular benchmarks. Curricular benchmarks are composed of teaching targets, resources, content, lecturer disposition, tasks, teaching and learning space, teaching and learning time, assessment, and accessibility. Also, Moodle, as the teaching and learning resource that has been used in various universities, has been discussed in alignment with experience and curriculum. At this level this study has embarked on robust debates wherein extensive scholarly ideas and personal interpretation and understanding were explored. This has given more meaning to this study. At the same time it has developed within me my own self-space, shared-space, and specialization-space. Furthermore, in the literature, two major definitions
of curriculum have been put forth. One from Jan van Den Akker (2009) defines curriculum as self-experience which is the “plan for learning” (intended stage). The other from Pinar (2004) defines curriculum as specialised-experience “plan of learning” (implemented and attained). Further to that, curriculum spider-web concepts (Jan van Den Akker, 2009), which are referred to as curriculum benchmarks in this study, have been diffused into propositions. Those propositions are aligned with either self-experience, shared-experience, or specialised-experience.

The theoretical framework this study adopted was the Technological Pedagogical Content Knowledge (TPACK) by Shulman (1986). This theory was employed on the basis that each component of TPACK is accommodated or may be aligned with categories of experience and also with types of curriculum. For instance, self-experience is aligned with pedagogical knowledge and influences the pragmatic curriculum. Shared-experience is aligned with technological knowledge and influences horizontal/competence curriculum. Specialised-experience is aligned with content knowledge and influences the vertical/performance curriculum. On this carefully crafted configuration, the TPACK theory has been the only theory that enabled this study to match and explore the study phenomena. This theory did not only shape this study but also shapes my self-space, shared-space, and specialization-space. This grouping of concept is not focusing on the technological theory; rather, on the understanding of the curriculum that the teacher is drawing on at the end of this study. As with other theories, the TPACK theory has its own limitations and challenges that have been discussed extensively in the previous chapter.

The significance of the critical paradigm and phenomenological research in this study, I have noted, is that the critical paradigm gives the impression that empowerment of some sort must take place within the study. Such empowerment would be in the sense that teachers have gained understanding of curriculum benchmarks, whereas before this study they were not aware of such curriculum concepts. Furthermore, teachers developed a sense of understanding of the world of experiences, which was the most interesting aspect of learning during data generation. Geography lecturers were enabled to find their personal identity with the curriculum they are teaching, in the form of self-experience which encompasses the needs of the lecturer. Teachers are enabled to consider the needs of their students within the
curriculum they are teaching, per the shared-experience which encompasses the needs of the community. Last, teachers are enabled to maintain their specialization within the curriculum in the form of specialised-experience which encompasses the needs of the module content. Phenomenological research has been instrumental in this study, ensuring that lecturers’ experiences are understood and are aligned with the relevant type of experiences.

Table 6.1: Themes, Grouping of Lecturer’s Responses, and Types of Experience

<table>
<thead>
<tr>
<th>Themes (Curriculum Benchmarks)</th>
<th>Grouping of Responses</th>
<th>Types of Experience</th>
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<tbody>
<tr>
<td>4. Teaching Targets</td>
<td>Targets for teaching (Aims)</td>
<td>Self-experience</td>
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<td></td>
<td>Targets as teaching (Outcomes)</td>
<td>Shared-experience</td>
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<td></td>
<td>Targets of teaching (Objectives)</td>
<td>Specialised-experience</td>
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<tr>
<td>5. Resources</td>
<td>Software resources</td>
<td>Shared/specialised-experience</td>
</tr>
<tr>
<td></td>
<td>Hardware resources</td>
<td>Shared/specialised-experience</td>
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<td></td>
<td>Ideological-ware resources</td>
<td>Self-experience</td>
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<tr>
<td>6. Content</td>
<td>Content knowledge, Content expertise</td>
<td>Shared-experience</td>
</tr>
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<td></td>
<td>Curriculum knowledge</td>
<td>Self-experience</td>
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<tr>
<td>7. Lecturer disposition</td>
<td>Instructor</td>
<td>Self-experience</td>
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<tr>
<td></td>
<td>Facilitator</td>
<td>Shared-experience</td>
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<td></td>
<td>Evaluator</td>
<td>Specialised-experience</td>
</tr>
<tr>
<td>8. Tasks</td>
<td>Teacher-based</td>
<td>Self-experience</td>
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<td></td>
<td>Problem-based</td>
<td>Shared-experience</td>
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<td></td>
<td>Content-based</td>
<td>Specialised-experience</td>
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<td></td>
<td>Direct space</td>
<td>Indirect space</td>
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<td><strong>9. Teaching &amp; Learning space</strong></td>
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<tr>
<td><strong>10. Teaching &amp; Learning time</strong></td>
<td>Working hours/days/weeks/semester</td>
<td></td>
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<tr>
<td></td>
<td>Spare time</td>
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<td></td>
<td>After-work hours</td>
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<tr>
<td><strong>11. Assessment</strong></td>
<td>Self-assessment</td>
<td></td>
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<td></td>
<td>Shared-assessment</td>
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<td></td>
<td>Specialised-assessment</td>
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<tr>
<td><strong>12. Accessibility</strong></td>
<td>Self-access</td>
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<td></td>
<td>Shared-access</td>
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<td>Specialised-access</td>
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The use of three methods of generating data, namely, reflective activity, artefacts, and one-on-one-semi-structured interviews, was instrumental in affirming the grouping of the three types of experiences, aligning them with curricular benchmarks to produce group concepts that formulate a balanced curriculum. Reflective activity was aligned with the first research question. Artefacts were aligned with the second research question. One-on-one semi-structured interviews were aligned with the third research question. Five geography lecturers were the participants in this study. The findings of this study indicate the need to frame the curriculum within the three propositions of experience; obviously embracing all curriculum benchmarks, as indicated in the table above. Within the findings, the curriculum is not balanced when it is being dominated by one or two propositions. Hence Phase Two of phenomenological research study was crucial for personal development of lecturers. This will enable lecturers to develop their students or consider their students in the geography curriculum. Last, for their own professional development, Zuma (2016), Mpungose (2015), Khoza (2016b), and Mabuza (2018) affirm that a balanced curriculum is one that addresses
these three levels: self, shared, and specialised needs. The following is the balanced curriculum that is rooted in lecturers’ experiences.

Figure 6.1 Generated from the interpretation of literature and findings

Figure 6.1 above details an illustration of a balanced curriculum in which the centre (inner triangle) is occupied by experience. Experiences is placed at the centre for two main reasons: first, because it is the study phenomena, therefore the study must demonstrate understanding from beginning to end. Second, the curriculum cannot take any direction or balance when experience is at the centre, or misunderstood, or misrepresented. Experience is the point of departure regardless of types of curriculum that we are advancing. Experiences are constituted from self-experience, which advances a pragmatic curriculum; shared-experience, which advances a horizontal curriculum; and specialised-experience, which advances a vertical curriculum. These are out of the centre (main triangle). These three categories of
experience and curricula are underpinned by curriculum benchmarks as identified in Table 6.1 above. A balanced curriculum must embrace all three categories of experience, as indicated. The second phase of data generation was based on finding a balance in what geography lecturers are practising on a daily basis. Last, this curriculum acknowledges issues of culture and norms, values, religion, and identity.

6.2 Alignment between Self-Experience and the Pragmatic Curriculum
Self-experience is about the needs of the teacher/lecturer. Such needs place emphasis on the teacher’s uniqueness, identity, individual capabilities, and weaknesses (Khoza, 2016b; Mpungose, 2017). In this theory, I define self-experience from the teacher’s perspective; as a technique for finding oneself, being aware of who one is, and one’s limitations. This theory regards the pragmatic curriculum as the openness of the curriculum to individual uniqueness. This category of experience acknowledges that human beings are all different, therefore individual talent and difference must be central when dealing with an act of teaching and learning. These needs may be advanced only when the curriculum is pragmatic. A pragmatic curriculum centralises individual uniqueness. The theory starts with the concept of a target for learning. Teaching targets are based on the teacher’s needs: when the teacher stipulates targets the first beneficiary is the self. When targets are for teaching that will lead to the teacher’s understanding of the resources used to drive the lessons, this is referred to as ideological-ware resources. These are informed by the theories of teaching. When a teacher applies these theories correctly, teaching and learning become successful. Moreover, it is also likely that the teacher will understand how to effectively use hardware and software resources that are relevant to the teaching of the content. Understanding of the content means understanding one’s role in the classroom.

6.3 Alignment between Shared-Experience and the Horizontal Curriculum
Once again, shared-experience is based on placing the needs of the community (students) at the centre of teaching and learning (Khoza, 2016b; Mpungose, 2017). This theory defines shared-experience as collective principles of action where there is no one specific answer to guide actions. This theory regards the horizontal curriculum as openness of the curriculum to the collective principles of society. Shared-experience means that curriculum prioritises the community. The community comprises many individuals whose needs and strengths are different. However, they also have something in common, which includes sharing space, and social interaction. This requires the curriculum to be open to these differences and
The only curriculum which can advance the needs of the community is the horizontal curriculum. Curriculum benchmarks that underpin a horizontal curriculum are open and based on addressing the needs of the community. The first concept is targets-as-teaching – teaching targets must address students’ needs, therefore teachers have to plan on targets informed by what students desire. Software and hardware resources are utilised. This is aligned with the teacher’s designation, which is facilitating. Learning is problem-based, in which teachers utilise direct-space when teaching. The horizontal curriculum is not specific in time: teachers teach at any time, and assessment is shared, meaning based on the needs of the students.

6.4 Alignment between Specialised-Experience and the Vertical Curriculum

Once more, specialised-experience is based on placing the needs of specialization at the centre of teaching and learning (Khoza, 2016b; Mpungose, 2017). This theory defines specialised-experience as a sound enquiry demarcated by specific time, explicit language and a clear context: specific answers guide action. The vertical curriculum is the openness of the curriculum to this demarcated enquiry. Specialised-experience regards time as one of the most critical factors that distinguishes it from self-experience and shared-experience. Time provides time frames of curriculum coverage, language, and context which distinguishes it from other disciplines. The only curriculum which can advance specialised-experience is the vertical curriculum because there is alignment between the two. The vertical curriculum begins with targets of teaching, meaning that the specialization needs are central to teaching. Hardware and software resources are utilised to drive the specialization. An important aspect is that a teacher must be a content expert in order to drive specialization and have sufficient curriculum knowledge. The teacher’s designation is as an evaluator, providing content-based learning, and using indirect space. This is also characterised by specific working hours, specialised assessment (meaning formal assessments), and specialised access (meaning use of physical buildings for teaching and learning).
6.5 Summary of Findings from Phase One

Phase One was an explorative phase in which the focus was on finding what is known by geography lecturers in relation to their teaching of geography using Moodle. Curricular benchmarks were used to frame lecturers’ responses. In this phase, geography lecturers were not aware of the three categories of experience and curriculum benchmarks. Using reflective activities, artefacts, and one-on-one semi-structured interviews led us to the conclusions drawn as follows on each of the concepts of the curriculum benchmarks.

6.5.1 Unbalanced teaching targets (rationale)

From the finding on the previous chapter, it is clear that geography lecturers were not aware of their teaching targets. Categories of experience, namely, self-experience, shared-experience, and specialised-experience were not clear to geography lecturers. When lecturers reflected on these concepts they were not balancing all three categories; for instance, Phase One was more a shared-experience from geography lecturers: lecturers were driven by the needs of their students when teaching geography using Moodle. The majority of lecturers were using Moodle mainly for communication with their students. However, some lecturers were driven by specialised-experiences. They indicated that they used Moodle to send readings, slides, and so on, to their students. This encourages us to conclude that, during Phase One, geography lecturers only focus on the horizontal curriculum (shared-experience) and vertical curriculum (specialised-experience).

6.5.2 Unbalanced teaching resources

On this concept, geography lecturers only reflected on the two categories of resources – software and hardware. From reflective activities to one-on-one interviews, none indicated ideological-ware. This led to the conclusion that geography lecturers are not aware of ideological-ware. They do not regard themselves and their theories of teaching as one of the resources that influences teaching and learning. These geography lecturers are following horizontal and vertical/performance curriculums. On this concept, self-experience, which drives pragmatic curriculum, is missing. Khoza (2012), Makumane (2018), and Mpungose (2017) note that the lack of ideological-ware resources may be challenging because those resources exist in the teachers’ minds, which leads to better selection of hardware and software resources. Ideological-ware resources are the first resources available when teaching. When ideological-ware resources are missing, the curriculum is not balanced, hence
Phase Two was of paramount importance in helping teachers to understand themselves as critical resources in teaching and learning.

6.5.3 Balanced content
On this concept Geography lecturers indicate clear understanding of their module content, all citing specific topics they taught in their respective classes and during semesters. Each of those topics was stipulated in their respective module guides. Geography lecturers therefore have a clear understanding; the module guide indicates they are driven by specialised-experience. Further to this concept, geography lecturers have demonstrated understanding of their teaching methods. This suggests that they are driven by self-experience in which their theories of teaching are utilised to teach students. Furthermore, geography lecturers have indicated a great understanding of methods modules that are used to teach geography students to become good future teachers. This suggests that geography lecturers are driven by shared-experience. This was the only concept on which geography lecturers displayed a balance between all three categories of experience. This indicates that the curriculum is balanced, hence there was no need for Phase Two on content.

6.5.4 Unbalanced lecturer designation
On this concept, geography lecturers indicated that they are facilitating when teaching geography using Moodle. On all three methods of data generation (reflective activities, artefacts, and one-on-one interviews) geography lecturers stand firm in their designation as facilitators when teaching geography. Geography lecturers are therefore not aware of other job descriptions they have when teaching geography. For them, being facilitators means they are driven by shared-experience (student needs) and advancing an horizontal curriculum. Their designation as evaluators, as determined by their specialization, is neglected, meaning that the vertical curriculum is neglected. Their designation as determined by self-experience, is also neglected. Therefore experiences and curriculum are not balanced: the curriculum must be balanced, and hence there was need for Phase Two.

6.5.5 Unbalanced geography tasks
This concept arises from three propositions, namely, teacher-centred, student-based, and formal tasks. On this concept, geography lecturers were driven by shared-experience and
specialised-experience when giving tasks to students. From the findings we deduced that geography lecturers are more concerned about the students they teach, therefore tasks are designed to address student needs. Geography lecturers focus more on a horizontal curriculum. In addition, tasks are designed to address the needs of the specialization or the module. Geography lecturers also focus on tasks that address the vertical curriculum. Self-experience, which advances the pragmatic curriculum, is missing, therefore the curriculum and experiences are not balanced. The curriculum must be balanced, and hence there was a need for Phase Two.

6.5.6 Unbalanced teaching and learning space and time

This concept is comprised of three propositions, namely, self-space, direct-space, and indirect-space. The findings from this concept indicate that geography lecturers are utilising direct-space and indirect space when teaching geography. Lecturers are utilising official university venues for teaching and learning of geography (direct-space), and they are teaching geography when they are away from their students (indirect-space). Geography lecturers are advancing the vertical and horizontal curricula, while the pragmatic curriculum is missing, therefore Phase Two is required to develop teachers.

6.5.7 Unbalanced assessment

This concept is constituted from three propositions, namely, summative assessment, formative assessment, and peer-assessment. From the findings of the first phase we can conclude that geography lecturers are assessing their students on formative and summative assessment. Geography lecturers are driven by specialised-experience and shared-experience. Geography lecturers are advancing the vertical and horizontal curricula, while the pragmatic curriculum is missing. Therefore, Phase Two is required to develop teachers on peer assessment. Makumane (2018) notes that the exclusion of peer-assessment by educators means that they disadvantage the students. Students do not acquire the necessary skills that will help them to be critical thinkers and be responsible for their own learning.

6.5.8 Unbalanced experience on accessibility

This concept comprises three categories, namely, physical access to the school; cultural permission; and financial permission. The findings from the first phase regarding
accessibility indicate that geography lecturers only focus on what they have as university resources. All cited the support that comes from the administrative side of the university, support from their colleagues, and support from university ICS. None in this phase indicated knowledge of financial support and cultural support. Geography lecturers were not aware of these categories during the first phase. They reflected only on specialization and ignored self-experience and shared-experience. For this reason, Phase Two had to be conducted.

6.6 Summary of Phase One Findings

It is important to acknowledge that Phase One of this study was dominated by two categories of experiences for almost all curriculum benchmarks. As indicated in this theory, self-experience is placed out of the demarcated area: geography lecturers were not regarding self-experience as part of the curriculum they teach during Phase One. They considered experiences are shared-experience and specialised-experience. Self-experience remained uncovered. In relation to the curriculum this means that geography lecturers were advancing the horizontal and vertical curriculums, while the pragmatic curriculum is neglected. Concept propositions such as targets for teaching, ideological-ware, instructor, content-expert, teacher-based learning, blended-space, self-time, self-assessment, and self-access were not common in geography lecturers’ experiences during Phase One. The inability of geography lecturers to reflect on self-experience suggests that their needs are not regarded as an important aspect of the curriculum. In order to advance in the horizontal and vertical curricula, teachers must have a clear understanding of their individual identities before understanding the world around them. This study believes that when teachers understand themselves they are able to work on the weaknesses and strengths that will benefit the horizontal and vertical curricula.

It is clear from the findings that shared-experience and specialised-experience dominated the experiences space. Shared-experience relates to geography lecturers advancing the horizontal curriculum, which focuses on the students’ needs. It is important to drive the curriculum based on what students need, because the teacher is able to reflect and provide direct solutions according to students’ performance. This study regards shared-experience as an important experience. People become teachers because of students. A teacher has the responsibility of fulfilling the needs of students, and therefore the needs of the students must be central to the curriculum. Shared-assessment and shared-access were utilised by
geography lecturers. Be that as it may, focusing on the needs of the students has its own pros and cons. Amongst them is time and various communities whose diverse needs are to be accommodated. Specialised-experience relates to geography lecturers advancing the vertical curriculum, where the focus is on the needs of the specialization/content. Concept propositions such as the targets of teaching, software and hardware sources, content expert, curriculum knowledge, content-based learning, evaluator, indirect space, specialised-assessment and specialised-access were employed during Phase One.

6.7 Summary of Phase Two Findings

Phase Two was a transformation phase in which the focus was on transforming geography lecturers based on the findings from Phase One. Before this phase or experiences at this phase, geography lecturers were first engaged through a presentation and workshop on experiences: self-experience, shared-experience, and specialised-experience. Furthermore, curriculum benchmarks and propositions were extensively dismantled and aligned with each category of experience. What is noticeable in Phase Two is that geography lecturers were not aware of categories of experiences, although they were aware of some curriculum benchmarks. However, concept accessibility was not regarded as a curriculum benchmark. Lecturers reflected on this as a proposition during Phase One. Phase Two was important in this study because it allowed transformation, which was not going to be accessible anywhere else: only a rigorous process such as this made it possible. Again, three methods of data generation were utilised: reflective activities, artefacts, and one-on-one semi-structured interviews, which led to the conclusions drawn.

6.7.1 Teaching targets

Teaching targets (rationale) are composed of three propositions as indicated in Chapter Six; targets for teaching (personal), targets as teaching (community), and targets of teaching (content). Geography lecturers reflected upon all these teaching target categories, which was not the case during the first phase. Geography lecturers were therefore transformed. With targets for teaching, lecturers indicated that they are teaching geography because they have a love for Moodle. A love for Moodle suggests that lecturers are reflecting on self-experience which did not happen during Phase One. This is a huge achievement in this study because this means the needs of the teachers are considered as part of the reasons for teaching geography. With targets as teaching, teachers indicate that they teach geography using
Moodle because they wish to communicate with their students. This means that community (students) is important in their teaching. Last, lecturers indicate that they are teaching geography using Moodle because of university policies which say so, and they believe that Moodle is there to assist them in the effective teaching and learning of geography. In their teaching, lecturers are controlled by specialization needs. In this phase all three categories of experiences were addressed.

6.7.2 Teaching and learning resources
Teaching and learning resources are composed of three propositions: ideological-ware, software, and hardware resources. These resources are also aligned with three categories of experience, as indicated in the previous chapters. In this phase, geography lecturers reflected on all the three propositions. This came about after the lecturers were taken to task on these concepts. On ideological-ware resources, lecturers demonstrated better understanding than in the first phase; and acknowledged that they are the first resource in the classroom; however, this did not cross their minds during Phase One. Realization came after they had reflected on particular theories that inform their teaching, and after deciding how they include these theories in geography content. Software and hardware resources was not an area of interest because almost all lecturers reflected upon such correctly during Phase One.

6.7.3 Geography content
During Phase Two, Geography content was not included as part of the experiences because geography lecturers displayed good understanding of the content they teach. The categories of experiences were covered during Phase One. I believe that geography content was fully covered because geography lecturers are the subject experts and they have knowledge of the curriculum they teach, which is informed by the qualifications they have as presented on their profiles (Chapter Six). Three lecturers have their PhDs in geography and two lecturers have their Master’s in geography. Their qualifications are signals of being geography experts. Hence this concept was well covered in the first phase: they have mentioned module outlines, time frames, specific topics taught at each level, and methods modules.
6.7.4 Lecturer designation

Lecturer designation (teacher role) is made up of three propositions, namely, instructor, facilitator, and evaluator. The propositions are aligned with each category of experience, for instance, instructor is aligned with self-experience. When a lecturer/teacher instructs, he or she applies personal descriptions in teaching students. The facilitator is aligned with shared-experience. At this level a lecturer/teacher aims at allowing students (community) to dominate and be active in their learning, the teacher remaining passive. This suggests that the needs of the students are important when lecturers possess the facilitator role. Last, is evaluator. This proposition is aligned to specialised-experience. When a lecturer possesses the evaluative role this means that the needs of the specialization are central to teaching and learning. In this phase, geography lecturers reflected on all of these three categories of lecturer designation which did not happen during Phase One. Geography lecturers reflected on self-experience in the form of the instructor; and reflected on specialised-experience in the form of the evaluator which they had not taken seriously before. Geography lecturers therefore learned something from this study. All forms of curriculum were covered by this stage: horizontal curriculum (facilitator), vertical curriculum (evaluator), and pragmatic curriculum (instructor). The covering of all three curriculums in one concept (lecturer designation) produced a balanced curriculum.

6.7.5 Tasks

As indicated in the first phase, tasks are categorised into three, as with other concepts that have been discussed. Tasks are composed of teacher-based tasks; meaning that these tasks are designed by the teacher to suit their personal interests. The teacher decides what is correct at that time, and what they wish students to learn. These tasks are addressing what geography students should know as specialists in geography, not what their teacher wishes them to know or what they wish to know. Again, these tasks are aligned with each category of experience. Teacher-based tasks are aligned with self-experience, problem-based tasks are aligned with shared-experience and content-based tasks are aligned with specialised-experience. In this phase, all the three categories of tasks were covered by geography lecturers’ experience. This did not occur during Phase One. Each of these tasks advance a particular curriculum, for instance, teacher-based tasks advance a pragmatic curriculum; problem-based tasks advance a horizontal curriculum; and content-based tasks advance a vertical curriculum. When geography lecturers reflect on all of these tasks in Phase Two, the balanced curriculum is to
be considered when designing a curriculum whereby all needs are accommodated to one curriculum.

6.7.6 Teaching and learning space and time

As with all other curriculum benchmarks, teaching and learning spaces comprise three propositions as indicated in the first phase. It is important to note that the time concept is a stand-alone concept; however, in this and previous chapters it is combined with teaching and learning space because of common ideas held. These propositions are: direct space, reflecting that a lecturer utilises university official space (lecturer room) to teach students face to face. This requires specified university times or as per timetable. Indirect space, remote teaching and learning means that teaching and learning take place at a distance. Self-space/blended space: this an amalgamation of both direct and indirect spaces of teaching and learning. These propositions are also aligned with each category of experience as previously indicated: direct space is aligned with specialised-experience. This means that the teacher utilises official university venues to drive the content. Both of these concepts advance the vertical curriculum which centralises specialization/content at a specified time. Indirect space is aligned with shared-experience. Lecturers and students do not have to meet face-to-face for teaching and learning to occur; they may engage anywhere and anytime teaching and learning can occur because socialization is centralised. These are (indirect space and shared-experience) advancing a horizontal curriculum in which time is not centralised as the measurement of work to be covered. Self-space/blended space is aligned with self-experience. Lecturers are utilising their own space, time, and their own resources to teach students. When geography lecturers reflect upon self-space they mean that they are advancing a pragmatic curriculum. In this phase, all three categories of teaching, learning space, and time were covered by geography lecturers’ experiences, in particular the self-space, which was not covered in the first phase. Balanced curriculum is to be considered when universities wish to provide a balanced curriculum in which all needs are incorporated into one curriculum.

6.7.7 Assessment

Assessment incorporates three categories: self-assessment (peer assessment); shared-assessment (formative assessment); and specialised-assessment (summative assessment). Such assessment categories are aligned with various categories of experience; self-assessment is aligned with self-experience – the teacher is assessing him- or herself. Shared-assessment
is aligned with shared-experiences. Students are assessed with the aim of finding their understanding, hence group work, homework, and so on is more evident in the shared-assessment. In specialised-assessment, which means assessment for the specialization/content, students must be graded not as a collective, but each one as a unique individual, hence tests and examinations are evident in this form of assessment. Furthermore, these assessment categories are advancing a particular curriculum. For instance, self-assessment advances the pragmatic curriculum; shared-assessment advances a horizontal curriculum; and specialised-assessment advances the vertical curriculum. In Phase Two, geography lecturers were enabled to reflect upon all of these categories of assessment which did not prevail during Phase One. The gap or the omitted assessment during Phase One was self-assessment. Phase Two was then able to rectify that and geography lecturers were transformed. A balanced curriculum must therefore be based on embracing all the three categories of experience.

6.7.8 Accessibility

Similarly, the concepts of accessibility comprise three propositions: self-access (finance access), shared-access (cultural access), and specialised-access (physical access). These propositions are aligned with each category of experience. Self-access is aligned with self-experience, meaning personal interests, and the financial constraints to education. Shared-access, meaning the issues of culture (age, sex, gender, language etc.) do not affect the right to teach or learn. Specialised-access, meaning the physical building of the school/university is available and reachable for lecturers and students. Again, these categories of accessibility are aligned with a particular curriculum. Self-access is aligned with a pragmatic curriculum; shared-access is aligned with a horizontal curriculum, and specialised-access is aligned with a vertical curriculum. During Phase One only one category was reflected upon – specialised-access. During Phase Two, geography lecturers were able to reflect upon these three categories of accessibility which helped to balance all three types of curriculum: pragmatic, horizontal, and vertical.
6.8 Implications of Phase Two Findings

First, it is important to admit that, had this study continued for a third phase, more tangible and observable results would be evident. Nonetheless, this study started on a good foundation for a balanced curriculum. Second is alignment of three categories of experience which are linked to the three categories of curriculum. These findings from the second phase are a statement to curriculum developers that educators are important to any curriculum and that their needs supersede all other needs. Owing to the imbalance of the curriculum, teachers fail to reflect on basic curriculum concepts that are directly speaking to their needs. For instance, most lecturers were not aware that they are amongst the ideological driving resources in the classroom. My argument is that teachers are not passive, but they are not exposed to a pragmatic curriculum which places their needs at the centre. For this reason they were not familiar with addressing self-experience in Phase One. Through employing a critical paradigm and phenomenological research, the study was able to generate lecturers’ experiences; at the same time making lecturers aware of the curriculums (horizontal and vertical curriculums).

6.9 Responding to Critical Research Questions

The fundamental purpose of this study was to explore the reimaging of Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university. This study designed three critical research questions in order to achieve the purpose. These questions are aligned with research objectives. Using reflective activity, artefacts, and one-on-one semi-structured interviews, the following are the answers to each of the three critical research questions:

**Question One: How do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university?**

Geography lecturers’ experience falls into three categories. First, there is specialised-experience. In this category, lecturers were reflecting on their vertical curriculum in which the needs of the specialization is at the centre of teaching and learning. Curriculum benchmarks propositions, the building blocks of specialised-experience, were used by participants when responding to questions. These propositions are: targets of teaching, software and hardware resources, content experts, curriculum knowledge, evaluator, content-based learning, and direct space, teaching during the specified working hours, specialised-assessment, and specialised-access. In Phases One and Two geography lecturers indicated a
great understanding of the content they teach, to the extent that the content concept was not needed for a second phase. Geography lecturers placed content at the centre of their teaching, hence sharing of experiences was informative on the content concept.

Second, there was shared-experience. In this category, geography lecturers were reflecting on their horizontal curriculum. At this level the curriculum comprises propositions as follows: targets as teach, software and hardware resources, content knowledge, facilitator, problem-based learning, in direct place, teaching and learning take place anytime, shared-assessment, and shared-access. Lecturers’ responses addressed the students’ needs, which means that they are placing community at the centre of teaching and learning. Almost all geography lecturers believe that the rationale behind Moodle is for communication with students, therefore whatever they do regarding the teaching of geography, students must come first.

Third came self-experience. In this category, geography lecturers reflected on the pragmatic curriculum. Propositions that constitute a pragmatic curriculum are: targets for teaching, ideological resources, instructor, content expert, teacher-based, blended space, teach any time, self-assessment (peer-assessment), and self-access. These propositions were observed on lecturers’ experiences, particularly during Phase Two.

**Question Two: Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university?**

The possible reasons for lecturers to reflect in this way are that Moodle was made compulsory at the university yet no plans were put in place for proper implementation. Lecturers were not workshopped on the living policies of Moodle, or what they knew they could learn on their own, using available training documents on Moodle. Moodle was introduced by the university which aims to move from paper-based to e-learning. However, people who are supposed to initiate the implementation are not on a par with the expectations of the university. This means that the university wants lecturers to operate on a vertical curriculum, in which lecturers are able to deliver content rapidly with the university providing course packs. This indicates imbalance between the university needs and lecturers’ needs. Lecturers need thorough training on Moodle in order to successfully deliver the content, whilst the university is proving Moodle as the teaching and learning resource.
Question Three: What lessons may be learnt from lecturers’ experiences on using Moodle in teaching geography at a South African university?

The lessons that may be learnt from these experiences are that all three categories of experience are important. When they are all included in the curriculum, a balanced curriculum is produced. Under lecturers’ experience, a shared-experience dominated, followed by specialised-experience, particularly in Phase One. This suggests that lecturers use Moodle based on the views of students first (horizontal), following later what is needed by the university (vertical). At the same time there are no policies that govern the university on Moodle. More importantly, the university must allow lecturers to be part of the curriculum. Their needs must be catered for within the curriculum of Moodle. At the same time, Moodle needs must not be imposed on the needs of the students and that of the specialization.

6.10 Recommendations

Recommendation one: revise and review the current guidelines and manual for implementation and adoption of Moodle.

It is recommended that a task team be constituted under the portfolio of university teaching and learning in collaboration with relevant stakeholders such as tuition managers and ICT. The task team be given six months to revise and review the current manual/guideline on Moodle. The findings from this study show that academics are not fully understand how to go about accessing and implementing the Moodle learner management system to innovate their teaching practices. The manual and guideline must include practical examples through an algorithmic approach (step by step) in order to hold the academic by the hand on how to implement Moodle, what its functionalities are and the relevance of each of the functionalities on Moodle. It is further recommended that a manual or guideline be developed for students as well on what the functionalities are on Moodle and how these functionalities can improve their learning, communication and practice.

Recommendation two: Continuous professional learning (CPL) for academic staff

It is recommended that online short courses be developed for academics on Moodle. The short course should target: basic course on Moodle, intermediate course on Moodle and advanced course on Moodle. The CPL should be linked to the key performance indicators of
all academics staff. For academic promotions, it is recommended that completion of short courses on Moodle training be used as a criteria. It is also recommended with Senate approval that in order to qualify for academic promotions, academic staff must accumulate Continuous Professional Development (CPD) points, hence it is assumed that there will be greater uptake to attend and complete the online short courses on Moodle.

Recommendation Three: Conduct a Baseline study on teaching and learning

It is recommended that a base line study be conducted to establish pedagogical frameworks implemented in each of the colleges at the selected University in this study. Based on the results and findings that are concluded in the baseline study, the University portfolio on teaching and learning should revise its current policies and guidelines on:

- College pedagogical framework
- Teaching philosophies of academics to consider philosophies and theories related to teaching and learning in digital ages
- Continuous professional learning opportunities for academics- HR related systems and processes for training and development
- Curriculum transformation frameworks of colleges to include technology enhanced teaching and learning focusing on Moodle (learner management system)
- Assessment for learning and assessment of learning through Moodle platform

6.11 Conclusion of this Study

The fundamental aim for this study was to explore reimaging Moodle as an effective learning management system through the experiences of geography lecturers at a selected South African university. Exploring this topic required three critical research questions, namely: 1) how do geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South African university? 2) Why do lecturers reflect in particular ways on the use of Moodle in teaching geography at a South African university? and 3) What lessons may be learnt from lecturers’ experiences of Moodle as an effective learning management system (LMS) at a selected South African university? These questions were informed by three research objectives, namely, to explore how geography lecturers experience Moodle as an effective learning management system (LMS) at a selected South
African university; to explain the reasons for lecturers to reflect in particular ways on the use of Moodle in teaching geography at a South African university; and to understand the lessons learnt from lecturers’ experience of Moodle as an effective learning management system (LMS) at a selected South African university. Attaining these objectives required the best crafted literature that explains the research phenomenon for the best understanding of the readers – literature that gives clear understanding of the curriculum, and concepts that encompass the curriculum. This phase of this study was based more on specialised-experience in which the information gained may be regarded as facts. Also, to attain the objectives of this study, utilization of a critical paradigm involves phenomenological research study, the use of the TPACK theory, choice of data-generation methods which include reflective activity, artefacts, and one-on-one semi-structured interviews. This phase of the study drew more from self-experience; information gained was based on my personal choice in terms of selecting what to employ. Also, the needs of the lecturers were taken into account when I employed artefacts, and when I worked based on their schedule. This took the position of shared-experience, which resulted in my professional schedule being disturbed. As a result, I failed to meet my targets dates for submission. This goes back to point that I mentioned earlier in shared-experience, that time is not important, instead what is important is to complete the activity.

Having said that, this study has recognised the same gaps between the three categories of experience. First, experiences are not understood by those who made Moodle an official tool for teaching and learning. Had they had understanding of all experience categories, more categories would be represented when introducing Moodle. Currently, the university does not have a policy on Moodle; this means that specialised-experience is neglected. The focus of the university is on producing students who are able to meet the needs of globalisation, and to save on paper (through printing) to encourage electronic learning which is cheaper and more environmentally sound. Also, self-experience, relating to the needs of the lecturers, is neglected. As a result, lecturers fail to establish their identity within Moodle and the curriculum they teach to students. Nonetheless, this study has been able to close that gap among geography lecturers through employing a phenomenological research study in which Phase Two was aimed at emancipating lecturers. Grouping of curriculum concepts and experience categories was then initiated. This grouping was conducted to balance the horizontal, vertical, and pragmatic curriculums, in order to teach successfully. To geography
lecturers, these three categories of experiences are important, because all needs are represented within the curriculum. I then suggest that lecturers must balance the curriculum they teach without compromising either themselves as lecturers, the students, and/or the geography content.

In this study, clear arrangements of chapters, with their illustrations, were indicated, which gave readers a comprehensive understanding of this study. Chapter One indicates the research synopsis. In this chapter the summary of the study is indicated. Chapter Two indicates a well-crafted literature review which explains the research phenomenon, curriculum, and Moodle. Chapter Three indicates curriculum benchmarks that are used to frame themes. Chapter Four indicates the theoretical framework (TPACK). Chapter Five is about data presentation and analysis. Chapter Six focuses on recommendations and the conclusion.
REFERENCES


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Schmidt, D. A., Baran, E., Thompson, A. D., Mishra, P., Koehler, M. J., & Shin, T. S. (2009). Technological pedagogical content knowledge (TPACK) the development and


Annexure A: Turnitin certificate

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Annexure B: ethical clearance

28 October 2017

Ms Sphiwe Zuma
School of Education
Edgewood Campus

Dear Ms Zuma,

Protocol reference number: HSS/1704/0160
Project title: “Critical understanding postgraduate Lecturers’ reflections of using Moodle in teaching Postgraduate modules at a South African University”

Exempted Approval

In response to your application dated 11 October 2016, the Humanities & Social Sciences Research Ethics Committee has considered the above application and the protocol has been granted FULL APPROVAL.

Any alteration(s) to the approved research protocol i.e. Questionnaire/interview Schedule, Informed Consent Form, title of the project, location of the study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

Please note: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully,

Dr Thembeka Singh (Chair)

pp

cc S. person: Dr SB Khosa
cc Academic Leader: Research:
cc School Administrator: Ms T himalol and Ms P Ntabiyana

Humanities & Social Sciences Research Ethics Committee
Dr Thembeka Singh (Chair)
Heuwelkruine Campus, Cnr Marais & Kerk Sts, Building
Postal Address: Private Bag X000, Durban 4000
Telephone: +27 (0) 31 269 6657 Fax: +27 (0) 31 269 6658
Email: ethics@ukzn.ac.za / academics@ukzn.ac.za
Website: www.ukzn.ac.za
14 May 2018

Mr Siphothile Zuma (SN 209506824)
School of Education
College of Humanities
Edgewood Campus
UKZN
Email: 209506824@sm.ukzn.ac.za  khozas@ukzn.ac.za

Dear Mr Zuma

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper’s permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate degree, provided ethical clearance has been obtained. We note the title of your research project is:

“Critical Understanding Postgraduate Lecturers’ Reflections of using Moodle in teaching Postgraduate modules at a South African University”.

It is noted that you will be constituting your sample by conducting interviews, and/or focus groups with Geography lecturers on the Edgewood campus.

Please ensure that the following appears on your notice/questionnaire:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

You are not authorized to contact staff and students using ‘Microsoft Outlook’ address book. Identity numbers and email addresses of individuals are not a matter of public record and are protected according to Section 14 of the South African Constitution, as well as the Protection of Public Information Act. For the release of such information over to yourself for research purposes, the University of KwaZulu-Natal will need express consent from the relevant data subjects. Data collected must be treated with due confidentiality and anonymity.

Yours sincerely

MR S MOKOENA
REGISTRAR
Dear Participant

INFORMED CONSENT LETTER

I am undertaking a research project on “Reimaging Moodle as an effective learning management system through the experiences of Geography lecturers at a selected South African University”, therefore, it will be highly appreciated if you could read this document, sign the declaration below and email it as an attachment to my email address 209506824@stu.ukzn.ac.za

The research is influencing the ways in which people are being educated and trained. South Africa, like any other developing countries, is forced to conduct studies of this nature in order to understand lecturers’ experiences. Therefore, this study aims at providing valuable information on Critical Understanding Postgraduate Lecturers’ Experiences of Using Moodle in teaching geography module at a South African University

Please take note of the following issues:

1. There will be no limit on any benefit that the participants may receive as part of their participation in this research project;
2. Answer all the questions;
3. Respond to each question in a manner that will reflect your own personal opinion;
4. Your identity will not be divulged under any circumstance;
5. There are no right or wrong answer;
6. All your responses will be treated with strict confidentiality;
7. Real names of the participants will not be used, but symbols such as A, B, C will be used to represent participants’ names;
8. The participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves;
9. The participants will not be under any circumstance forced to reveal what they don’t want to reveal; and
10. Audio or video recording will be made.

This research project is supervised by Prof. S.B Khoza. His telephone number is (031) 260 7595 at the University of KwaZulu-Natal and his email address is khozas@ukzn.ac.za

Thank you for your support, co-operation and valuable time: Best wishes from

S. Zuma
University of KwaZulu-Natal
Cell: 0744641583
Email: 209506824@stu.ukzn.ac.za

Please sign the following declaration and include your full names as indicated:

I………………………………………………………………………… (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

……………………………………                                          ………………………………………

SIGNATURE OF PARTICIPANT                                          DATE
Annexure E: certificate of proofreading

Pinpoint Proofreading Services

40 Ridge Rd
Kloof
Durban
3610
23 April 2019

To whom it may concern

This is to certify that I, Lydia Weight, have proofread the document titled: Reimaging Moodle as an effective learning management system through the experiences of Geography lecturers at a selected South African University by Sphesihle Zuma. I have made all the necessary corrections. The documents are therefore ready for presentation to the destined authority.

Yours faithfully

L. Weight