

# **NARRATIVES OF TEACHER LEARNING IN ADOPTING A BLENDED APPROACH IN A TERTIARY INSTITUTION**

by

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**A dissertation submitted in partial fulfilment of the academic requirements  
for the degree of Masters in Education  
in Teacher Development Studies**

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## **ABSTRACT**

The inclusion of technology has led to policy directives at tertiary institutions that impact the way in which teaching, and learning takes place. The focus of this study was on the ways in which lecturers learn to use new technological tools, and on the factors enhancing or hindering this learning. The conceptual frameworks adopted in this study were Opfer and Pedder's (2011) complexity theory which was used to analyse teacher learning, and Garrison and Vaughan's (2008) community of inquiry framework which analysed the factors affecting learning. This study constructed narratives of teacher learning in adopting a blended approach at a private tertiary institution. It was located within the interpretative paradigm and a qualitative narrative approach was adopted. Critical incidents, concept maps and semi-structured interviews were used to construct the narratives. Five participants, who were lecturers at the tertiary institute, were individually interviewed.

The findings from applying Opfer and Pedder's (2011) complexity theory show that learning occurs because of a dissonance between personal expectations and efficacy with technology. There is a nested complexity of learning as knowledge, experience and beliefs which impact each individual and their dissonance. An analysis of the knowledge needed for a blended approach identified a new Technological Pedagogical Content Knowledge (TPACK) as an essential component in learning to adopt a blended approach. Students and their knowledge, experience and beliefs were also identified as impacting teacher learning. This was an element not explored by Opfer and Pedder (2011).

Garrison and Vaughan's (2008) community of inquiry identified factors that enhance or hinder teacher learning. The factors that enhance learning were identified as follows: the application of new ideas; the exchange of ideas; and the ability of students to connect ideas in the online space. The social element of encouraging collaboration, and expressing emotions and camaraderie were also motivating factors. However, the hinderances were similarly found within these indicators and were linked to the students' lack of technological knowledge and reluctance to engage on the online platform. A lack of technical support, the large volume of information on the learning management platforms, vague instructions and difficulty in navigating the platform were also indicated as hinderances to learning by the participants. The time taken to assimilate new technology, technical issues, costs and expectations of self were other factors influencing the learning process of lecturers adopting a blended approach.

It is therefore important that tertiary institutions take cognisance of how best to train and support lecturers in the use of technology for enhanced teaching and learning. The starting point will have to be an exact definition of a blended approach that is ‘fit for purpose’.

## DECLARATION

Submitted in fulfilment/partial fulfilment of the requirements for the degree of **Master of Education**, in the Graduate Programme in **Teacher Development Studies**, University of KwaZulu-Natal, Pietermaritzburg, South Africa.


I, **Evaleen van Blerk** declare that

1. The research reported in this thesis, except where otherwise indicated, is my original research.
2. This thesis has not been submitted for any degree or examination at any other university.
3. This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
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5. This thesis does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the thesis and in the References sections.

Evaleen van Blerk  
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20 March 2020  
Date

Dr Jaqueline Naidoo  
Name of Supervisor

  
Signature

## **DEDICATION**

This thesis is dedicated to my loving husband for his encouragement and support, and for starting this process in the first place.

## **ACKNOWLEDGEMENTS**

It is with sincere thanks that I acknowledge my dependence on God for the completion of this dissertation.

I further wish to extend a grateful appreciation to the following people:

- Dr Jacqui Naidoo, my supervisor, for the guidance and feedback as well as the other lecturers who dedicated their Saturdays to ensuring quality education.
- Leena Nadas who, throughout this process, has been a pillar of understanding.
- My colleagues, who made themselves available to be interviewed and without whom this dissertation would not have come to fruition and;
- Most importantly my family, Allen, Jemma and Nathan, whose continued support, encouragement and takeaways helped me persevere.

## **PREFACE**

The research study described in this dissertation was carried out with five lecturers at a private tertiary institution. The interviews commenced in July 2019 and concluded in August 2019, under the supervision of Dr J. Naidoo of the Pietermaritzburg campus of the University of KwaZulu-Natal.

This study represents the original work completed by the author and has not been submitted in any form for any diploma or degree to any other tertiary institution. Where the author has made use of the work of other authors, this has been duly acknowledged in the text.

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Evaleen van Blerk

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Date

As the candidate's supervisor I agree/do not agree to the submission of this dissertation.

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Dr J. Naidoo

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Date

Supervisor

Pietermaritzburg Campus

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# **CHAPTER 1: INTRODUCTION**

## **1.1 INTRODUCTION**

The aim of this study was to explore teacher learning in adopting a blended approach at a tertiary institution. The research pivots on the narratives of lecturers in learning to use technology and the factors that enhance or hinder teacher learning in adopting a blended approach at a tertiary institution. This chapter begins with the focus and purpose of the study and the rationale behind the research. The research questions are listed to inform the study, and the literature explaining the concepts and gaps are briefly discussed. The conceptual frameworks of Opfer and Pedder's (2011) complexity theory and Garrison and Vaughan's (2008) community of inquiry are relevant to the study and are introduced in this chapter followed by the identification of the methodological tool of narrative inquiry. My own narrative is included before the chapter concludes with a brief overview of the structure of the dissertation and the contents of the subsequent chapters.

## **1.2 FOCUS AND PURPOSE OF THE STUDY**

The research was conducted at a private tertiary institution, where approximately 1000 students study modules across a variety of degrees and higher certificates. A current directive given to lecturers is to implement a 20:80 ratio of online technology to face-to-face sessions in order to enforce the adoption of the blended learning approach in the modules they lecture. Garrison and Vaughan (2008, p.5) define blended learning as a "thoughtful fusion of face-to-face and online learning experiences". This is corroborated by Tucker's (2019, p.2) definition of blended learning as "any formal education program in which a student learns at least in part through online learning".

Lecturers are at various stages of this adoption. Some have embraced it and find the technology useful in enhancing the learning process in their lectures. This study explores the views and practices of five lecturers through narratives of their experiences. It also aimed to explore how teacher learning took place in this context and with these lecturers. Research in this field is significant since it offers insight into teacher learning and possible strategies that could be put

in place to benefit lecturers' adoption of a blended approach at tertiary institutions, and for me, personally, as I attempt to adopt a blended approach in my lecturing modules at this institution.

In addition, this study explored the factors that enhanced or hindered teacher learning in adopting a blended approach. The issues raised in adopting a blended approach emphasised the importance of listening to individual lecturers' narratives about their own adoption of the blended approach.

### **1.3 RATIONALE**

The tertiary institution I work at integrated a blended approach into all the modules I lecture. This raised many questions for me as I explored what this meant for my teaching strategies like: How could I learn the new technology? Which technology should I adopt? How effective was it? How could my students interact with my modules online? In trying to make sense of the implications for me, I realised that other lecturers were faced with similar questions and concerns.

The rationale from literature emphasises the need for a blended approach in higher education institutes as technology is a part of everyday experience (Kirkwood & Price, 2013; Scheffield, Blackley & Moro, 2018; Lim, Lee & Hung, 2008; Garrison & Vaughan, 2008). They highlight the use of a blended approach as this strategy uses technology to provide students with a constructive learning experience, which is in keeping with what is being marketed in higher education by public and private institutions. Incorporating technology into education is the natural response to incorporating technology into society and, as such, tertiary institutions need to be at the forefront of the research. Some research investigates professional development in adopting technology (Tucker, 2019; Scheffield et al., 2018; Vanassche & Kelchtermans, 2016), but few interrogate the deeply personal aspect of learning to use this approach. Longurst, Jones and Campbell (2017) conclude that the adaptive response to teacher learning in the use of technology should be explored as this is a gap in the current understanding of this phenomenon. This is one of the reasons to undertake these narratives.

Much literature interrogates the challenges of adopting a blended approach and particularly the use of technology, e.g. Keamy, 2017; Kirkwood & Price, 2013; Hutchison, 2012; Owen & Allardice, 2008; Vaughan, 2007; and others all agree that using technology is crucial to the teaching and learning experience at any higher education institute. How these experiences are

constructed is an area that needs much more research as I discovered in trying to adopt a blended approach in my own lecturing.

## 1.4 RESEARCH QUESTIONS

1. How do teachers learn to adopt a blended approach at a tertiary institution?
2. What factors enhance or hinder teacher learning in adopting a blended approach?

## 1.5 OVERVIEW OF KEY CONCEPTS

The increased availability of technology has enabled South Africa to participate in the discourses of 'blended learning' that other countries have debated for the past decade. Higher education institutions have been solidifying policy to include technology in the course structure of modules on offer. This has resulted in debates about the extent to which technology should be used in teaching. It also has implications for teacher learning as lecturers assimilate the use of new technology as tools in their pedagogic schema.

Picciano (2009) contends that the **blended approach** includes using a wide range of technologies that complement face to face classroom lectures. These technologies range from PowerPoint slides, videos, podcasts, and blogs to online tests, discussion boards and Wikies. The blended approach integrates online activities in a planned manner that enhances pedagogical techniques. Garrison and Vaughan (2008) argue that the inclusion of technology is best done by creating a community of inquiry. They emphasize the necessity of using technology to bring about constructivist learning which will be real and meaningful for students and lecturers in an online space. Similarly, Tucker (2019) emphasizes the need for teachers to adopt blended learning in the classroom for the benefit of the students and contends that this blended approach requires online engagement with the students. In conducting this research, it has become evident that the blended approach is commonly understood to mean incorporating tools for enhancing learning whether it is in the classroom or online (Picciano, 2009). However, it is specifically defined as online facilitation to enhance learning outside of the classroom (Garrison & Vaughan, 2008). Three of the participants in this study defined the blended approach to mean using technology that complemented classroom lectures with a small percentage of online activity. Two of the participants were engaged fully in an online capacity

and understood the blended approach to be more directed for online facilitation.

Literature draws attention to the numerous **challenges and advantages** of implementing technology in higher education (Owen & Allardice, 2008; Keamy, 2017; Lim, Lee & Hung, 2008; Vanassche & Kelchtermans, 2006). These factors are the starting points in this higher education institution now that technological implementation has been made a directive there.

*Teacher learning* has been described as complex, situated, reflective and even emotional (Kelly, 2006; Keamy, 2017; Picciano, 2009; Opfer & Pedder, 2011; Vanassche & Kelchtermans, 2016; Sheffield, Blackley & Moro, 2018). Opfer and Pedder's (2011) complexity theory reiterates how teacher learning is dependent on the integration of the context, the teacher's identity and the development activity which in this case would be the adoption of a blended approach. These definitions of teacher learning highlight the intricacies of adopting technology for most lecturers. Learning cannot only involve the acquisition of technological knowledge, as is emphasized by Picciano (2009) who stresses that there are also: the skills; the social and emotional aspects to teaching; the questioning that takes place; the assessments; the collaboration, and the reflection criteria of teaching to consider. This then emphasises the need for research of a deep and relational aspect as can be constructed through narratives.

## 1.6 CONCEPTUAL FRAMEWORK

The conceptual frameworks adopted in this study were Opfer and Pedder's (2011) complexity theory of teacher learning and Garrison and Vaughan's community of inquiry framework.

Opfer and Pedder (2011) argue that teacher learning is a complex system of interactions and combinations; and their research was located within the interpretive paradigm where they used a qualitative approach. They contend that research on teacher learning should focus on explaining the causes of learning through a 'nested' approach of interactions between **the teacher, the context and the learning activity**. This highlights the complexity of the various aspects involved in adopting a blended approach at a tertiary institution. Opfer and Pedder's (2011) complexity theory assisted in the analysis and understanding of the first research question of this study about how teachers learn to adopt a blended approach in a tertiary institution.

Garrison and Vaughan (2008) assert that most tertiary institutions present workshops for technology training. It was hoped that after the workshop lecturers would be able to change their practice and adopt technology into their modules. Garrison and Vaughan's (2008) community of inquiry framework focused on collective participation. They promote the formation of a community of inquiry to bring about the professional development required in learning to adopt a blended approach successfully. Accordingly, collaborative inquiry emphasizes the more personal aspect of learning. This study was a qualitative study located in the interpretive paradigm and Garrison and Vaughan (2008) acknowledge the complexities of human nature in adopting technology. The community of inquiry framework encapsulates the complex interdependence of a "cognitive presence, a teaching presence and a social presence in constructing an educational experience" (Garrison & Vaughan, 2008, p.18). This framework assisted in analysing the second research question about the factors that enhanced or hindered teacher learning in adopting a blended approach. Identification of factors that influenced teacher learning within the three spheres could contribute to a better understanding of what steps tertiary institutions could take to promote the adoption of a blended approach.

## **1.7 THE METHODOLOGICAL APPROACH**

In this study, the narratives of teacher learning in adopting a blended approach at a tertiary institution were examined. This study was positioned in the interpretative paradigm and adopted a narrative approach, which is defined as more than stories. According to Clandinin, Murphy, Huber and Orr (2009), narrative inquiry researches the puzzles that emerge from the stories. Researchers gain an understanding of the experience and often the narrative brings to light subconscious information that explains phenomena (Bell, 2002).

The purpose of this research study was to understand and explore how lecturers in a tertiary institution learned to adopt a blended approach. It also aimed to explore the factors that either enhanced or hindered teacher learning. Five lecturers who constituted a purposive sample, were selected as they could provide detailed descriptions about how they learned to adopt a blended approach into their teaching as well as the factors that enhanced or hindered their learning. Critical incident cards, concept maps and semi-structured interviews were the instruments implemented to generate data for this research study.

According to Cohen et al. (2018, p.643) "qualitative data analysis focuses on in-depth, context-specific, rich subjective data and meanings by participants in the situation, with the researcher herself/himself as a principal research instrument". Narrative inquiry was chosen as the research design for the data collection. Analysing this data was an inductive and deductive process. Creswell (2003) asserts that the inductive process collects the data and arranges it into categories, while the deductive process is used to place data into categories of an existing framework. Opfer and Pedder's (2011) complexity theory of teacher learning and Garrison and Vaughan's (2008) community of inquiry were the relevant conceptual frameworks used to analyse the data generated in this study as they particularly address teacher learning and the use of a blended approach respectively.

## **1.8 MY NARRATIVE OF TEACHER LEARNING IN ADOPTING A BLENDED APPROACH**

I have been lecturing for four years in the Bachelor of Education faculty at a private institution. The policy of 20:80 online face-to-face sessions has impacted my own learning as I undertook to include technology in my modules. This has led me to investigate the purpose of technology in the classroom, and as with all pedagogy it requires an incorporation to provide students with a meaningful learning experience. My experience with technology has been limited in the past and experimenting with new tools was very daunting. I undertook to engage students using technology and set tasks for them to enhance their learning. I set about investigating the manner of meaningful tasks with my Honours project where I instituted three technological tools and researched the students' response to these tools. I made videos of different concepts available online. I also created auto-graded tests online for the students to do as many times as they wanted to attempt them to obtain a score of 100%. Finally, I formed a Whatsapp group with my students to facilitate questions and answers. I understand now that I have considered a blended approach to mean using different technological tools to enhance teaching and learning. I did not create a collaborative online space to investigate new areas of learning as is defined by Garrison and Vaughan (2008) for blended learning. My own learning was very much a one-on-one experience with a facilitator who could teach me how to place my videos on the online space and how to create auto-graded tests. My action research experience informed me that my students ranked the auto-graded test as first in enhancing their own learning, followed by the Whatsapp group. They did not go online to watch the videos. This engagement with technology led me to question the purpose of technology in teaching and learning and how to become more



informed of the many tools available. I realized that using technology was an ongoing exercise and that it was a strategy similar to other teaching strategies that had to be mastered and applied. I became aware of my own learning needs and how those could be met. The many challenges I faced in learning to use this technology made me question my own abilities and vulnerabilities. Learning to adopt a blended approach meant that I had to experiment with technology. The high cost of data and finding time to explore different tools were and still are challenging. Finding and choosing acceptable tools that would enhance teaching and not only entertain students was also important to me. The attitude and cooperation of my students also affected my choice of tools. While experiencing these challenges I had the success of creating successful auto-graded tests which the students enjoyed completing in their own time and that other lecturers wanted to know how to do as it would ease their marking load and enhance revision and learning. These successes spurred me on to investigate other tools and experiment with them in class. While undertaking these new methods in my teaching I also began my journey in the Masters of Education program. I realized that the process I was undergoing was one that other lecturers were experiencing and that I could document their narratives to add to research and to my own knowledge while creating discourses within the institution to enhance teaching and learning. Narratives are designed to be live stories (Clandinin & Connelly cited in Savin-Baden & van Niekerk, 2007) and thus, my story of adopting a blended approach is only beginning.

## **1.9 OVERVIEW OF THE DISSERTATION**

Chapter 1 introduces this study and outlines the focus, purpose and rationale. The research questions, key concepts and brief outline of the conceptual frameworks and methodological approach are also presented. It concludes with an overview of the five chapters in this dissertation.

Chapter 2 outlines the literature review that interrogates the key concepts of a blended approach, and the factors that enhance or hinder learning to adopt a blended approach. Teacher learning, and particularly as it relates to adopting a blended approach, is discussed as well as an outline of the conceptual frameworks adopted in this study, namely; Opfer and Pedder's complexity theory of teacher learning, and Garrison and Vaughan's community of inquiry.

Chapter 3 discusses the interpretive research paradigm, qualitative approach and the narrative inquiry approach. The data generation methods used are also detailed, these being: critical incidents, concept maps and semi-structured interviews. The chapter concludes with a discussion of the trustworthiness and ethics of the study.

In chapter 4 each participants' narratives are presented as they were constructed from the critical incidents, concept map and semi-structured interviews. The results and the discussion of the analysis of the results follows.

Chapter 5 presents the key findings of the study and is followed by a discussion of the conclusion and recommendations for further research and limitations of this research study.

## **1.10 CONCLUSION**

This chapter presented the focus and purpose of the study, the rationale behind the research and the two questions to be answered by the research. Furthermore, a brief overview of the concepts and conceptual framework were also presented after which the methodological approach, personal narrative and overview of the dissertation were discussed.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

Higher education institutions are constructing policy to include technology in the course structure of modules on offer. Adopting a blended approach in tertiary institutions also has implications for teacher learning as lecturers must assimilate the use of a new tool and teaching style in their pedagogy. The narrative that this has constructed is evident from my own narrative in chapter 1 thus, this literature review commences with an outline of the blended approach to learning in South African institutions. The definitions of blended learning are discussed along with the successes and challenges of adopting a blended approach. Teacher learning is interrogated as it is necessary in moving institutions forward as they embrace the use of technology. Finally, the conceptual frameworks of Opfer and Pedder (2011), and Garrison and Vaughan (2008) that underpin this study are defined and discussed.

### **2.2 BLENDED APPROACHES IN SOUTH AFRICAN HIGHER INSTITUTIONS**

Mahesh (2017) identified four phases of technology-enhanced teaching and learning as it has been adopted by higher education institutions in South Africa. These are identified as the 1996-2000 transition to PowerPoint; the 2001-2005 building policies and infrastructure; the 2006-2010 professional development of higher education staff and lastly as of 2011, further professional development of staff in adopting the technology and learning strategies for students, providing online textbooks and implementing mobile learning. He contends that the main challenges include staff development, availability of user-friendly technology and the logistics of affordable and easy access to technology. Most of the public universities advocate a blended approach to teaching and learning on their websites. Interestingly, the practical implementation of the blended approach was put to the test in 2016 and 2017 with the student protests that led to the physical closure of most public universities. The students were provided with online access to information, presentations, assignments and videos to ensure that they could continue with their studies. Haupt's (2018) study at a public university highlighted

controversial feelings by lecturers in being forced to use this blended approach. Some lecturers felt that it was beneficial to be able to continue with the work despite the disruptions. Others felt that it only benefited the privileged students who could afford technology and data. Their concern was for the disadvantaged students and the students who would not be motivated to engage with the online material. Some staff admitted to a lack of experience in using this blended approach.

These contradictory and varied responses further stimulated my own interest in researching how lecturers learn to adopt a blended approach as was discussed in my narrative. Given that blended learning is highlighted by advertising and policy emphasises its necessity in the portfolio of a lecturer, there is a need to explore this further.

## **2.3 CONCEPTIONS OF BLENDED LEARNING**

Picciano (2009) outlines the concept of the "blended approach" which includes a wide range of technological uses that compliment face to face classroom lectures. These range from PowerPoint slides, videos, podcasts, and blogs to online tests, discussion boards and Wikis. The blended approach integrates online activities in a planned manner that enhances pedagogical techniques. Stein and Graham (2014, p.12) contend that the blended approach is "a combination of onsite (i.e. face-to-face) with online experiences to produce effective, efficient, and flexible learning." Likewise, Keamy (2017) describes it as an approach to teaching that incorporates face-to-face lecture sessions with technological learning opportunities.

According to Woodcock, Sisco and Eady (2015), e-learning is established in universities in Australia and has been written into the school curriculum so that teachers must engage with this form of teaching and learning. E-learning is broadly considered to be "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and service as well as remote exchanges and collaboration" (Holmes & Gardner, 2006, p.14). Its aim is to improve teacher competencies in using technology so that they can be more effective in the classrooms where their learners will be expecting modern inclusions of technology use. Stein and Graham (2014) also reiterate the importance of including technology in learning as people have incorporated it into their daily lives. This has

repercussions for lecturers who train teachers in universities as they must become adept at including technology in their modules.

These definitions of a blended approach suggest that it refers to the use of technology as a tool in teaching to enhance the learning experience. Holmes and Gardner (2006) developed a flower petal framework for e-learning practices and skills. The intent was to formulate a way to use technology so that students could be engaged in establishing learning communities online to make their learning meaningful. Learning communities are online platforms where students can interact and discuss problems or theories. They may comment and contribute to the conversations about the topic in their own time. The authors proposed that communal knowledge was more beneficial and that it gave students an opportunity to take responsibility for their own learning. They highlighted the different ways in which technology could contribute to analysing, collaborating about, testing, exploring, selecting, searching, promoting, synthesizing, understanding, applying, discussing, and creating information (Holmes & Gardner, 2006). In keeping with the use of technology as a tool, Picciano (2009) designed a multimodal model which could be used to assign specific technologies to the six areas he defined in lecturing. He identified the content, social and emotional facets, questioning techniques, assessments, collaboration and reflection as the dynamic elements that need to be assigned varying technological activities. These activities would be dictated to by the pedagogical objectives identified in the course. He used face-to-face sessions for securing the social and emotional dimensions in lecturing.

In contrast to these wide applications of technology, Cavanaugh, Ellerman, Oddson and Young (cited in Burge & Haughey, 2001) caution that technology may be changing our relationship with knowledge production. They identify a gap between the ideals imagined through the use technology and our experiences of it. They propose the idea that technology makes teachers facilitators and students information gatherers. Blewett (2019) reiterates this idea and promotes a paradigm shift to a more learner-centred pedagogy. This complicates the definition of blended learning as it discards a simplistic assimilation of technological tools to enhance teaching and learning. It requires a change in teaching strategy, and thus teacher learning is required to assimilate technology effectively into a new methodology. This then is a further reason for this research into how teachers learn to adopt a blended approach.

Garrison and Vaughan (2008) also consider the inclusion of technology to be more complex than merely finding tools to enhance lectures. They emphasize the necessity of using technology to bring about constructivist learning which will be real and meaningful for students and lecturers. They explore the use of a community of inquiry to use technology to its full benefit in lectures. The community of inquiry is identified as a group of students and the lecturer who work collaboratively towards achieving learning objectives. They meet face-to-face to clear misconceptions and enhance peer interaction, but the learning is done through engaging with content online. This then would use the platforms available for online discussion, uploading videos and podcasts, linking research material, and allowing discussions as learning unfolds around the in-depth exploration of a topic or problem. This concurs with Cavanaugh et al.'s (cited in Burge & Haughey, 2001) understanding that blended learning is more learner-centred. In investigating blended learning in Malaysian Higher Education Institutes, Embi, Nordin and Panah (2014) concur with these authors that blended learning is a flexible, learner-centred and multi-modal approach to teaching and learning. Blewett (2019, p.84) identifies the teacher as the "Guide on the Side". This is also in keeping with Tucker's (2019, p.2) view that blended learning is a "big umbrella term that covers many different models, but the goal is to combine active, engaged learning online with active, engaged learning in the classroom..." She contends that students must have more control over the time, place, path and pace of their learning which can be attained using technology. In addition, she asserts that the purpose of using technology is to enhance the teaching-learning environment and to engage the students in constructing knowledge.

Kirkup (cited in Burge & Haughey, 2001) argues that technology is more than a tool and that it complicates knowledge construction since it affects teachers' identities. Cavanaugh et al. (cited in Burge & Haughey, 2001) confirm that technology has disrupted education since educators are now grappling with ideological and generational considerations as well. This suggests that it is a complex phenomenon that impacts teaching and learning. This is reiterated by Luan, Alias and Jain (2014). They assert that the blended approach is learner-centred and that learners should be actively involved in practices of inquiry, research and design. These activities are collaborative groups that work to achieve learning objectives. The teachers are facilitators and problem-solving experts. Similarly, Blewitt (2019) suggests a movement away from teaching teachers to use technology to training teachers how to teach effectively with

technology. He expounds the Activated Classroom Teaching model as the approach to transforming teaching and learning with technology. In his own experiences great teaching has come about because of the individual teacher, great technology and a pedagogy that includes the knowledge of how to teach effectively with technology.

This concurs with Garrison and Vaughan's (2008) community of inquiry (COI) framework and for this reason, the COI framework seems appropriate for examining the factors that enhance or hinder teacher learning in adopting a blended approach. The community of inquiry, much like the community of learning, refers to a group of individuals who connect and collaborate to answer a question or solve a problem. Garrison and Vaughan (2008) highlight the cognitive, teaching and social aspects of an educational experience. For learning to take place, the blended approach should be initiated using these three elements interdependently. This framework as a research conceptual framework will be discussed in more detail.

It is evident that the terms 'blended learning' and 'e-learning' are used interchangeably in the literature. In this study, I will also be using these terms interchangeably.

## **2.4 THE SUCCESS OF A BLENDED APPROACH**

Lim, Lee and Hung (2008) explored the success experienced by a teacher who embraced technology in her teaching practice and was inspired to continue applying technology in her classroom as it improved her relationship with her students. Likewise, Stein and Graham (2014) found that using technology provided flexibility and freedom for the students and the teachers. Participating becomes more convenient and the learning experience can enhance educational relationships between students and teachers.

Limniou, Downs and Maskell (2015) created a dataset for students and teachers to deposit their views of learning technology in a UK university. Their research found that students view technology as useful for accessing online learning materials at their convenience, completing assessments, receiving feedback and communicating. Similarly, Tucker (2019) considers the purpose of a blended approach as one which moves the students from recipients of knowledge to participants in constructing their own knowledge and for students to have more control over the time, place, method and pace of their learning since this is afforded by technology.

In focussing on current generation Y students (born after 1982 and growing up with technology), Steenkamp and Rudman (2012) researched the applicability of online teaching aids in South Africa. They highlighted that current students in tertiary institutions were born into technology and that they require new pedagogies and skills. This concurs with Blewett's (2019) experiences of teaching in a tertiary institution. These students require education that is structured, experiential, interactive and flexible as fulfilled by technology, while also being social and connective as met by face-to-face interactions. The blended approach to teaching and learning meets these requirements. Sabzian, Gilakjani and Sodouri (2013) further assert that achieving these requirements will motivate students to become responsible for their own learning. This will produce critical thinkers who use computers as learning tools to review, critique and collaborate their learning. Ultimately, they feel this method of teaching and learning will lead to improved achievements and students who will be in demand in the workplace. These benefits concur with Adelekan's (2013) list of advantages of introducing the use of technology at a tertiary institution. In addition, he found that technology improved communication and heightened the quality of information used and produced at his tertiary institution.

Many authors initially regarded technology simply as a tool to enhance learning (Selwyn cited in Stein & Graham, 2014). It was considered that e-learning would pave the way for a new form of education as students could access education from anywhere in the world. It would connect students in a new learning environment, which would provide benefits not found in the classroom. Students could engage more frequently, deeply and anonymously than in face-to-face sessions and it was believed that this would bring about personal and meaningful learning (Eady et al., 2017; Adelekan, 2013; Holmes & Gardner, 2006; Gunawardena cited in Burge & Haughey, 2001; Cavanaugh et al. cited in Burge & Haughey, 2001). Holmes and Gardner (2006) contend that e-learning would increase education, allow for experts to be involved in creating knowledge which could be shared collaboratively, and ultimately allow for flexibility in time and place of learning. However, the use of technology emphasised that there is still a need to construct an effective learning environment and research evidenced this as a need for face-to-face sessions (Burge & Haughey, 2001; Garrison & Vaughan, 2008; Steenkamp & Rudman, 2012; Eady et al., 2017; Rossouw, 2018). Fraser and Killen (cited in Rossouw, 2018) rated face-to-face sessions with lecturers as one of the top ten factors of academic success. This is because students enjoy the student interaction and the ability to



clarify questions with their lecturers. The blended approach has the added advantage of meeting students' need for connection (Rossouw, 2018; Steenkamp & Rudman, 2012; Garrison & Vaughan, 2008). This concurs with Garrison and Vaughan's (2008) findings and is why they consider a blended approach to be multiplicative in constructing an ideal learning and teaching environment. It is about taking the best factor of the traditional classroom, namely the physical presence and connection with lecturers and students, and the best of e-learning, namely the convenience, access to information and ability to collaborate in order to create a real and relevant learning experience. For these reasons, a blended approach is advocated in tertiary institutions.

In my personal journey with technology and through the readings I have done, I am slightly envious of educators who have successfully integrated technology and are at the forefront of educating their peers in creating learner-centred experiences which enhance teaching and learning. This necessitated me to question how we learn to adopt this new methodology? What are the factors that enhance and challenge our learning? In answering these questions, I am hoping to validate my own learning and progress on the path to adopting a blended approach.

## **2.5 THE CHALLENGES OF IMPLEMENTING A BLENDED APPROACH**

In the case of implementing technology, a directive is normally given from top management. Owen and Allardice (2008) found in their research that this directive came with numerous challenges. There seemed to be a deficiency of knowledge amongst the lecturers. There was no immediate policy guiding the lecturers and there was limited expertise on the faculty staff to bring about these implementations. No research had been done on the learning styles of students, their needs and preferences, nor whether they could feasibly access technology. Likewise, Adelekan's (2013) study highlighted staff development and acceptance of the pedagogic value of e-learning as the biggest challenge at the tertiary institution that was implementing technology for the first time. The institution needed restructuring in its infrastructure, staffing, course design and technological support. Keamy's (2017) research also identifies that the responses from lecturers vary; from resisting the adoption of technology to gradually beginning to use it; however, some even ignore the requirement altogether. These challenges are the starting points in my higher education institution now that technological implementation has been made a directive there.

Kirkwood and Price (2013) interrogated research about implementing technology and the effect it had on teaching and learning in higher education. Their findings were that there is no conclusive evidence that technology improves or hinders learning and thus, student results. This concurs with a study by Eady, Woodcock and Sisco (2017). In the same vein Hutchison (2012) found that educators were reluctant to incorporate technology into literacy instruction for the very reason that research could not conclusively show the benefits of using technology. Lopez-Perez, Perez-Lopez and Rodriguez-Ariza (2010) researched an instance where blended learning was instituted and then student responses were recorded. Here again the outcomes reiterated that a blended approach was not conclusively more beneficial. The students saw the benefits, and were motivated and satisfied; however, more than half still preferred the face-to-face sessions.

In South Africa, there are many reasons why students respond or do not respond to the use of technology in their higher education modules. Bharutham and Kies (2013) examined the challenges of introducing e-learning at a tertiary institution in South Africa and made the following two conclusions about many of the students: they have no personal computers and were not exposed to them in school; they type slowly and are second language speakers who struggle to write academically in English. Isiyaku, Ayub and Abdulkadir (2015) found that the challenges in Nigeria mirror South Africa's challenges in implementing technology at tertiary institutions. They highlight the need for student support and in most instances, lecturers also needed professional development and support in using technology. Isiyaku et al. (2015) also emphasise the need for in-depth research to overcome the problems of using technology in the emerging economies such as Nigeria and South Africa. These problems are firstly at the implementation level of requiring WiFi and electricity. Secondly, the staff and students need training and technological support before a pedagogical evolution can occur where learner-centred strategies are implemented in a blended approach.

Hutchison (2012) identified four factors that contribute to the integration of technology by the educator. The first factor that influences adoption of technological use is the perceived time this will take. If educators feel that they will not easily assimilate the technology, then they are reluctant to implement its use. In addition, if they are limited by access to technology and the

internet, they will not easily adopt it in their teaching. Thirdly, educators also want to feel empowered by having the knowledge of the technology they are implementing. This leads to the fourth factor of technological support, which is an integral part of feeling empowered and able to implement their technological knowledge. These findings are still relevant in South Africa today (Bharuthram & Kies, 2013; Isiyaku, Ayub & Abdulkadir, 2015). Owen and Allardice (2008) use Moore's model of the diffusion of innovation adoption bell curve to explain how many lecturers are considered pragmatists who wait to see if the adoption of technology is successful before they will adopt it themselves.

Lim, Lee and Hung (2008) identified the reluctance of educators to embrace technology as a perception of learner-centred pedagogics. Many educators view this as giving up control of their teaching to technology (Helleve, 2013; Holmes & Gardner, 2006; Burge cited in Burge & Haughey, 2001). Vanassche and Kelchtermans (2016) identified the vulnerability lecturers feel in adopting new methods as a very real factor to consider when implementing change. Tucker (2019) reiterates that blended learning demands a new approach. Educators cannot teach in isolation and will have to work collaboratively to identify the challenges, design solutions and improve their practice. Students need to be allowed to take ownership of their own learning.

Keamy (2017) succinctly explores the emotional side of embracing the use of a new tool and, apart from the environmental challenges identified by Hutchison (2012), defines this change of using technology as a process. He likens the adoption of blended learning to the reaction one has to loss. This is because change brings about a loss of control, a loss of certainty and an initial loss of academic identity. The responses that the lecturers go through in adopting new technology is explained by Jaffe and Scott's change curve (cited in Keamy, 2017). Lecturers deny that change will occur in their institution, then they move into resistance where their sense of self is threatened because they are not knowledgeable about the technology. They come to a point of exploration where they become emotionally, cognitively and behaviourally active to consider how they might adopt it. Finally, lecturers commit to learning and gaining mastery of the new technology. They can, however become stuck in any of the stages and not move through the process to successfully adopt technology into their teaching.

Many of these challenges are present in the environment I find myself. I therefore feel it is relevant to conduct research to understand how lecturers learn to adopt a blended approach in their modules. The directive is specifically to adopt a blended approach and my research has steered me toward a shift in my pedagogical approach, thus I am curious to see the similarities and disparities with findings of other researchers when their institutions were at the start of implementing a blended approach. In view of my interest in teacher learning, I will next explore teacher learning and how teacher learning theories may impact the narratives of lecturers adopting the blended approach.

## **2.6 TEACHER LEARNING IN ADOPTING A BLENDED APPROACH**

Lawless and Pelligrino (cited in Hutchison, 2012) emphasise that technology is not being integrated into the curriculum and they suggest that the main reason is that professional development does not address this sufficiently which is corroborated by Sabzian et al. (2013). Helleve (2013) also found that schools in Norway were equipped with computers for students but educators were not incorporating them in teaching. Isiyaku, Ayub and Abdulkadir (2015) made similar findings in Nigeria.

Kelly (2006) identifies teacher learning as a process of "knowing-in-practice" that occurs in the context of where teachers find themselves. Learning to use technology is dependent on the ease of use and the appropriateness of this tool in its use (Eady et al., 2017). Kelly (2006) asserts that the identities of the teachers are closely linked to the actions they take. Kirkup (cited in Burge & Haughey, 2006) identified the issue of identity in online spaces and how managing identities is an important aspect of teaching and learning. This confirms Keamy's (2017) notion that learning should affect the cognition, emotions and behaviour of educators. Hence, learning to use technology is more complex than introducing PowerPoint in class.

The learning process is further emphasized by Sfard (1998) who adopts metaphors to discuss learning as acquisition and participation. This may pinpoint the intricacies of adopting technology for most lecturers since learning cannot only involve the acquisition of technological knowledge. The participation element of the blended approach is also a consideration. Picciano (2009) identifies teaching as not only about learning content. There

are the content and skills, the social and emotional aspects to teaching, the questioning that takes place, the assessments, the collaboration, and the reflection aspects of teaching as mentioned earlier. While this may illustrate how learning is constructed for the student, the same process can define learning to adopt technology for the lecturer. Many authors claim that the adoption of a blended approach in teaching is a complex process and that teachers need to change their ideas of teaching and learning (Burge, 2001; Kirkup, 2001; Cavanaugh et al., 2001; Holmes & Gardner, 2006; Stein & Graham, 2014; Tucker, 2019; Blewett, 2019). The uncertainty of change would explain the vulnerability factor identified by Vanassche and Kelchtermans (2016). It also brings into focus the need for research of a deep and relational aspect (Longhurst, Jones & Campbell, 2017).

Scheffield, Blackley and Moro (2018) designed a professional learning model to support teachers to integrate digital technologies, which is necessary in the Australian curriculum. They contend that effective professional learning needed instruction and support over time. It needed to be situational and involve reflection with clear links to the curriculum. Once again, this model emphasises learning as a process, and it is seen as circular with reflection leading to the identification of training gaps so that learning can occur through action. The doing leads to implementation and then reflection again. They assert that this would improve teacher learning and help teachers adopt blended learning. Tucker (2019) also provides a model for professional learning so that teachers can effectively adopt technology. Her model integrates workshops, conferences and online courses with one-on-one coaching and the formation of professional learning communities. The professional learning community is much like the community of inquiry suggested by Garrison and Vaughan (2008). A professional learning community consists of a group of teachers who are eager to build inquiry and collaborate to improve learning in their school context. Garrison and Vaughan's (2008) community of inquiry framework was used in this study as a conceptual framework to explore the factors that challenge or enhance lecturer's learning in adopting a blended approach.

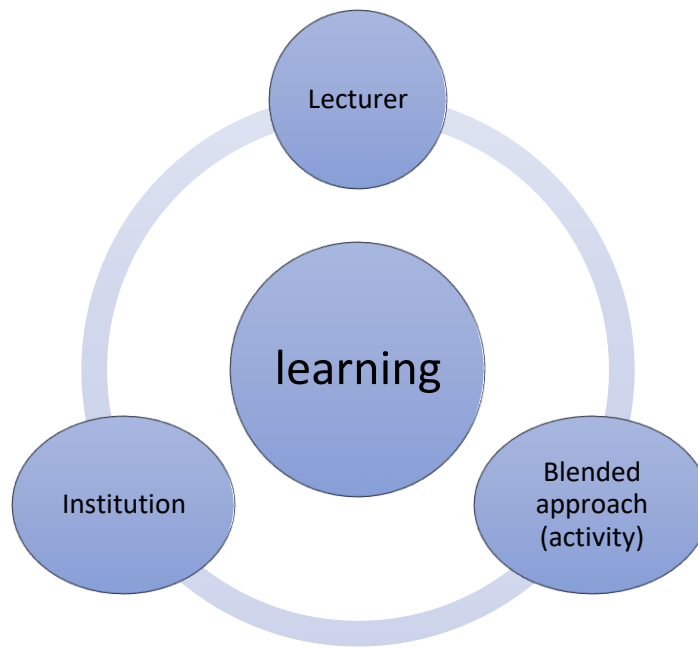
Eady, Woodcock and Sisco (2017) list the conditions that ensure that e-learning takes place. These include the ease of use of technology; a psychologically safe environment; e-learning self-efficacy; computer competency; the effectiveness of the instructor support and the appropriateness of the tool being implemented as elements needed to bring about successful learning in adopting a blended approach. Tucker (2019) also reiterates that teachers will learn

to use technology when the professional development is ongoing and specific to each teacher's subject with the help of a blended learning coach. This makes teacher learning very specific, contextual and personal, which is in line with Opfer and Pedder's complexity theory which will be discussed in the next section.

## **2.7 CONCEPTUAL FRAMEWORKS**

Opfer and Pedder's (2011) complexity theory explains that teacher learning is dependent on the integration of the context, the teacher's identity, and the development activity which in this case, would be the adoption of a blended approach. It is for this reason that I believe that Opfer and Pedder's (2011) complexity theory will assist me to analyse the question of how teachers learn to adopt a blended approach. The second conceptual framework that underpins this research is Garrison and Vaughan's (2008) community of inquiry. They propose a framework for implementing a blended approach and I was drawn to this framework to explore the factors that lecturers feel hinder or enhance their learning to adopt a blended approach.

Opfer and Pedder (2011) conceptualise teacher learning and the conditions that support this learning. They identified three dynamic elements that interacted and combined in different ways to produce a complex system of learning. I have attempted to visually construct this nested approach as it relates to this study.



*Figure 1 Opfer and Pedder's Complexity Theory*

Opfer and Pedder (2011) argue that there are many ways to produce teacher learning and that it is subject to change. It depends on the educator's prior experiences, beliefs, prior and current teacher knowledge and classroom practice. They identify a dissonance between self-efficacy and expectations to be the motivating force behind teacher learning. The institution's support, beliefs about learning, norms of practice and the capacity to realize shared learning goals all impact on the educator's learning. At the specific institution where this study was conducted, the directive was given to adopt blended learning. This is essentially a change in classroom practice. A technological platform or learning management system exists to accommodate the tools that lecturers could access in implementing a blended approach. The learning management system allows learners to see the lecturer slides and any other items the lecturer uploads onto the platform. The learners and the lecturers can communicate collaboratively in spaces created by the lecturers on the learning management platform. Training was provided and technical support was appointed for lecturers and students. The policy was amended to include blended learning while the lecturer evaluation tools were also geared towards encouraging the use of a blended approach. Opfer and Pedder (2011) contend that the learning activity should be relevant to the educator's everyday practice and should occur in a sustained and intensive manner. Workshops and training sessions as well as individual assistance, for the implementation of technology, were provided as learning activities.

All three elements of lecturer, technology and the institution are present when learning occurs, and this assisted to analyse the first research question of how teachers learn to use a blended approach. It was of specific interest to me as I was experiencing the dissonance between my self-efficacy and the expectations of using this approach in my own modules. Identifying the complexity and nested intricacies of each individual lecturer's learning experience through their narratives informed the design of my own learning with further applications for other learning in the future.

Interestingly, research by Boylan, Coldwel, Maxwell and Jordan (2018) indicated that there was a weakness in Opfer and Pedder's model. The relationship between teacher learning and student outcomes were omitted in their model and is an area that is underexplored. It could hold relevance in the analysis of answering research question 1 of how teachers learn to adopt a blended approach in a tertiary institution.

The second conceptual framework underpinning this research is Garrison and Vaughan's (2008) community of inquiry (COI) framework. Garrison and Vaughan (2008) designed this framework because lecturers were completing workshops on how to use technology and then returning to their classrooms to reinforce their existing teaching practice. Their professional development design would allow lecturers to create a sense of community and link their theory to practice. They identify the social presence, the teaching presence and the cognitive presence as essential elements in a blended approach to learning. The social presence requires open communication where there is risk-free expression, collaboration and the freedom to express emotions along with a sense of camaraderie. The freedom to express themselves in a safe environment must also be created online to enable students to feel a sense of cohesion with the class and to achieve their academic goals. The cognitive presence creates a sense of puzzlement where information can be exchanged and connected to explore new ideas. The cognitive element is where the information gathering, connection of ideas, creation of concepts and testing of solutions occurs. This is the learning that comes from the student's interaction with the material within the community of learning. The teaching presence uses the design and organisation along with direct instruction to set the curriculum and focus the discussions (Garrison & Vaughan, 2008). The lecturer is the facilitator and designer of the educational experience and must guide the learning process throughout as "Blended learning is about fully engaging students in the educational process; that is, providing students with a highly interactive succession of learning experiences that lead to the resolution of an issue or problem" (Garrison & Vaughan, 2008, p.25). This is in keeping with the experience that Tucker (2019)



creates for students in her classroom. The correct integration of all three elements is considered crucial for a successful blended educational experience. Longhurst et al. (2017) identify the same elements in their research of factors that influence teacher appropriation of professional learning in the use of technology in science classrooms. Similarly, Tucker (2019) creates a professional learning community to bring about teacher learning in adopting a blended approach. The elements in the community of inquiry are identified as successful elements in modern frameworks to implement blended teaching and learning and was specifically created by Garrison and Vaughan to research and guide the blended approach to teaching and learning. Garrison and Vaughan's (2008) community of inquiry framework was tested as a research instrument using a multi-institutional sample by Arbaugh, Cleveland-Innes, Diaz, Garrison, Ice, Richardson and Swan (2008). The social presence and cognitive presence were identified as valid, reliable and efficient measures for defining the constructs of an effective online learning environment, while the teaching presence depended on two factors, namely; the course design and organisation, and the instructor's behaviour during the course.

This study adopted Garrison and Vaughan's (2008) community of inquiry framework to understand the factors that hinder or enhance lecturer learning to adopt a blended approach. These authors recognise that true blended learning is not without complexity. They contend that it requires a restructuring of teaching and learning. The advantages of a traditional face-to-face classroom and online e-learning can be combined to have a 'multiplicative' effect on learning rather than an additive effect (Garrison & Vaughan, 2008, p.7). In his blog Garrison explains that "the inherent complexity of a community of inquiry argues for a theoretical framework that can provide metacognitive understanding of the dynamics of collaborative inquiry" (The Community of Inquiry, January 2, 2018). In considering technology to be simply a tool, lecturers are in danger of adding it to the program without enhancing learning. Thus, the framework was designed, and its purpose is to create a meaningful learning experience. According to Garrison and Vaughan (2008), students want technology to be used appropriately while still interacting with their lecturers. This concurs with findings by other researchers concerning this generation of students (Burge & Haughey, 2001; Steenkamp & Rudman, 2012; Sabzian, Gilakjani & Sodouri, 2013; Tucker, 2017). The community of inquiry framework is described visually below (Garrison & Vaughan, 2008, p.18).

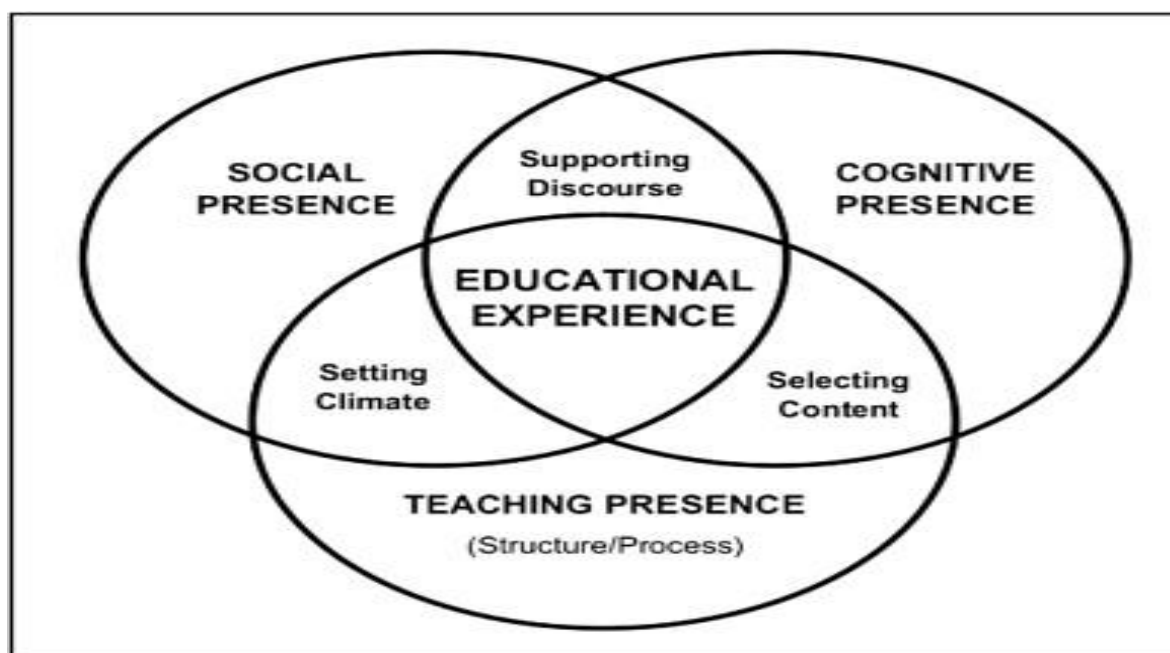


Figure 2 *Community of Inquiry Framework*

Within the framework's three elements of social presence, cognitive presence and teaching presence, there were categories and indicators identified. This is best identified using table 1 as represented in Garrison and Vaughan (2008, p.19).

**Table 1. Community of inquiry Categories and Indicators**

<i>Elements</i>	<i>Categories</i>	<i>Indicators (examples only)</i>
Social presence	Open communication	Enabling risk-free expression
	Group Cohesion	Encouraging collaboration
	Affective/personal	Expressing emotions, camaraderie
Cognitive presence	Triggering event	Having a sense of puzzlement
	Exploration	Exchanging information
	Integration	Connecting ideas
	Resolution	Applying new ideas
Teaching presence	Design & organisation	Setting curriculum and methods
	Facilitation of discourse	Sharing personal meaning
	Direct instruction	Focusing discussion

This community of inquiry framework was used in this research study to understand and make sense of the second research question. The factors that enhance or hinder teacher learning to adopt a blended approach at a tertiary institution could be considered within these elements and by using the indicators from the framework. The community of inquiry framework has been promoted as a dynamic model for institutions to use in moving towards reshaping teaching and learning with the use of technology (The Community of Inquiry, January 2, 2018). Other researchers who have found the community of inquiry framework beneficial are also found on the blog created by Garrison (The Community of Inquiry, 2018). Recent studies have been by Rolim, Feirreira, Lins and Gasevic (The Community of Inquiry, June 17, 2019); and Gil-Juarena who used the community of inquiry model in the analysis and evaluation of courses at UNED in Spain in 2018 (The Community of Inquiry, March 26, 2018). Thus, the community of inquiry framework was beneficial to the study and data analysis.

## **2.8 CONCLUSION**

Blended learning requires a change in mindset for those who are commissioned to use it in their lectures. It is more complex than merely using technology as a tool in some of the lectures as was discussed in the definition. It affects teacher learning in that lecturers will have to make pedagogic changes in their modules. Their focus will be on the students, and technology will have to be used to create learning experiences for these students while still meeting them face-to-face for constructive sessions where they will feel socially connected. The successes and challenges of adopting a blended approach as discussed in literature was identified. Teacher learning was identified as a complex and nested phenomenon and it seems appropriate that the teacher learning required for this will be examined and identified in Opfer and Pedder's (2011) complexity theory. The challenges and successes of adopting a blended approach was specifically focused by using Garrison and Vaughan's (2008) community of inquiry framework. These two frameworks underpin this research study and the data analysis process is discussed in the next chapter.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

After having defined 'a blended approach' and the frameworks for the research study to be founded in, the narrative continues by identifying the interpretive paradigm and its suitability for this research study. Next, the qualitative methodological approach and why it is appropriate for this study are proposed. This is followed by a discussion of narrative inquiry and the strengths and limitations of this research design. The research context and the purposive sampling that this study used are presented. Then the three data collection instruments; namely critical incidents, concept maps and semi-structured interviews, and the applicability of each in addressing the research questions is explained. This is followed by the data collection process, data analysis and the conceptual frameworks needed for informing the findings. Finally, the criteria used to assure the study was trustworthy and ethical are discussed.

### **3.2 THE INTERPRETIVE PARADIGM**

This study is located within the interpretive paradigm. According to Cohen, Manion and Morrison (2018, p.19), the interpretive paradigm focuses on the individual and the central purpose of research and endeavours to understand the "subjective world of human experience." Researchers are required to look at a situation in context and gather information to understand the actions of individuals within a specific situation and context (Bertram & Christiansen, 2014). Taylor and Medina (2013) assert that this paradigm allows researchers to interpret and create understandings of the experiences of teachers in their individual contexts. They describe the epistemology as "inter-subjective knowledge construction" (Taylor & Medina, 2013, p.3). The phenomenon being studied is teacher learning and how this occurs to enable lecturers to use technology in a blended approach in their lecture modules. Other studies have used the interpretive paradigm to understand and explain teacher learning such as Polkinghorne, (2005); Easton, (2008); Webster-Wright, (2009); Opfer & Pedder, (2011); Kelchtermans, (2016); Hardman, (2005) and Korthagen, (2017), to name a few. These studies were located within the interpretive paradigm and provided in-depth data about teacher learning. The interpretive paradigm enabled the researchers to explain the phenomenon and to construct models to further

understand and apply their research, which emphasise some of the reasons this paradigm was used in this study.

### **3.3 A QUALITATIVE METHODOLOGICAL APPROACH**

This study adopts a qualitative methodological approach. Gonzalez (cited in Cohen et al., 2018) argues that qualitative research provides an in-depth understanding of the actions and attitudes of respondents in a specific setting. It allows participants to express themselves and explain their behaviour and decisions. Polkinghorne (2005, p.138) asserts that the primary purpose of qualitative research is to "describe and clarify experience as it is lived and constituted in awareness." According to Cohen et al. (2018), people attempt to interpret their behaviour in their contexts. These interpretations are influenced by many variables and 'thick descriptions' arise that lead to the understanding sought by the research. This is in keeping with Polkinghorne's (2005) argument that qualitative research provides understanding of experiences. Creswell and Creswell (2018, p.4) define qualitative research as "an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem". They emphasize the importance of reporting the complexity of a situation. This complexity is evident in the qualitative studies of Kelchtermans (2016), Naidoo (2013), and Hardman (2005), who place emphasis on understanding how teachers make sense of their experiences in their professional lives. Similarly, this research study explored how lecturers, as teachers, learned to adopt technology into their professional lives. The factors that enhanced or hindered the teacher learning process also fall into the qualitative domain as the lecturers have different experiences that they can attribute to their learning.

### **3.4 RESEARCH QUESTIONS**

The following research questions guided this study:

1. How do teachers learn to adopt a blended approach in a tertiary institution?
2. What factors enhance or hinder teacher learning in adopting a blended approach?

### **3.5 FEATURES AND CHARACTERISTICS OF NARRATIVE INQUIRY**

This study employed narrative inquiry as the research design. Creswell (2003) proposes that narrative inquiry collects the stories of individuals' experiences and then the participant and the researcher construct a collaborative narrative after analysis. Similarly, Moen (2006) asserts that narrative research studies show human beings experience the world through collecting stories and narratives of experience. In the same vein, Duff and Bell (2002) argue that we use story structures to make sense of our experiences. According to Bruner (2004), life is led through the descriptions of our experiences. The way in which we make sense of our world and experiences happens through narratives. Clandinin and Connelly (cited in Savin-Baden & van Niekerk, 2007) concur that people live stories and in the telling of them, reconstruct them to create new stories. This links narrative research to social constructivism because it explores how human actions are developed and then narrated (Moen, 2006). Savin-Baden and van Niekerk (2007, p.461) succinctly state that "humans are storytelling organisms who lead storied lives". Creswell and Creswell (2018, p.13) describe it as a "design of inquiry". It is therefore appropriate to use a narrative approach in this study to elicit the relevant information from lecturers on how they learn and the factors that enhance or hinder their learning to adopt a blended approach.

A distinction is made by some authors between narratives and stories. Reissman (cited in McCance et al., 2000) argues that defining narrative in the form of a story is very broad and can be restrictive. Units have beginning and ends in chronological orders if they are defined as stories. Savin-Baden and van Niekerk (2007, p.464) contend that narratives do not necessarily need plots and can be described as "interruptions of reflection in a storied life." They argue that narrative inquiry provides an analysis of epiphanies and metaphors within stories which is further explored by Denzin (cited in Savin-Baden & van Niekerk, 2007) in categorizing epiphanies.

For the purposes of this research narrative inquiry was used. This is defined as more than stories. According to Clandinin, Murphy, Huber and Orr (2009), narrative inquiry researches the puzzles that emerge from the stories. In this research study the narratives of the five lecturers were constructed. The narratives focused on answering the research questions and so the puzzle pieces were constructed and fitted by the participants through the researcher. The narratives highlighted information from the data instruments and could then be organised in a meaningful manner. The critical incident cards, concept maps and interviews were used to

construct the narratives through which the common themes and differences became more evident and found a voice of their own. These then identified how each lecturer learnt, and what factors enhanced or hindered this learning. It reiterated the appropriateness of this design for this study. Bruner (cited in Barkhuizen & Wette, 2008) explores the actions directed at achieving a specific goal, which highlights what this study's narrative inquiry interrogated. It identified learning and any factors that enhanced or hindered this learning.

Polkinghorne (cited in Savin-Baden & van Niekerk, 2007) makes a further distinction within narrative inquiry between narrative-type narrative inquiry and paradigmatic-type narrative inquiry. I was drawn to the narrative-type of narrative inquiry which gathers events and occurrences as data and uses narrative analytical procedures to produce explanatory stories. However, in assessing the purpose of this study, the paradigmatic-type narrative inquiry was more appropriate as it gathers stories for its data and then produces categories to explain phenomena. These stories allowed for the categorization of learning events and methods.

Narrative inquiry is particularly useful in the educational field, as can be attested to by many studies. Beattie (2000) emphasised the necessity of hearing narratives of teachers as they learn to become teachers. Barkhuizen and Wette (2008) used narrative inquiry in understanding the experiences of teachers teaching English in China. Clews and Newman (2005) used narratives from half a century ago to bring educational value to personal identities. Aharonian (2008) explored introducing narrative writing to teachers as a tool to enhance writing. Naidoo (2013) found narrative inquiry a safe research style for understanding the sensitive topic of teaching HIV/AIDS. Koehler, Newby and Besser (2017) used narrative research to explore students' definitions of memorable teachers. Seglem (2017) explored the author's experience of creating a professional community by using narrative research. Kelchtermans (2016) also explained how teachers' career stories elicited emotions in teaching which was the focus of his research. Thus, this study of teacher learning in adopting a blended approach adds to the field of narrative inquiry.

### *Strengths of Narrative Inquiry*

According to Savin-Baden and van Niekerk (2007) participants easily share their stories and they tend to be truthful in their responses. Researchers can elicit rich, thick descriptions for their data. McCance et al. (2000) concur that narratives can help researchers obtain the in-depth detail they need to best answer their research questions. Barkhuizen and Wette (2008) reiterate

that narratives can generate the actions that lead to the solutions posed by the questions in the research. Researchers gain an understanding of the experience and often the narrative brings to light subconscious information that explains phenomena (Duff & Bell, 2002). The rich and deep insights into teacher learning obtained from the narratives could further be useful to lecturers in similar situations and informed my own personal journey in adopting a blended approach.

### *Limitations of Narrative Inquiry*

The researcher has a close connection with the participants and the subsequent narrative is constructed with the researcher as a participant. This can complicate the context as the researcher is considered a friend in some cases (Duff & Bell, 2002). Savin-Baden and van Niekerk (2007) identify the difficulties in the relationship between the account, the interpretation and the retold story. They also identify the difficulties of interpreting and presenting the data with the participant's insights in every step. This can become time consuming and complicated. In exploring these participants' narratives, it was necessary to interrogate the phenomenon and not the person as was evident in findings by Alshenqeeti (2014). This enabled the research findings to emerge in the chosen frameworks and added to the trustworthiness of the research, thus overcoming possible limitations.

## **3.6 THE RESEARCH CONTEXT**

The research took place at a tertiary institution. There are approximately 1000 students and the modules are across a variety of degrees and higher certificates. All the lecturers have been given the directive to implement a 20:80 ratio of online technology and face-to-face sessions to adopt a blended learning approach in the modules they lecture. Lecturers are at various stages of this adoption. Some have embraced it and have found the technology useful in enhancing lectures. This study aimed to explore the narratives of five lecturers. I am a lecturer at this institution and adopting a blended approach is one of the mandates I have been given. In discussions in the staff room and at various meetings it became evident that this was an area of research that needed exploration as "human beings construct meanings as they engage with the world they are interpreting" (Creswell & Creswell, 2018, p.8). My study aimed to understand how teacher learning takes place in this context and with these lecturers. Constructing meaning in these circumstances has become important as we move forward into the blended approach



to teaching and learning. Understanding the factors that enhance or hinder teacher learning could influence some of the strategies put into place to benefit lecturers' adoption of a blended approach.

### **3.7 PURPOSIVE SAMPLING**

The purpose of this research study was to examine how lecturers in a tertiary institution learned to adopt a blended approach. It also explored factors that enhance or hinder this learning. In order to do this, the research required the detailed and in-depth description as discussed in Bertram and Christiansen (2014). The five lecturers constituted a purposive sample and provided this study with "those who have in-depth knowledge about particular issues" (Cohen et al., 2018, p.219). The lecturers were chosen because they could supply the narratives specific to the situation and context of adopting a blended approach in a tertiary institution. A personal motivation was knowing these lecturers who had to go through the process of learning how to incorporate technology in their modules, and it was felt that this would be advantageous in producing relevant data. They represented a variety in age, sex, tenure and nationality, and because of the personal affiliation with each of them, it could be asserted that they would be comfortable and honest in their discussions and provide rich and meaningful data. Purposive sampling is in line with the sampling evident in other qualitative studies within the interpretive paradigm (Naidoo, 2013; Kelchtermans, 2016; Hardman, 2005). Polkinghorne (2005, p.140) asserts that the data gathered should be "sufficiently rich to bring refinement and clarity to understanding an experience". He describes the necessity of choosing sample participants who will provide this data. The five lecturers in the study met these criteria and agreed to become the participants.

### **3.8 GAINING ACCESS**

In initiating this research study, it was necessary to obtain permission from the principal and the tertiary institution's ethical committee. They needed to peruse the proposal before they could grant permission. This is in line with the provision of doing no harm to the institution's reputation nor any of the participants. Assurances of anonymity were given, and a report of the findings will be made available to their academic committee. The ethical committee of the university further required the proposal to meet their ethical standards before permission could

be granted. It is reassuring to know that the provisions that have been made for the protection of the institution and participants are according to the high standard of two reputable institutions. The participants signed a letter of consent after discussion with them and they were assured of anonymity. They were assigned pseudonyms, but most of them felt that the nature of the research was not damaging in any way and they were comfortable with the details that they had given. They were aware that they could withdraw at any stage and participants kept in contact via email and in person.

### **3.9 METHODS OF DATA COLLECTION**

Three methods of data generation were used in this study, namely; critical incidents, concept maps and semi-structured interviews.

#### **3.9.1 Critical incidents**

Gremler (2004) describes a critical incident as positively or negatively contributing to a phenomenon. In the same vein, Kelchtermans and Hamilton (cited in Brandenburg & Gervasoni, 2012) assert that a focus on critical incidents brings about a deeper analysis and understanding of the phenomenon being researched. It identifies key actions that impact on the experiences of the participants (Khandelwal, 2009). It has the added benefit of providing rich data because the participants are able to provide details from their perspective and decide what is relevant (Gremler, 2004). Chou, Kwee, Buchanan and Lees (2016) also suggest that it is an adaptable method that efficiently produces data to identify events that helped or hindered a phenomenon. This concurs with Gremler (2004) who argues for the critical incident to be the unit of analysis in a study but acknowledges that most researchers use it as a companion research method. This is the role that the critical incident technique has taken in this research study.

Critical incidents contributed to answering the second research question about factors that enhance or inhibit learning to adopt a blended approach. Participants were emailed the critical incident card on the day before the interview and were asked to write about positive and negative events they saw as critical to their learning to use technology. This was used as a starting point in the interview and aligns with Kelchtermans and Hamilton (cited in

Brandenburg & Gervasoni, 2012) in bringing about focus for understanding the phenomenon, which in this study is the blended approach. It also set the correct mood for the interviews as the questions took place in an informal and relaxed atmosphere.

There are limitations in the use of the critical incident technique as it is a retrospective research method that requires participants to reflect and take the time to recall situations which they should describe in detail. Johnston (cited in Gremler, 2004) cautions that this may lead to a low response rate and concurs with the findings of this research. Only three of the five participants produced written evidence of having considered these incidents. All five however verbally evidenced their thoughts of these incidents in the interview.

### **3.9.2 Concept maps**

The concept map is a visual way of expressing ideas (Butler-Kisber & Poldma, 2010). This concurs with Conceição, Samuel and Beinecke's (2017) understanding of concept maps as visual approaches that help researchers understand areas of inquiry by engaging participants in critical analysis. Likewise, Daley (2004) describes concept maps as a meaningful way to reduce data produced in interviews. In this research study about the factors enhancing or hindering learning to adopt a blended approach, it provided the opportunity to triangulate data from the interviews. The participants were asked to use a concept map to illustrate their understanding of a blended approach. The concept map was emailed before the interview. It was a way for them to formulate their ideas, (Butler-Kisber & Poldma, 2010) and provided the catalyst for questions in the semi-structured interviews. Its purpose was to bring to the fore some of the thoughts and insights they had about blended learning, and the factors that enhance or hinder their learning. According to Butler-Kisber and Poldma (2010) concept mapping allows for deeper analysis. A conceptual understanding of teacher learning in adopting a blended approach was evident in the concept map. The concept maps were used in constructing the narratives and in answering question 2 of the research study by conceptualising the factors that enhance or hinder learning to adopt a blended approach. It also enabled further probing of interview questions to elicit deeper responses. A criticism of concept mapping is that the representation of relational concepts can be intricate and confusing (Daley, 2004). In this case the concept maps pre-empted this confusion as they guided the interviews and were not constructed from the interviews. This enabled deeper and richer discussion in the interviews as well as a simplification of the data for the conceptual frameworks.

### **3.9.3 Semi-structured interviews**

The interview is more than data-collection (Cohen et al., 2018). It involves social and personal conversations and connections. According to Alshenqeeti (2014) interviews are interactive and interviewers can gain complete answers. It is a conversation with the purpose of gathering descriptions (Kvale cited in Alshenqeeti, 2014). This elicits in-depth data for analysis. Interviews can be structured, semi-structured or unstructured (Bertram & Christiansen, 2014). This study used the semi-structured interview with prompts in the conversation to extract information. Interviewees should listen and the conversation should flow naturally so as to “seek the particular” (Richards cited in Alshenqeeti, 2014, p.41). The semi-structured interviews were recorded with the permission of the participants for the express purpose of ensuring accuracy in analysing the data when they were transcribed. The interview process suited narrative inquiry as the participants were given the opportunity to tell their stories and the researcher could probe these conversations for further information. Alshenqeeti (2014) cited research that corroborated the usefulness of semi-structured interviews, particularly for narrative inquiry. In the same vein, Barker and Johnson (cited in Cohen et al., 2018) argue that the interview is useful for indicating peoples' interpretations of each other, their context and for understanding situations. Participants speak with their own voice and can express their thoughts and ideas (Alshenqeeti, 2014).

Creswell and Creswell (2018) consider that the presence of the researcher may influence the responses of the participants and the information is provided in a designated space with Brynard, Hanekom and Brynard (2014) cautioning against bias. While disadvantages cannot be ignored, the personal relational aspect in these interviews compensated for these disadvantages and allowed for honest responses. The semi-structured interviews were suitable to generate in-depth, rich data about teacher learning. It was fundamental in answering the two research questions in this study

### **3.10 DATA COLLECTION**

The lecturers were approached individually to request an interview with them for the purposes of research. They all consented to the interviews. The critical incident card and concept maps were emailed to each participant before the date and time of the interview. This was also to

prevent bias during the interviews because the participants had already composed answers for the interview questions. The lecturers were all able to relate incidents, using the critical incidents card, where they had found technology useful and incidents where technology had failed them. This was a useful introduction into our interview. There were a few good chuckles over these incidents, and they evoked memories of adopting technology in their lives and in their lecturing. The concept maps were also similarly used. The lecturers were open to discussion in the interview as the concept map had already provided them with an outline of the interview.

All the interviews were over the lunch hour, averaged 60 minutes, and eats were supplied during this time to create a relaxed atmosphere for the elicitation of narratives. Brynard et al. (2014) caution that a lunch time interview could become a social interaction, but this was avoided by the formality of a recording as well as the use of the critical incident card and concept map. A semi-structured interview schedule was utilized, and further questions were asked during the interview to obtain the relevant information. The personal interest in the research has already been addressed and this added to the informal atmosphere in which the interviews took place. This was felt to be important in view of the stories that the research was seeking to answer the research questions. Three of the five lecturers completed the incident cards and the concept maps in written form. The other two lecturers used them to inform their thinking before the interview and then elaborated on this verbally in the interview. The interviews were recorded to ensure that details were not lost. Notes were made during the interviews to triangulate the transcripts with the information provided. This contributed to the trustworthiness of the data collected and was in line with the methodology advised by Brynard et al. (2014).

After the interview each recording was transcribed. The transcription, critical incident card and concept map were then used to construct a narrative for each participant. The narrative was important to consolidate the participants' complex stories about how they are experiencing their own learning (Keats, 2009). It triangulates the information from the data collection tools. The narratives were emailed to each participant for comment and adjustments. The participants all indicated verbally in casual one-on-one discourses that they were happy with the narratives and that they did not feel that anything had to be added or adjusted. A summary of the learning methods, factors enhancing and factors hindering learning was also emailed to the participants as part of a community of inquiry exercise. The summary was open to comments and

adjustments and once again added to the trustworthiness of the narratives constructed. Two of the lecturers responded to this email and indicated that they were satisfied with the representations that had been made. One of the lecturers indicated that she felt that the factors hindering learning did not apply to her as she had already overcome them. The other three verbally indicated that in their opinions there were no issues and it supported the discussions in the interviews.

### **3.11 DATA ANALYSIS**

According to Cohen et al. (2018, p.643) "qualitative data analysis focuses on in-depth, context-specific, rich subjective data and meanings by participants in the situation, with the researcher herself/himself as a principal research instrument". It is for this reason that narrative inquiry was chosen as the research design for data collection. Analysing this data was an inductive and deductive process. According to Bertram and Christiansen (2014), categories emerge from the data. As the transcripts were read, reflected on and interpreted, patterns and explanations emerged. Wellington (cited in Cohen et al., 2018) constructs a seven-stage model of data analysis that moves from immersion in the data, to reflecting, then analysing, followed by synthesizing, locating data in identified areas, and then reflecting again, and finally presenting. This cycle has been evidenced in the study as the transcripts were read, reflected on, analysed, reflected on again, revisited and finally presented. Bertram and Christiansen (2014) advocate reducing the data and then organising it. Likewise, O'Connor and Gibson (2003) indicate that referring to the research questions helps the researcher organise the data. There was the temptation to include all the themes presenting themselves as the umbrella of learning is extensive, but it was important to focus the data on the conceptual frameworks. The explanations of the participants from the transcripts formed patterns that could be placed within the frameworks. Any explanations that did not fit within the frameworks would be considered inductive information for further investigation. This was in line with 'thinking outside of the box' to look at other themes that have emerged from the data as proposed by O'Connor and Gibson (2003, p.66).

The transcripts were coded to answer each research question. Opfer and Pedder's (2011) complexity theory was tabulated to place explanations about how lecturers learn to use an

adopted approach. Garrison and Vaughan's (2008) community of inquiry framework was tabulated to place explanations about the factors that enhance and hinder learning.

Teacher learning in adopting technology was of interest personally in the attempt to assimilate a blended approach in the modules at the tertiary institution. The complexity theory of teacher learning (Opfer & Pedder, 2011) assisted in understanding and analysing research question 1 of how teachers learned to adopt a blended approach. It directed the analysis to the three areas of focus which were: the lecturer, the institution and the activity. Each of these elements interacted with each other in different ways depending on the many factors influencing the elements at the time. Simplifying it into three areas with many contributing factors provided a framework for analysis to begin with. Any anomalies could be added on and explored further.

**Table 2. Opfer and Pedder's (2011) complexity theory framework applied in answering research question 1. How do teachers learn to adopt a blended approach in a tertiary institution?**

Description	Themes	Elements
	Knowledge	Opfer and Pedder complexity theory. The <b>individual</b> teacher orientation to learning
	Experience	
	Beliefs	
	Dissonance	
	The Learning Activity (using technology as a tool and adopting a blended approach)	Opfer and Pedder Complexity theory: The interaction of the <b>learning activity</b> system and teachers' learning orientation systems
.	(This was not from the interviews, however in view of the structure of the complexity framework, the beliefs and practice of the institution are impacting lecturer learning because of the mandate instituted.)	Opfer and Pedder's Complexity theory: The influences of <b>the institution</b> on professional learning

Identifying factors that enhanced or hindered the learning in adopting a blended approach were also focused on in the study's research question 2. Within the exploration of these factors, the community of inquiry developed by Garrison and Vaughan (2008) proved useful to frame the findings. Concurring with Opfer and Pedder's (2011) complexity theory, the community of inquiry framework provided three elements that constituted a blended approach. These elements were the social presence, the cognitive presence and the teaching presence as was discussed in the previous chapter. The correct integration of these three elements were considered necessary to produce a successful learning experience, and weaknesses in these elements challenged the learning experience. Identifying the factors from the narratives was important to the research. The community of inquiry framework indicators were useful in answering question 2 of the research by categorizing the factors that enhanced or hindered teacher learning to adopt a blended approach. The explanations from the transcripts were coded and located within the corresponding indicators. New categories could be added to discuss as anomalies.

**Table 3. Garrison and Vaughan's (2008) community of inquiry framework applied in answering research question 2 in identifying the factors that enhance or hinder learning to adopt a blended approach.**

Description	Themes	Elements
	Enabling risk-free expression	<b>Social Presence</b>
	Encouraging collaboration	
	Expressing emotions, camaraderie	<b>Cognitive Presence</b>
	Having a sense of puzzlement	
	Exchanging information	
	Connecting ideas	
	Applying new ideas	<b>Teaching Presence</b>
	Setting curriculum and methods	
	Sharing personal meaning	
	Focusing discussion	

These particular themes and the process of analysis are explored in detail in chapter 4.3.



### **3.12 TRUSTWORTHINESS**

Krauss (2005) asserts that the data analysis is an intuitive process because the researcher is embedded in the research as a participant. The subjectivity of the research and the need to discover the intended meanings in the discourse emphasise the hands-on approach of the researcher. It is thus imperative to the integrity of the research that it is trustworthy. Cohen et al. (2018) identify trustworthiness to be based on credibility, transferability, dependability and confirmability. It was necessary to ensure that the data collection process and the analysis of the data met these criteria.

The fact that I am a colleague of the participating lecturers already ensures a measure of credibility. I am familiar with the context and was able to triangulate much of the data with my own experiences in the form of investigator triangulation (Cohen et. al., 2018). This was the same reason that the data was dependable and confirmable. The critical incident card, the concept map, the transcripts and the narratives all informed the credibility and dependability of the data by triangulating the responses and thus ensuring the accuracy and consistency of the data. Transferability is applicable since lecturers at higher education institutes all engage with technology and may be able to inform their practice from the narratives of these participants. The phenomenon must be presented “fairly and fully” (Cohen et.al., 2018, p.248). This was a particular aim of the research to ensure that it was valid. Each lecturer was given a copy of their narratives and asked if there were any insights to add or any misrepresentations. They were also invited to participate in a community of inquiry to add or adjust the summary of the learning, and factors enhancing or hindering learning to adopt a blended approach. They all indicated that the narratives were accurate as per our interviews and no one suggested any changes to their narratives. Only two lecturers responded via email to the community of inquiry platform, but the others all indicated verbally that they were satisfied with the representation of the data collected. The ethical standards were an integral part of the study.

### **3.13 ETHICAL CONSIDERATIONS**

It was of paramount importance that this study did no harm to the participants as is ethically required by researchers (Cohen et al., 2018). As per ethical requirements stated in Curtis, Murphy and Shields (2014), informed consent was obtained from the participants. The anonymity of the participants was protected by assigning pseudonyms. Confidentiality of

participants was assured and information they provided was not divulged to anyone else except the supervisor. Participants were informed that their participation was voluntary and that they were free to withdraw from the study at any time. They were kept informed of the process and included in finalizing the narratives so that the data reflected their voices. The data accurately portrayed the meanings and descriptions that the participants wanted to make known. The interviews all went smoothly in a collaborative atmosphere. There was careful attention paid to maintaining anonymity and none of the participants knew who was involved in the study. This maintained the trustworthiness of the research.

### **3.14 CONCLUSION**

In this chapter, the interpretive paradigm and its suitability for this research study were outlined. Next, the qualitative methodological approach and why it was appropriate for this study was deliberated. This was followed by a discussion of narrative inquiry and the strengths and limitations of this research design. The research context and the purposive sampling that this study required were presented. Critical incidents, concept maps and semi-structured interviews, and the applicability of each in addressing the research questions were explained. The data collection, analysis process and the conceptual frameworks needed for informing the findings were discussed. Finally, the criteria needed to keep the study trustworthy and ethical were addressed. The next chapter describes the analysis process in depth.

## **CHAPTER 4: DATA ANALYSIS**

### **4.1 INTRODUCTION**

The previous chapters outlined the literature and the conceptual frameworks that are fundamental to this research and explored how the methodological approach of narrative inquiry was conducted to address the research questions. This then sets the scene for the narrative discourses to commence and thus the focus of this chapter is on the data findings using the two conceptual frameworks. The discussion of the findings with reference to relevant readings is presented in chapter 5.

Data was obtained from five participating lecturers at a private higher education institution. Firstly, in this chapter the narratives of the five participants are presented. These narratives were constructed using critical incidents, concept maps and interviews held with each participant. The narratives and the themes from the conceptual frameworks triangulate the data to ensure accuracy in the analysis since the participants all agreed with the content of their narratives. Secondly, the common ideas and themes deduced using the conceptual frameworks as they pertain to the two research questions are highlighted. The first research question is answered using Opfer and Pedder's (2011) complexity theory. The themes from this theory are presented in table form and the relevant themes were noted from the transcripts and narratives. Ideas and themes that emerged after an inductive analysis are also presented. This system was repeated for the second research question, which used Garrison and Vaughan's community of inquiry framework. All five participants were assigned pseudonyms to protect their anonymity and to allow them to communicate freely and honestly. They participated fully and were open to discussions that detailed the stories of their personal experiences.

### **4.2 THE NARRATIVES OF TEACHERS ADOPTING A BLENDED APPROACH**

#### **4.2.1 Lindi's narrative**

Lindi lectures the foundation phase Bachelor of Education degree and this is her second year at the institution. She is a young mom and has taught overseas and locally in the grade R classroom. One of her strengths is her ability to integrate technology effortlessly into her

lectures. Her modules are not on the institution's learning management systems platform and so she has made other plans.

Her understanding of blended learning is: *“keeping up to date with systems that provide effective and efficient education or learning tools that benefit the students. It also provides another form of interaction from the students either active participation or visual/auditory-kinaesthetic.”*

She feels that this gives her the opportunity of reaching all the different learning styles of the students. She uses Google classroom and various apps such as YouTube, TED, Canva, Wix and Kahoot as technological tools in her lecturing. There are some educational sites that she subscribes to that allow her access to “wonderful” material to place in the google classroom for the students to download as resources.

Lindi's positive experiences with technology are the excitement and interest that the students show when introduced to these. The benefits of using a blended approach correctly is that it is efficient and saves time. The students can upload their work onto Google Classroom. They can view one another's work and get encouraged to complete their tasks. They also have examples and find clarity to be able to complete their tasks correctly. There is easy access to common information for assignments and tests.

There are frustrations more than challenges in that the technology may not be compatible with the software on her computer. This requires a series of time-consuming activities just to get going. According to Lindi, her *“biggest frustration personally with technology is that different software is required for different operating systems.”* Lindi also feels that it does not look professional to be presenting information in a lecture but to change displays and settings first. She also finds it limiting to find a great tool, but because of the expense related to accessing it she is not able to utilize it. An added challenge is the range of experience the students have with technology. Some find it terribly difficult to engage the tools that she makes available and this requires more time to teach them how to use it correctly. Students have no memory on their electronic devices, or their batteries are flat and the WiFi may be down on any given day. She often requires one-on-one time to get them to feel comfortable with a tool. There is also the fact that some students disengage from technology, e.g. during a video presentation.

Lindi is one of those people who is not intimidated by technology and has grown up with it as part of her own learning experience. She remembers being taught how to search on Google efficiently and lists this as her most important skill. Her own learning has been mostly through

self-discovery. She also makes sure that she exposes herself to additional training at any institution that she works at. This is usually in the form of staff development programmes. Self-discovery becomes an intrinsic motivation for Lindi. She added:

*I am wanting to be better because I found it and I like it and I feel comfortable using it although in saying that I would be more inclined to use a tool if I had a better understanding of it.*

She thinks that one on one training is beneficial to learn to use a new tool. In her own training experience, lecturers all arrived for the first time to learn how to access the platform. Some were not sure how to log on and then it became very time consuming. Some were left in limbo until everyone could move onto the next stage by which time they are overwhelmed and those ready for a deeper interaction did not get the full benefit of the training. She feels it would be beneficial to be exposed to training by an expert on one tool that is specific and presented to everybody so that “*those who want to use it can use it and those who don't, don't need to.*”

Her own learning is affected by a bad experience and if the tool takes too long to navigate or decipher, she is less inclined to use it. On the other hand, she is open to exploring and searching for the latest released apps relevant to education.

#### **4.2.2 Harrison's narrative**

Harrison has been lecturing in the institution in the Commerce faculty for 7 years. He has a lot of experience and an understanding of pedagogic content knowledge which he articulates in his modules. All his modules are on the institution's learning management system and so he has had to familiarize himself with this platform from the beginning. It is interesting to note that our discussion was able to focus on his online modules which epitomizes for Harrison the definition of a truly blended approach in tertiary education.

The modules he lectures on the online space have 12 hours of face-to-face time allocated and the rest are all collaborative sessions that he controls after hours. He has large groups of students numbering about 50 each and they are mostly part-time students who are employed during the day. The organisation of his collaborative sessions requires a link and time to be communicated to the students. They will have worked through a certain section on their own and can use the collaborative session to clarify their understanding through asking questions and following explanations. Harrison presents the problems and the solutions on a computer

whiteboard that the students can follow on their devices. The sessions are also recorded and uploaded the next day for students to access at their convenience. He found that the students engage with the content more and email him frequently with their queries and confirmation of understanding. There is more engagement than with the students in his other modules on campus. The face-to-face sessions for the online modules are used to review the assignment and to revise past papers. He thoroughly enjoys this mode of delivery and prefers it to the modules that are face-to-face with a few online activities as prescribed by the institution. According to Harrison: *“When you get used to it you really enjoy it.”*

In learning to use the collaborative engine, Harrison was able to enlist the help a member of staff who was familiar with online lecturing. She guided him step by step through the process and they were able to do a practice run before his first collaborative session. Harrison praises her patience and repeated instruction in assisting him to learn to use the tools needed for the collaborative sessions. He stressed the importance of the one on one pilot session for his confidence in using technology. The other technologies that he applies is found through Google and investigation. Harrison enjoys group training, but also feels the need for individualized experimentation with the technological tools before using them.

The factors that enhance his learning to use technology are influenced by the ease and convenience of its application. He stated: *“One of the requirements is that technology must be easy to use. Very fast as well.”* Harrison is also influenced by the type of student he lectures. He feels that if they are willing to participate and learn it makes his own learning more interesting and relevant. He will be inspired to find further resources by going online and googling tools to enhance their learning.

There are logistical factors that challenge his learning to use technology. The connectivity of WiFi is a major challenge. He now does his collaborative sessions from campus because the lack of reliable connectivity at home was influencing his ability to access the online space. The costs of data and upgrades also impact his use of technology. The other factors that he finds challenging involve the students’ lack of technological knowledge; their devices which do not have the software, data or capabilities required by the online module and their lack of listening skills. This affects the collaborative sessions and the usefulness of the blended approach.

In learning to use a technological tool, Harrison feels that some instructions can be vague and then the tool does not operate as it is supposed to. It is frustrating to get to a point where one

cannot proceed because the steps do not correlate with the options on the screen. These instances require support from the IT on campus.

#### **4.2.3 James's narrative**

James is a newcomer to the institution and has had to adopt the 20:80 online: face-to-face policy in a short time. He has the distinct advantage of growing up with technology (personal computers, tablets, iPhones, smart phones, etc.) and this has impacted his confidence with adopting a blended approach. He also has a natural curiosity to discover further useful technological tools to use in his lecturing. James lectures didactic modules in the Bachelor of Education school. These modules are not on the institution's platform, nevertheless he follows the policy in providing online readings, YouTube videos, slides and ice tasks for students to engage with on the student's portal.

James defines blended learning as *“a combination of self-directed online activities for the students and face-to face sessions in the lecture room where these activities are further explored by the lecturer.”* He often finds extra readings and YouTube clips to complement the material provided in the module and to further the learning of his students.

Learning to use technology comes naturally to James and he is eager to experiment and master new technological tools. He enjoys initial courses to introduce the use of different tools available, however he will then explore each tool in depth on his own by *“struggling and playing around with the functions until I have made it my own.”* He is a life-long learner who will discuss different technology with experts or other lecturers. When he finds a technological tool that he can use in his modules he will investigate it until he is confident in its use. James explained that technology changes and he is happy to adapt his use of different tools provided they enhance his lecturing and benefit the students' learning. He likens it to learning a new language that you perfect through practise as opposed to a 'once-off' learning event which is forgotten by the time it can be used.

Factors that enhance his learning are if the technology is easy to assimilate and use. It will pique his interest if he can see the benefits of using it; however, he is unlikely to use it if he has to invest large amounts of energy or if it is time-consuming to implement. He gave a very clear example about the use of a smartboard in the Middle East in contrast to his exposure to the use of smartboards in South Africa. The software in the Middle East made smartboards easy to navigate and utilize. His experience with smartboard software in South Africa is that it is time-consuming to install and is not able to efficiently meet the needs of lecturers as quickly

and easily as PowerPoint. He is economical in his approach to technology because his modules are content-heavy and thus, he does not use tools because they are available but rather insists on functionality.

There are challenges to adopting a blended approach and these relate in a small part to the students' who do not want to engage with the material placed online. They have many reasons for not doing so and James feels that their reluctance does impact the choices he makes in terms of material to place online. However, he is not personally impacted in his own learning by the students' approach to blended learning. His own challenges relate more to the costs of updating, the availability of useful tools and how simple they are to assimilate and implement.

#### **4.2.4 Dale's narrative**

Dale has obtained her Masters' degree in leadership. She lectured at various institutions for 8 years and adopted any technology offered to enhance her administrative functionality. She recently became fully immersed into the technology of the institution and has taken on the role of assisting lecturers and students on campus in accessing technology tools to benefit learning. This role has required her to further her own training in adopting a blended approach as well as becoming technologically adept at implementing administrative functions. She adds: *"It has opened up the box of Jumanji and everything is there."*

In her understanding of a blended approach, Dale was able to pinpoint the incident that for her encapsulated the meaning of the term. She went online and typed in "collaborative tool". The 'Kahoots' tool came up and she went about creating a short online test that the students could participate in when they were next in class. They were able to log onto the game individually in class and the winner was on the screen at the end of the game. This tool engaged the students in their own revision of the work covered and they all participated enthusiastically. This then led to the understanding of a blended approach, where students were engaged in an online activity to enhance their learning. For Dale the focus in her lectures is student success and she elaborated: *"I know that it is my responsibility to facilitate the learning of the student to ensure academic success."*

Initially, Dale acquired her technological knowledge from one on one sessions with a trainer who was able to detail the workings of the learning management system in place on campus. The pressure of acquiring a variety of technological skills has made it necessary for Dale to



acquire a large volume of knowledge in a very short time. Her learning strategy has been to investigate the tools she is interested in, and to use trial and error experimentation to improve her knowledge and skills. She has found YouTube videos very helpful in acquiring the know-how of certain technological tools. Recently, Dale has found the training in the Webinars that she attends to be beneficial in learning to use technology. Each Webinar has activities linked to them that need to be completed to showcase her own learning and understanding. Here again, she has had the opportunity to learn through experimenting with the tools and improving her own understanding individually.

The factors that enhance and motivate her to learn to use the technological tools stem from her eagerness to see her students succeed. She is greatly encouraged by their excitement and participation in using the online tools. The interest displayed by lecturers is also a motivating factor. After a recent presentation, Dale found lecturers interested in learning to use technology in their own lectures and in finding ways to better use the learning management system available to engage students. She shared: *“I can collaborate with them in achieving their class objective and that’s actually good... things like ok we are teaming up and my end goal in academics is student success.”*

She feels that there is a necessity to reach generation Z who are *“residents in the technology sphere.”* The fact that there are a wide range of technological tools available also enhances her motivation to find an appropriate tool. The scope of technological tools has the potential to individualize the learning experience for the student, making it personal and enriching for them at any time or place.

Dale lives by the pragmatic motto “work smarter, not harder.” Technology has the potential to make this motto applicable in every sense of the word. According to Dale: *“If something can be done in a more practical, efficient, cost-saving, time-saving method why would you want to do it any other way if you are going to get the same quality results? And it’s worked well.”*

However, the challenges in learning to adopt a blended approach are many. For Dale, there is the volume of technological knowledge available and she opines: *“It’s massive.”* Dale has pressurized herself to become familiar with the individual modules on offer at the institution. She feels strongly that different subjects require individualized tools for appropriate student engagement. She explained:

*You are integrating other peoples’ styles into something to make it a product that’s user-friendly for the students as well. There is also the know-how involved in*

*troubleshooting when the online activity is not working properly. Is it the connectivity, the software, the website? These factors can negatively impact the effect of online engagement.*

According to Dale, there are also time constraints. It takes time to explore and then familiarize oneself with the necessary tools to enhance student engagement.

Students are also reluctant to engage in online activities. Dale experimented with a collaborate session, but the students did not go online. Their constraints were that they do not have data availability at home. Many of them do not have adequate devices while others do not have adequate software packages and many of the students lack the know-how. This does affect the activities lecturers are able to implement and limits the online engagement outside of campus hours.

Dale also highlighted the infrastructure and resources that students and lecturers need for online engagement as a potential obstruction to using a blended approach. The connectivity can be unreliable and upgrading computers and software is expensive and time consuming. These are challenges that are currently prevalent in our technological environment.

#### **4.2.5 Joan's narrative**

Joan is considered the technical wizard on campus. She can use a wide range of technological tools and applies her skill in training others how to use the learning management system of the institution. She has always been interested in technology and did computer programming courses before computers were a household item. It is her pioneering spirit that comes to the fore in a discussion about technology and a blended approach. She is passionate about technology and integrating digital skills with lecturing, which makes her an ideal participant in a discussion about the blended approach.

Joan has completely flipped the classroom in her online modules. She applies tools for social interaction which brings an extra dynamic to the classroom. Students are from all over the world and their commitment to learning and engagement inspires her to find applications that are 'fit for purpose'. Her students did well in her online modules which enhances her exploration of tools to equip her students for the future.

In her own learning, Joan is experimental and interested in current trends. She is constantly updating her learning and finding new applications. She adds: *“I see new ideas all the time and as soon as I see something that takes my fancy I go and try it.”*

She has a love for technology and is not daunted by new policies prescribing technical usage. She prefers to teach herself and will often experiment and try new programs until she has mastered them. Joan shared: *“I hate going into a room and being trained. I prefer to teach myself. I also think it’s quite nice having written instructions and doing it in your own time.”*

She is already ahead of the designs that are in place and is often exploring something new that will improve teaching and learning before it is even presented. Her excitement and the potential problem-solving solutions programs they have are already enough motivation to enhance her own learning. This passion drives her interest in using technology in her modules. It is also the reason many lecturers ask her help in learning to use technology. Joan has been described as an incredibly patient person who will show one repeatedly how a program works. One of the driving forces behind this passion is her intense belief that technology can improve the learning experience.

In attempting to document the challenges Joan faces in learning to use technology, it became clear that any challenges had been addressed and overcome. She feels that there is no excuse for not using technology. She has found ways to experiment and is able to overcome the troubleshooting aspects of every program. Other lecturers may consider the students and their lack of response to technology as a challenge that impacts their learning, but Joan finds a way to enable them to engage online with the minimum disruption and to the maximum exposure of the tools they will encounter in their future. Digital skills are considered essential and so there is no debate in her mind as to whether it is the most effective way to learn or engage with the content. She takes her students into the computer room and equips them to participate with online applications to enhance their learning experience. There are students who evade computer engagement if they can, but it is to their own detriment as the technical aspect of business modules is essential. The social aspect of a blended approach may not be met by the learning management system of the institution, but Joan has the expertise to find a tool to ‘fit the purpose’. This is the advantage of having integrated a love for technology and a love for teaching, which is necessary in the 21<sup>st</sup> century. With regards to technology Joan asserts: *“You can’t dislike it.”* So, while some lecturers are still evading the need for technology in their

lectures, Joan has seamlessly integrated the two to create a blended approach that benefits herself and her students.

### **4.3 ANALYSIS OF DATA AND EMERGING THEMES**

The data was generated from critical incidents, concept maps and individual interviews. The narratives were constructed based on the lecturers' stories of their experiences with technology and adopting a blended approach. The intention is to illustrate and describe 'the storied' lives (Savin-Baden & van Niekerk 2007, p.464) of each lecturer participant. This was in response to the following research questions:

1. How do teachers learn to adopt a blended approach at a tertiary institution?
2. What factors enhance or hinder teacher learning in adopting a blended approach?

Deductive and inductive methods of analysis were then employed to interpret and analyse the narratives and transcripts of the participants. The deductive method used the themes identified in Opfer and Pedder's conceptual framework to answer research question 1, i.e. the individual teacher's knowledge, experience, beliefs, and dissonance; the learning activity; and the institution's beliefs and practices. The focus for teacher learning was mostly on the factors influencing the individual's learning. The themes emerged from the analysis of narratives and transcripts and were then aligned to the conceptual frameworks. Next, the tabulations of the participants responses to the research questions are depicted. The deductive method also tabled Garrison and Vaughan's community of inquiry framework indicators in answering research question 2, i.e. social presence being risk-free expression, collaboration, camaraderie; the cognitive presence being a sense of puzzlement, exchanging information, connecting ideas and applying new ideas; the teaching presence being a sharing of personal meaning, setting curriculum and methods, and focusing discussion. The inductive method of data analysis was used to identify categories not in the conceptual frameworks but mentioned by the participants as influencing their learning or the challenges and success of adopting a blended approach. The analysis of the data in relation to the literature and frameworks is then discussed.

**Table 4. Findings for research question 1: How do teachers learn to adopt a blended approach at a tertiary institution?**

**Opfer and Pedder's complexity theory framework**

Description	Themes	
<p><b>Joan:</b> I find ideas I am interested in. I subscribe to lots of newsletters, twitter. I follow people. I see something that takes my fancy and I go and try it. I'm finding international things that I am interested in.</p> <p><b>Harrison:</b> I google. I always try it and see is this working? Then I adopt it.</p> <p><b>James:</b> I am curious and want to be knowledgeable about an app.</p> <p><b>Lindi:</b> I google. I subscribe to a lot of education forums. These are the top 10 apps in education.</p> <p><b>Dale:</b> I typed collaborative tool and it popped up and it was the first one I picked, and it worked like magic.</p>	KNOWLEDGE	Opfer and Pedder complexity theory. The <b>individual</b> teacher orientation to learning system
<p><b>Joan:</b> I don't have a problem with figuring out something technical. I come from a technical background, so it makes a difference.</p> <p><b>Dale:</b> I didn't come from a technical background, so I am trying to use and extract knowledge from my previous experience of information management systems and my years in academia.</p> <p><b>Harrison:</b> All my modules are on the learning management systems platform, so it is easier.</p> <p><b>James:</b> I grew up with technology. It is second nature.</p> <p><b>Lindi:</b> I grew up with technology. I remember being taught how to use google properly. I also remember being taught very useful things so wherever I have gone I have made sure that I expose myself to additional training.</p>	EXPERIENCE	
<p><b>Joan:</b> You can't collaborate and mediate online if you are not technical. You can't dislike it. The higher the blend the more technical ability you need to have. You have to be more flipped. You have got to construct knowledge.</p> <p><b>Dale:</b> I think you have to learn the digital skills, so some form of blended learning has to happen – just to prepare them for the future.</p> <p><b>Harrison:</b> It is easier. If all modules could be like that then less work.</p>	BELIEFS	

<p><b>James:</b> When used correctly, blended learning lends itself to a much more efficient and time saving approach.</p> <p><b>Lindi:</b> The use of different tools enhances lecturing and benefit learning for the students.</p>		
<p><b>Joan:</b> I am exploring and looking at things all the time. I will take the things I like the most so that probably helps a lot. But technology.... I love technology. I don't have a problem figuring something out.</p> <p><b>Dale:</b> The past 6 months have been wild because I can see where I started and to where I am currently using it. It has opened up the box of Jumanji and everything is there.</p> <p><b>Harrison:</b> They have changed the whole online vehicle...when you get used to it then you really enjoy it.</p> <p><b>James:</b> I have had to attend training courses...but I prefer the functionality of tools rather than using them just because they are available.</p> <p><b>Lindi:</b> I need more training on the institution's learning management system.</p>	DISSONANCE	
<p><b>Joan:</b> It's fit for purpose. I think that's what they are trying to do with the whole constructivism stuff. They construct knowledge much better.</p> <p><b>Dale:</b> My motto is work smarter not harder. If something is practical, efficient, cost-saving and a time-saving method why would you want to do it any other way?</p> <p><b>James:</b> It is about discovering something I can use. Keep it simple and at the end of the day make it your own.</p> <p><b>Harrison:</b> I am lecturing on the online platform so that's the best thing, an advantage. When you get used to it, you really enjoy it.</p> <p><b>Lindi:</b> I enjoy finding something I will find useful for the students.</p>	<p>THE LEARNING ACTIVITY (using technology as a tool and adopting a blended approach)</p>	<p>Opfer and Pedder Complexity theory: The interaction of <b>the learning activity</b> system and teachers' learning orientation systems</p>
<p><b>Policy:</b> The institution has instituted an 80:20 face-to-face to online policy whereby lecturers have to use technology in their modules. The institution has training sessions for using the learning management system and has employed an educational technician to assist lecturers in this area. The mandate is that engagement with technology equips students for the future and there is a commitment to improving online collaboration in all modules.</p>	<p>INSTITUTION (This was not from the interviews, however in view of the structure of the complexity framework, the beliefs and practice of the institution are impacting lecturer learning because of</p>	<p>Opfer and Pedder's Complexity theory: The influences of <b>the institution</b> on professional learning</p>

	the mandate instituted.)	
<p><b>Dale:</b> So, I think my experience [learning] has evolved from basic administrative functions to really using it for student engagement. That's why I made notes on my concept map. It is my responsibility to facilitate the learning of the students and to ensure academic success.</p> <p><b>Lindi:</b> It often happens when you stay abreast with the developments in technology [learning] that you come across incredibly useful applications or programmes that are of great benefit to the students.</p> <p><b>Harrison:</b> the students are so good. These ones do the greater part on their own. When they get stuck, they will email me. It is partly because of the type of student I have. They are willing to learn. They are willing to contribute, so I google for them and do all that stuff.</p>	STUDENT	<b>This is a dimension not considered by Opfer and Pedder. It has come out in a critique of Opfer and Pedder's complexity theory by Boylan, Coldwel, Maxwell and Jordan (2018).</b>

**Table 5. Findings for research question 2: Factors enhancing teacher learning in adopting a blended approach.**

**Garrison and Vaughn's Community of Inquiry (COI) framework.**

Description	Themes	
<p><b>Lindi:</b> Technology is efficient and time saving. It has benefits for the students. Being able to show the students the bigger international connection makes it much more interesting. It opens you to other styles of learning. Learning more and keeping up to date with technology tools.</p> <p><b>James:</b> If the technology makes my life easier and if it perks my interest. It must be beneficial.</p> <p><b>Dale:</b> What makes it satisfying is when you have the positive outcomes. Like I was quite happy after orientation. Some of the lecturers were keen to apply technology in their class.</p> <p><b>Joan:</b> I love technology. Most of the things are things nobody else here knows about because I am finding international things that I am interested in. I am exploring and looking at things all the time.</p>	APPLYING NEW IDEAS	Indicator for Cognitive Presence.

<p><b>Lindi:</b> It provides students with a source of common information for all the students to use. You come across applications or programs that are of great benefit to the students. Because you are now incorporating other tools it's providing an opportunity for students to be involved in a different form of application of the content or finding the content and doing something different with it.</p> <p><b>Harrison:</b> I am lecturing online. It is easier because of the type of students I do have. They are willing to learn. They are willing to contribute.</p>	EXCHANGING INFORMATION	Indicator for Cognitive Presence
<p><b>Harrison:</b> They construct their knowledge much better.</p>	CONNECTING IDEAS	Indicator for Cognitive Presence
<p><b>Lindi:</b> In google classroom the students uploaded their work and others can view it. This encourages other students.</p> <p><b>Dale:</b> I can collaborate with them in achieving their class objectives. We are teaming up.</p> <p><b>Harrison:</b> We use collaborate. It is easier and the students are interested.</p>	ENCOURAGING COLLABORATION	Indicator for Social Presence
<p><b>Joan:</b> I love 100% online. My students did well. They were from all over the world, which was wonderful. The students were having so much fun. It was very social. They used to tease each other.</p> <p><b>Harrison:</b> Support is a factor that enhances my learning.</p>	EXPRESSING EMOTIONS, CAMARADERIE	Indicator for Social Presence
<p><b>Harrison:</b> Factors that enhance my learning is training.</p>	CURRICULUM AND METHODS	Indicator for Teaching Presence



**Table 6. Findings for research question 2. Factors hindering teacher learning in adopting a blended approach**

**Garrison and Vaughan's Community of Inquiry (COI) framework.**

Description	Theme	
<p><b>Lindi:</b> I think having a bad experience with something (e.g. The institution's learning management system) could put you off learning to use it. Knowing how to use the tool.</p> <p><b>Harrison:</b> It is frustrating when you have vague instructions and you get stuck, then you can't proceed. If you press the wrong button it may take you out of the screen.</p> <p>James: In the middle East the tools are more advanced. They are easy to use and have functionality. Here it is more difficult. The software is not always user friendly.</p> <p><b>Dale:</b> The volume of the information to understand and to choose from is huge.</p>	<p>APPLYING NEW IDEAS</p>	<p>Indicator for Cognitive presence</p>
<p><b>Lindi:</b> I think one of the biggest challenges is the different levels of the learner. Some have not been exposed to technological tools whereas others have. You want to use the technology, but you have to have one on one sessions just to get the students to feel comfortable using the tool.</p> <p><b>Harrison:</b> Another problem is the knowledge on the students' part. So often they struggle.</p> <p><b>Dale:</b> Students are not fully proactive. They have language barriers, misunderstandings, lack of confidence, no up to date devices, no data, not the correct software package, which limits what I can use.</p> <p><b>Joan:</b> My challenges are mainly related to the students. You have to find the right thing for the students to do outside of class or else they won't do it.</p>	<p>EXCHANGING INFORMATION</p>	<p>Indicator for Cognitive presence</p>
<p><b>Joan:</b> On the institution's platform the students would rather email me personally than answer in a discussion forum.</p> <p><b>James:</b> Students don't want to do it unless it is for marks.</p>	<p>ENCOURAGING COLLABORATION</p>	<p>Indicator for Social presence</p>
<p><b>Joan:</b> The platform is not always user friendly for the students.</p>	<p>CURRICULUM AND METHODS</p>	<p>Indicator for</p>

<p><b>James:</b> The choice of the tool can be difficult if it has no functionality in my module.</p> <p><b>Dale:</b> Too much, too much. The volume is massive and integrating other people's styles into making a product that is user friendly for the students as well.</p> <p><b>Lindi:</b> If it requires deciphering, I am less inclined to use it.</p> <p><b>Harrison:</b> If the tool has vague instructions that you can't follow, and implementation is difficult.</p>		Teaching presence
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**Table 7. Factors that hindered learning noted by the lecturers, not covered in the COI categories and indicators**

<p><b>Lindi:</b> When it requires a bit more time, I am less inclined to use it. More time is needed to teach students how to engage correctly with new tools introduced.</p> <p><b>Harrison:</b> Technology must be very fast as well.</p> <p><b>James:</b> It is challenging if the tool is time-consuming.</p> <p><b>Dale:</b> Time is the main factor challenging my learning.</p>	TIME	
<p><b>Lindi:</b> I could have a day when things aren't going right. You start your computer and it wants to download software. There is no WiFi or the software is incompatible with the institution's platform. The students often don't have data, the correct software, up to date devices etc.</p> <p><b>James:</b> updating and downloading the correct software</p> <p><b>Harrison:</b> Connectivity. That is why I stopped using collaborative sessions at my house. Another problem is on the students' part, they</p>	TECHNICAL ISSUES	

struggle and some they might not have devices. <b>Dale:</b> Connectivity and sometimes the website itself. Students also have no data, no up to date devices, incorrect software packages.		
<b>Lindi:</b> Some of the tools are costly to use. It also costs to update one's technology. The students often cannot afford data and do not update their devices. <b>James:</b> There is a cost to updating your computer software so that it can use technological tools. <b>Dale:</b> students have no data or connectivity at home, and this limits the choices I can make about tools to use.	COSTS	
<b>Dale:</b> I have the pressure of being a technical expert. This expectation is quite challenging.	EXPECTATIONS OF SELF	

#### 4.4 THE MEANING OF A BLENDED APPROACH

In Chapter 2 various definitions and interpretations of blended learning were discussed. This is the starting point of this study and so requires a brief exploration of the definitions presented by the participants in their concept maps and in the discussions. Many authors defined a blended approach as designating online tools to classroom activities (Holmes & Gardner, 2006; Picciano, 2009; Stein & Graham, 2014; Eady, Woodcock & Sisco, 2017; Keamy, 2017 etc.). This correlates with three of the participants' conceptions of adopting a blended approach at this institution:

James's definition of a blended approach in the interview was: "*A combination of self-directed online activities for the students and face-to-face sessions in the lecture room where these activities are further explored by the lecture.*"

Harrison's comment on his concept map was: "*Combine face-to-face with technology.*"

Lindi's definition in the interview: *"I personally feel that blended learning is keeping up to date with systems that provide effective and efficient education or learning tools that benefit the students."*

Cavanaugh, Ellerman, Oddson and Young (cited in Burge & Haughey, 2001) identified a change in relationship with knowledge production and this is the effect that Garrison and Vaughan (2008) explained in their community of inquiry framework for adopting a blended approach. It requires a change in teaching strategies as the focus is on learner-centred learning where the lecturer becomes a facilitator. This is in line with the Dale's definition of a blended approach as students engaged in online activities to enhance their learning. Joan defined it as a combination of face-to-face interactions with online engagement that was fit for purpose. She also commented on the difficulty of enabling this within the confines of an 80:20 ratio of face-to-face to online engagement but recognized it as a necessary policy to begin the transformation of the institution's teaching and learning activities to embrace technology in all its modules. In the interviews, it was then broadly accepted that when discussing how learning to adopt a blended approach took place, the discussion was about learning to use technological tools that they could implement in their modules. For most of the lecturers this could be in the classroom as well as online.

According to Teach thought staff (2018), "Blended learning is an approach to learning that combines face-to-face and online learning experiences. Ideally, these two."

I personally feel that blended learning is keeping up to date with systems that provide effective and efficient education or learning tools that benefit the students. It also provides another form of interaction from the students, either active participate or visual/auditory – kinaesthetic, which to me, means that you have the opportunity of reaching all the different learning styles of the students.

Figure 3 *Lindi's definition of blended learning in her concept map*

#### **4.5 RESEARCH QUESTION 1: TEACHER LEARNING IN ADOPTING A BLENDED APPROACH**

Opfer and Pedder's (2011) complexity theory framed this study as the complexity of learning to use technology in lecturing modules involved the individual lecturer, the institution and technology in an interwoven, nested construction.

From the narratives, it is evident that learning is an **individual** experience and occurs privately even if the initiation into the use of the technological tool is in a public platform with the right conditions. Lindi, Dale, Harrison and James preferred to sit one on one with a more knowledgeable person to learn to use the identified technological tool that would benefit teaching and learning in their own modules. This personalized the learning required in adopting a blended approach. Lindi commented: *“for me personally, it is self-discovery because it then becomes an intrinsic motivation.”* This concurs with Joan’s learning as she: *“hates going into a room to be trained. I prefer to teach myself. I also think it’s quite nice having written instructions and doing it in your own time.”*

Additionally, she has a love for technology that motivates her to adopt a tool. Each participant intimated that they experimented with a technological tool independently until they felt confident in using it. All the lecturers referred to YouTube as a viable resource to help them learn how to use a technological tool. The tools that were identified as being used were: The learning management platform of the tertiary institution, Google classroom, YouTube videos, TED, Canva, Wix, Kahoot, Edmodo, various apps, and PowerPoint.

It also became evident from transcribing the interviews that the learning was nested as different aspects are interlinked with each other. **Dissonance** or “cognitive conflict” (Opfer & Pedder, 2011, p.388) motivated the need amongst the participants to explore different technological tools. Dissonance is the tension created between current knowledge and the need to attain more knowledge for growth and expertise. Primarily, adopting a blended approach is about adopting a new practice which is one of the causes of dissonance. The personal expectations and the need for efficacy creates a dissonance that teachers want to overcome, and it is referred to as the ‘edge of chaos’ (Opfer & Pedder, 2011, p.388). Without this dissonance, technology is placed in classrooms without being incorporated in teaching as was found by Isiyaku, Ayub and Abdulkadir (2015) and Helleve (2013). However, evidence of this dissonance amongst the participants in this study was recorded. *“It has opened up the box of Jumanji and everything is there”* is how Dale summed up the need to learn to assimilate technology, Joan enjoys exploring technology and is motivated by the dissonance while Harrison needs to get used to using the online vehicle before he can enjoy its benefits. Furthermore, James and Lindi see a need to overcome the dissonance created by new technology and are willing to be trained and then explore it personally for efficacy. Dissonance is identified by Opfer and Pedder as a motivating factor in teacher learning.

An important aspect nested in the motivation to overcome the dissonance is the **knowledge** needed to adopt a blended approach. All five participants mentioned that becoming knowledgeable in using technology in their module was important in their learning. Joan and Lindi subscribe to newsletters, forums, Twitter etc. They see the benefits of this knowledge for their modules and in their personal lives. They are motivated to explore technologies and to continue to find knowledge relevant to their fields. James identified it as a driving factor in his learning. Harrison and Dale concur that new knowledge motivates them to improve their learning. This new knowledge has been identified as Technological Pedagogical Content Knowledge (TPACK) by Luran, Alias and Jain (2014) and Blewitt (2019).

Within the causes and effects of changing practices and learning to adopt a blended approach is **experience**. Opfer and Pedder (2011) umbrella these experiences by referring to personal experience, experience with school and instruction, and experience with formal knowledge. In the narratives of adopting a blended approach, experience with technology adds a dimension to the learning. It evidences the different experiences of each participant. Joan comes from a technical background and experiences no difficulties with assimilating technology into her modules. Dale on the other hand does not come from a technical background and so she is “*trying to use and extract knowledge*” from her previous encounters with technology to improve her efficacy in this area. James and Lindi grew up with technology and have experienced it as part of their everyday lives. The dissonance for them is not as daunting and they are willing to experience new technologies to incorporate in their modules. Harrison also did not experience technology in teaching until coming to the institution seven years ago. He has learnt how to use the institution’s learning management system and has used his experience here to implement technology. The participants all reiterated that the positive experiences with technology enthused their use of it, but that they all had experiences where technology failed them in their teaching. This is in line with the findings of researchers who concluded that if the experience with technology was not positive, teachers would not use it and would not change their practice (Keamy, 2017; Isyaku et al., 2015; Bharuthram & Kies, 2013; Hutchison, 2012). However, in keeping with the complexity of learning, all the participants agreed that they need the technical knowledge to improve technological experiences for themselves and their students and to bring about a change in practice. This realisation adds the dimension of beliefs to learning to adopt a blended approach.

Teacher **beliefs** are crucial to changing teaching practice (Opfer & Pedder, 2011). Learning to adopt a blended approach emphasises this aspect. According to Joan: “*You cannot collaborate*

*and mediate online if you are not technical. You can't dislike it. The higher the blend the more technical ability you need to have. You have to be more flipped. You have got to construct knowledge."*

This is the belief that drives her exploration of technological tools to use in her modules. Joan firmly believes that technology introduces a very different learning experience and she wants to be a part of constructing it. Dale, James and Lindi also affirm the advantages of technology and that it is a necessary part of modern life. They believe that incorporating technology into their modules prepares students for real life and incorporates their current technological experiences. Harrison believes that using technology can make teaching easier and thus should be incorporated into all modules. These beliefs are a driving force in their willingness to learn to adopt a blended approach. Their individual experiences, knowledge and beliefs are impacting their willingness to learn to use technology in a blended approach to improve their self-efficacy in their classroom practice. This is in keeping with findings by Eady, Woodcock and Sisco (2017); Vanassche and Kelchtermans (2016); Lim, Lee and Hung (2008); and Helleve (2013).

The responses of participants highlight the individuality and complexity of the learning process. These factors can be encompassed in the teacher professional **learning activity**. In this study there was no specific learning activity to analyse. The learning activities were various tools and applications identified by the lecturers to engage students online. Learning to use a blended approach implies that the teachers or lecturers identify the learning activity for themselves. Opfer and Pedder (2011) contend that the types of materials, the relevance to their daily work and the pedagogical processes all influenced whether teachers assimilated a new methodology into their teaching practice. The participants in this study emphasized the need for these favourable conditions. Dale summarized the conditions succinctly: *"If something is practical, efficient, cost-saving and a time-saving method, why would you want to do it any other way?"* Similarly, Hutchison (2012) identified these factors in his findings.

Opfer and Pedder's (2011, p.377) commentary of these factors that "support and promote this learning" is that it is more complex than finding the right tool, but also about the conditions surrounding the learning activity such as time and pedagogy.

The many conditions that are required for learning to take place were emphasized by Eady et al. (2017). The ease of the use of technology, a psychologically safe environment, self-efficacy, computer competence and the technological support available all need consideration.

Similarly, Picciano (2009) identified the content and skills, the social and emotional aspects of teaching as influencing factors. Additionally, Vanassche and Kelchtermans (2016) explained the vulnerability involved in acquiring these new skills and knowledge. These conditions impact the learning taking place and are a consideration in adopting a blended approach. The conditions around learning to use a technological tool are summarized by the following responses: According to Lindi: *"I enjoy finding something I will find useful for the students.* James concurs: *It is about discovering something I can use. Keep it simple and at the end of the day make it your own."* Joan summarised: *"It's fit for purpose."* Harrison feels safe lecturing on a platform he has been trained for.

The final component discussed in Opfer and Pedder's (2011) complexity theory relates to **the institution**. The norms, structures and practices of the institution can impact teacher learning. While this was not specifically researched in this study, its presence influenced the learning of the participants. The institution has instituted a policy of 80:20 face-to-face to online teaching as an incentive to bring about a blended approach to teaching and learning. The beliefs and practice of the institution influences the beliefs and practice of the lecturers as they adopt a blended approach in keeping with the policy. This in turn brings about the dissonance experienced by the participants as they begin to explore a blended approach in order to implement the policy. This was then a motivating factor to learn to adopt a blended approach. It became evident through the research that the policy of 80:20 face-to-face to online teaching was a way to initialize the process of moving towards a blended approach because all five of the participants saw the relevance of this policy. Adelekan (2013) highlighted the importance of the institution's infrastructure, staffing, course design and technological support.

There is a component that Opfer and Pedder (2011) do not factor into the complexity theory of teacher learning and that is **the student**. This research study highlighted that the participants' learning was influenced by their students. Dale explained: *"I think my experience [learning] has evolved from basic administration functions to really using it for student engagement...It is my responsibility to facilitate the learning of the students and to ensure academic success."*

Lindi reinforced this: *"It often happens when you stay abreast with the developments in technology [learning] that you come across incredibly useful applications or programmes that are of great benefit to the students."*

Boylan, Coldwel, Maxwell and Jordan (2018) highlight this omission in their analysis of Opfer and Pedder's complexity theory. They emphasise the relationship between teacher learning and



student outcomes as a factor that needs to be included in the complexity theory. Opfer and Pedder (2011) mention it as cited by Clarke and Hollingsworth in considering the reciprocal, cyclic nature of changes from teacher learning. In this study, the responses of the students affected which tools the lecturers chose to include in their teaching. This then affected how they learnt to adopt a blended approach. The beliefs, experiences, and knowledge of the students were factors impacting the teaching practice of the teachers. Similarly, Owen and Allardice (2008) referred to the importance of the student in the blended approach. Since the complexity theory reiterates how these factors are all interlinked in affecting how teachers learn, students could be considered in the nested approach to teacher learning.

#### 4.6 RESEARCH QUESTION 2: FACTORS THAT ENHANCE OR HINDER LEARNING TO ADOPT A BLENDED APPROACH

Garrison and Vaughan's (2008) community of inquiry framework was used to analyse the data from the instruments. Their definition of a blended approach was the foundation of this research study and it provided three elements to consider in providing a learning experience using technology.

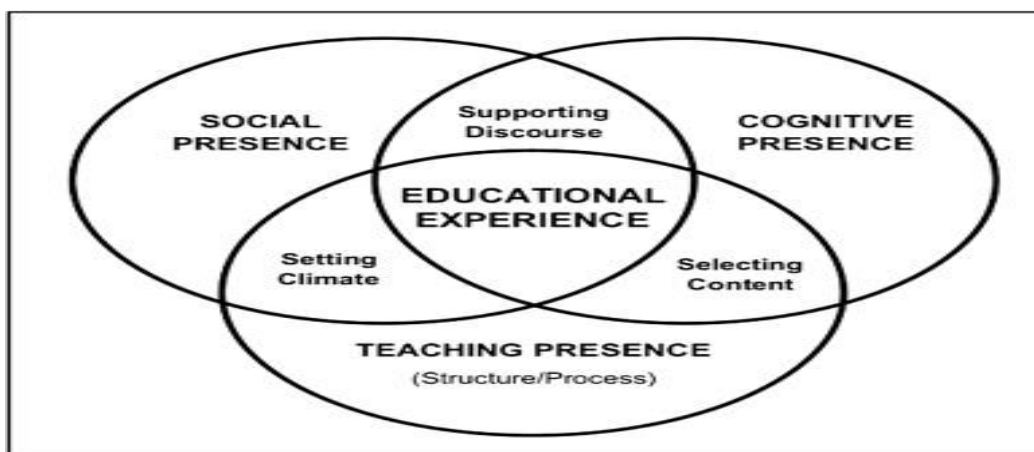


Figure 4 *Community of Inquiry Framework*

**The cognitive presence** referred to in the community of inquiry framework is the element that focuses on inquiry (Garrison & Vaughan, 2008). It is necessary for knowledge to be constructed so that student learning takes place. The participants in this study acknowledged the need for a cognitive presence while adopting the use of technology. The indicators from

the framework that were applicable in identifying a cognitive presence were: applying new ideas; exchanging information; and connecting ideas. These were the three factors that influenced the use of technology by the lecturers. Having a sense of puzzlement did not factor as an indicator within this study. Contributing factors were the structure of the modules and the depth of online engagement of the participants with their students which limited this indicator. Lim, Lee and Hung (2008) found this to be linked to the extent of adoption of a learner-centred pedagogy.

James felt that technology enhanced his learning because he found new interesting applications that were beneficial and made his life easier. Likewise, Lindi and Joan corroborated that finding new information and applications excited them, and it could benefit their students by **applying new ideas**. This was in keeping with findings by Keamy (2017) and Hutchison (2012). Similarly, Dale was motivated to learn by the interest lecturers showed in applying new ideas using technology. Providing students with information on a platform that they could all access was considered another positive motivator in learning to use technology. This went hand in hand with seeing the students' willingness to contribute online.

On the other hand, applying new ideas came with its challenges. The participants expressed their frustration with technology when it did not function easily. James commented on software that was not user friendly and thus difficult to apply. Harrison was hindered in his own learning when trying to apply new ideas without adequate instructions. Dale was hindered by the volume of new ideas to choose from and Lindi felt disempowered by not being able to apply the technology available. Vanassche and Kelchtermans (2016) also identified these challenges in their research.

Within the cognitive presence element **exchanging information** enhanced learning for two of the participants. However, there were more challenges in exchanging information, and this hindered the participants willingness to engage technology. Lindi found the different levels of technological knowledge amongst her students challenging as she had to spend time training them before she could begin the process of exchanging information. This concurred with Harrison, Dale and Joan's observations that the challenges presented by the students' knowledge impacted their own learning to use technology. They had to make different choices about which tools to use in consideration of the abilities of the students. Owen and Allardice (2008) drew similar conclusions in their research. This was corroborated by Bharutham and Kies (2013).

Still within the cognitive element, Harrison was motivated by the nature of his students who “**constructed their knowledge**” much better on the online platform and enabled “**the connecting of ideas.**” Tucker (2019) and Blewitt (2019) both consider these motivating factors for promoting a blended approach in learning. There were no hinderances expressed by the participants to categorize in this indicator.

The **social presence**, identified as a second element necessary by Garrison and Vaughan (2008), focuses on the community aspect of the online collaboration. The students must be able to express themselves freely and collaboratively in a safe environment. Within this element the following indicators were identified: risk-free expression; collaboration; expressing emotions and camaraderie. Three of the lecturers were on online collaborative spaces. Lindi was motivated to enhance her learning by noticing how Google Classroom encouraged the students when they were able to view the work. Harrison also found that collaboration was easier as the students were interested. This led to **encouraging collaboration** which motivated the lecturers to use this tool. Dale found technology enhancing collaboration in the face-to-face space, which motivated her to find more tools to use in lecturing.

However, encouraging collaboration brought out an aspect that many authors (Eady et al., 2017; Bharutham & Kies, 2013; Hutchison, 2012 etc.) have highlighted, and it may be one of the main factors that causes the reluctance of lecturers to adopt a blended approach. Joan and James noted that the students were often reluctant to collaborate. They preferred to contact the lecturer privately or not at all.

A further factor that enhanced learning for the participants was the **expressing of emotions and camaraderie**. Joan used Edmo in her modules and found that: “*the students were having so much fun. It was very social. They used to tease each other.*” Harrison noted that: “*support is a factor that enhances my learning.*” It is interesting to note that enabling risk-free expression was not identified as an indicator in this research. This can be attributed to the vulnerability factor identified by Vanassche and Kelchtermans (2016) since students and lecturers are newly negotiating the online space.

The third element in the community of inquiry framework is the **teaching presence**. This element’s indicators consist of setting curriculum and methods; sharing personal meaning; and focusing discussion. Harrison identified further training as a factor that enhances his own learning. This training may not link directly to the online collaboration or blended approach, but it does relate to **the methods** by which he assimilated technological tools or learning. The

teaching presence for these participants is still face-to-face and thus, they may not have considered it as enhancing their learning. They also do not have much control over the curriculum as it is set nationally to meet degree compliance. Sharing personal meaning and focusing discussion were not identified as motivators for enhancing learning. Once again this can be linked to the course work and the extent to which online collaboration is taking place. Longhurst, Jones and Campbell (2017) refer to the deep relational aspect of blended learning, which was not an identifying factor in this study.

The methods were also noted as a factor hindering learning to use technology. The learning platform and the tools on it did not always meet the objectives set by the lecturers. The participants identified the learning platform as not always user-friendly or functional, containing a large volume of information to assimilate, needing deciphering and sometimes accompanied by vague instructions. The challenges of adopting **an institutional learning management system** was impacted by the methodology by which the participants learn to use technology in their modules. The collaborative aspect of blended learning did not enhance the individualized experimentation and assimilation styles of lecturers. Scheffield, Blackley and Moro (2018) address these challenges in their professional learning model for teacher support.

Other factors outside of the community of inquiry framework were also inductively discovered through the instruments used in this study. Garrison and Vaughan (2008) refer to **time** very briefly in describing the necessity of it for building online relationships of trust, and it was noted as a factor hindering learning to adopt a blended approach. Four of the participants discussed it as a factor that influences their learning. They are less inclined to learn how to use a tool if it is time-consuming to install, understand or explain. Hutchison (2012) identified this as an important consideration of educators in using technology.

A further challenge to learning to adopt a blended approach was identified as the **technical issues** that engaging with technology requires. The participants mentioned the connectivity, the WiFi availability, compatible software, updating devices, and troubleshooting when the tool does not work as there are very real challenges to learning to use a tool. The same challenges were present in the students' lives which prevents them from benefitting from technology in the way that the blended approach intends. This concurs with findings by Bharuthram and Kies (2013) and Isiyaku, Ayub and Abdulkadir (2015) in researching the use of technology in other African countries.

Linked to the technical issues are the **costs** of engaging online. The participants identified the cost of data and upgrading software as very real challenges in selecting tools for their modules. All the participants identified this, in their opinion, as the main challenge facing the students at the institution and the reason for their perceived reluctance to engage online, and this corroborates Isiyaku et al.'s (2015) findings.

A final challenge that was induced was the **expectations of self** as expressed by Dale. This indicates a vulnerability and what Hutchison (2012) identified as a need to feel empowered by adopting technology. This adds a further dimension to learning to adopt a blended approach.

## **4.7 CONCLUSION**

This chapter analysed the data produced from critical incident cards, concept maps and interviews. Narratives were constructed and the responses of the participants were tabulated from the transcripts to align with indicators produced in Opfer and Pedder's (2011) complexity theory and Garrison and Vaughan's (2008) community of inquiry framework. The information gathered was categorized to show where the results from the study coincided with, contrasted to and added to the conceptual frameworks. It became evident that learning is both a personalized and a private experience for the lecturers in this context.

The complexity theory conceptualized the nested and integrated aspects of the individual teacher, the learning activity and the institution. Within the narratives it became evident that dissonance was the motivation for learning to adopt a blended approach, but this depended on the individual's beliefs, experiences and knowledge. The institution and the learning activity added dimensions to the learning, but an added element of consideration in the personal learning of lecturers was found to pertain to the student. The students' knowledge, experiences and beliefs impacted the participants' choice of tools and level of engagement on the online platform of the institution.

The community of inquiry was the framework for the factors enhancing or hindering learning. Not all the indicators from the framework were identified from the methodology instruments, however it was noted that there were indicators that could point to both enhancements and hinderances to learning. These indicators were applying new ideas, exchanging information, encouraging collaboration, and curriculum and methods. Environmental factors outside of the framework and within the context of this institution were also identified as impacting and

challenging learning, e.g. time, costs, technical issues and expectations of self. A discussion of the findings in relation to other research, recommendations for further research and a summary of the findings are presented in Chapter 5 which follows.

## CHAPTER 5: DISCUSSION AND CONCLUSION

### 5.1 INTRODUCTION

The purpose of this discussion chapter is to discuss the data in order to answer the two research questions. The narratives have provided insights into how teachers learn to adopt a blended approach and the factors affecting their learning. The participants in this study were five lecturers from a private tertiary institution. They were all assigned pseudonyms and participated in critical incidents, concept maps and interviews to generate the narratives that informed the study. The study aimed to answer the following two research questions:

1. How do teachers learn to adopt a blended approach at a tertiary institution?
2. What are the factors that enhance or hinder teacher learning in adopting a blended approach?

The research employed Opfer and Pedder's (2011) complexity theory framework of teacher learning to answer Question 1, and Garrison and Vaughan's (2008) community of inquiry framework to inform Question 2. Following the discussion and recommendations, the limitations of the study are discussed, and the chapter is then concluded.

### 5.2 DISCUSSION AND RECOMMENDATIONS

#### 5.2.1. How teachers learn to adopt a blended approach at a tertiary institution

Opfer and Pedder's (2011) complexity theory framework was instrumental in classifying how teachers learn to adopt a blended approach. It became necessary to emphasise what adopting a blended approach meant. It was apparent from the narratives that lecturers had a broad understanding that a blended approach included the use of technology in their modules. Garrison and Vaughan (2008) emphasize the necessity of using technology to bring about constructivist learning which will be relevant and meaningful for students. The readings for this research study clearly advocate that blended learning is about a change in pedagogy that involve students in their own learning.

The participants' learning was **individualized and module specific**. The learning came about because of a **dissonance** between personal expectations and efficacy with technology. This was

a motivation for all five of the lecturers who saw the importance of using technology in their teaching. This also emphasized the nested complexity of learning as **knowledge, experience and beliefs** impacted each individual and their dissonance. Their own experiences with technology motivated them to accept it as necessary in their teaching. They all firmly believe that technology has the potential to improve teaching and learning. The interconnection between experiences, beliefs, knowledge and dissonance created the right conditions for learning to take place and all five participants have actively incorporated technology into their teaching as the change in practice demands. An analysis of the knowledge needed for a blended approach identified a new knowledge that could impact learning to adopt a blended approach. Since a blended approach focused on a change in pedagogy to learner-centredness, it would require new knowledge linked specifically to the use of technology. Blewett (2019) identifies the pedagogy of teaching effectively with technology as opposed to teaching with the use of technology. Many authors identified the use of technology as an added tool in the classroom (Picciano, 2009; Holmes & Gardner, 2006), however, this is not in line with the definition of blended learning. Luaran, Alias and Jain (2014) explored the knowledge needed for the blended approach and identified Technological Pedagogical Content Knowledge (TPACK) from Koehler and Mishra's model as an essential component in learning to adopt a blended approach. This idea concurs with Blewett (2019) in identifying the pedagogy necessary for teaching effectively with technology and is an area that can be explored further in future studies as it would inform the teaching practice at tertiary institutions.

Learning to adopt a blended approach emphasized **the learning activity** and its role in learning to change teaching practice. This was inter-connected with the individual, and the participants also identified conditions under which learning to use technology could take place. These conditions were explored by Eady, Woodcock and Sisco (2017) and emphasized the ease of use of technology, a psychologically safe environment, e-learning self-efficacy, computer competence, and effective instructor support. These conditions were met at the institution and thus learning to use technology could occur for these five participants. However, once these conditions have been met there are further indicators of the way in which the new practice will be assimilated. Opfer and Pedder (2011) found a link between new teaching practice and collaboration as the method by which the activity is learnt. This was not the finding in this research. The learning activity in each participant's view is better learnt through personal experimentation or one on one tutoring. This is impacted by the diversity of the modules on offer at the institution and the perception that the teaching and learning process should be



individualized for each module. A blended approach is understood to imply more connectedness between the lecturer and the student (Garrison & Vaughan, 2008), and this influences the learning activities that the lecturers choose as their tools of engagement in the classroom and online. It may also be explained by the pedagogical mismatch in adopting a blended approach while still using an expert-focused pedagogy. This phenomenon is described as a possible reason why technology is not successfully adopted in classrooms (Blewett, 2019). The knowledge, beliefs and experiences required to adopt a blended approach then impacts the learning activity and the cyclical nature of learning and changing practices emphasized by Clarke and Hollingsworth (cited in Opfer & Pedder, 2011), becomes evident. This once again reiterates the complexity and nested syndrome of learning, especially in adopting a blended approach at a tertiary institution.

Although this study did not interrogate the institution, its policy initiated the learning process and a brief exploration of this aspect of the complexity theory brought several factors to light. The beliefs and practice of the institution impacts the beliefs and practice of the lecturers (Opfer & Pedder, 2011). The institution has implemented a policy of 80:20 face-to-face to online teaching. This is a way of initializing the blended approach demanded within higher education in preparing students for occupations. It also contributes to the dissonance experienced by the lecturers as they attempt to meet the requirements of the policy. This was then a motivating factor to learn to adopt a blended approach. It became evident through the research that the policy is a way to start the process of moving towards a blended approach.

An aspect of the complexity model not identified by Opfer and Pedder, but mentioned by Boyle, Coldwel, Maxwell and Jordan (2018) was the relationship between teacher learning and student learning outcomes. The lecturers in their narratives were motivated to learn new technology by the responses of their students. The cause and effect of this relationship illustrated the nested complexity of teacher learning. The lecturers chose tools they felt would appeal to their students. The responses of the students motivated them to choose different tools. This essentially is the discussion on blended learning. Technology can be incorporated to give students a constructivist learning experience (Garrison & Vaughan, 2008). However, the participants also factored in the challenges that students experienced in applying technology to their modules, and this impacted the choice of tools and thus, teacher learning.

Once again, it compounds the individuality of learning and how there is not one precise activity or methodology that can bring it about. Essentially, learning to adopt a blended approach is a “multicausal, multidimensional, and multi-correlational” (Opfer & Pedder, 2011, p.394) process in a dynamic model, subject to change. Understanding this complexity and the fact that it would be difficult to pinpoint a recipe for how teachers learn to adopt a blended approach in a tertiary institution, allows the very **individualized learning experiences** described by the participants to answer the question. This then opens the way for research of a pedagogy that includes knowledge on how to teach with technology so that it is ‘fit for purpose’. It would require more research to identify this pedagogy and the impact it would make on teaching and learning. Blewitt (2019) proposes five approaches to bring about a change in pedagogy and ultimately to use technology purposefully in education. His activated classroom teaching (ACT) approach could be applicable in the next step of learning to adopt a blended approach as the ratio of face-to-face to online dimensions change.

### 5.2.2. Factors that enhance or hinder learning to adopt a blended approach

Garrison and Vaughan (2008) identified the need for a **cognitive presence** in the online space when using a blended approach in a tertiary institution. The responses of the participants in this study confirmed three of the indicators as defined by the community of inquiry framework. These factors enhanced learning to use technology. It has already been discussed that the blended approach is in its initial stages at this institution and thus the online collaboration identified by Garrison and Vaughan (2008) is not at the participation level that they required in their own blended approach. However, all the participants in this study were affected by the cognitive presence indicators when learning to use technology. They were eager to **apply new ideas, exchange information** with their students and for Harrison, seeing the students construct their knowledge by **connecting ideas** was very motivating. These motivating factors concur with findings made by Eady et al. (2017); Adelekan, (2013) and Holmes & Gardner, (2006) who found that there could be deeper and meaningful engagement bringing about personal learning.

However, the cognitive presence also elicited hinderances to learning to adopt technology. This was because applying new ideas is not always possible with the technology available. Some of the software is not user-friendly and the volume of tools to choose from can be daunting. **Exchanging information** creates its own challenges as the students are not all technologically

adept at implementing the tools to use for this purpose. These hinderances concur with the factors that Hutchison (2012) identified as influencing the integration of technology by the lecturer. Similarly, Isiyaku, Ayub and Abdulkadir (2015) identified these challenges in Nigeria when researching the implementation of technology at tertiary institutions. They further identified the important role technological support plays in influencing the adoption of technology tools, as well as maintaining student support.

As learning moves more into a technological space, the cognitive presence will be an aspect that will require more focus. Using inquiry to motivate students to process information and construct their own meaning will require more investigation and strategies for training teachers at tertiary institutions. According to Garrison and Vaughan (2008, p.23) “Establishing and maintaining cognitive presence in blended communities is the area that is in greatest need of research”.

**The social presence** within a blended approach refers to the community aspect of collaborating online. This research study did not specifically look at online collaboration and was broad in its definition of a blended approach because the policy behind the questions indicated an 80:20 face-to-face to online directive. Three of the lecturers indicated that they were active online in collaborative spaces with their students. However, the social element of using technology was a motivating factor in learning to use it. Dale enjoyed the results of Kahoots in her face-to-face sessions, and Joan found Edmo to be a successful tool in the online space. It was the indicators of **encouraging collaboration and expressing emotion and camaraderie** that enhanced learning to adopt a blended approach for most of the participants (Garrison & Vaughan, 2008).

Mirroring the findings of other researchers, the factors that enhance learning can also hinder learning. The reluctance of the students to engage in **collaboration** online was identified as a factor that would hinder lecturer’s implementation of a tool that promotes this. Burge and Haughey, 2001; Garrison and Vaughan, 2008; Eady et al., 2017; and Rossouw, 2018 all concur that students still see a need for face-to-face sessions to enhance their learning.

It was notable that ‘**enabling risk-free expression**’ was not represented in the data collection instruments. This would be interesting to research as it may link to the pedagogy still presented by a policy of 80% face-to-face lecturing.

**The teaching presence** identified as a necessary component for the blended approach was not strongly represented as a factor enhancing teacher learning. The only reference to one of its indicators was by Harrison who felt that training enhances his learning.

On the other hand, **the learning management system** was identified as challenging in that it is not always user-friendly. One participant struggled with its functionality. Another participant found the volume of information to assimilate on this platform daunting. Vague instructions about implementing the tools is another factor hindering learning. The platform was designed to implement a blended approach which focuses on collaborative learning.

In view of the findings of this study on how lecturers learn to use technology, it may be a consideration that collaboration presently clashes with the lecturers' assimilation of technology tools. This could be linked to the methods incurred in the teaching presence to learn to adopt a blended approach. According to Garrison and Vaughan (2008, p.24) the teaching presence "provides the design, facilitation and direction for a worthwhile educational experience." It is also possible that this element has challenges because the teaching presence in the online space is still being defined and is influenced by policy directives. New areas of teaching are complex and creating a teaching presence may be more daunting than motivational at present for the participants.

Further challenges were identified as **time, technical issues and costs**. These hinderances were identified by authors in other African countries (Isiyaku, Ayub & Abdulkadir, 2015). Likewise, Hutchison (2012) found these factors to limit the use of technology by educators. These were further identified as challenges for students in attempting to assimilate technology. They are very real considerations and have more of an impact on the adoption of a blended approach than may be evident on the surface.

One of the participants briefly referred to **expectations** she places on herself to become an expert in the technological field. This area is often neglected in discussions of technology however, Vanassche and Kelchtermans (2016) and Keamy (2017) explore this aspect of learning to adopt a new tool. It has relevance to adopting a blended approach, especially as the need for a new pedagogy has been determined and this immediately places even the seasoned lecturers in unfamiliar territory. This vulnerability described by Vanassche and Kelchtermans (2016) impacts the presence of a blended approach in lecturing as defined by Garrison and Vaughan (2008).

### **5.3 SUMMARY OF FINDINGS**

A blended approach necessitates a learner-centred pedagogy.

Learning depends on the knowledge, experience and beliefs of the individual lecturer. A sense of dissonance between personal expectations and the need for efficacy motivates individual learning in the use of technology. The dissonance also identified the need for a new knowledge identified as technological pedagogical content knowledge (TPACK) in order to adopt a blended approach.

Learning is affected by the learning activity i.e. the technological tools available.

Learning is also dependent on the institution, its policies and support.

Students and their knowledge, experience and beliefs also impact the choices of technology made by the lecturer when adopting a blended approach.

The factors that enhance learning to adopt a blended approach are applying new ideas; exchanging information; connecting ideas; collaborating; expressing emotion and camaraderie.

The factors that hinder learning to adopt a blended approach are the reluctance of students to collaborate, exchange information and apply new ideas; the complexity of the learning management system; time; technical issues and support; high costs and expectations of self.

### **5.4 LIMITATIONS OF THE STUDY**

This study involved five lecturers at a private tertiary institution and therefore the findings cannot be generalized. I know these lecturers personally and they were chosen because they represent lecturers at various stages of their careers at the institution. This then produced a purposive sample of participants. Learning has been identified as a personal and individual experience which may also impact findings of other research in similar studies. The type of student, the institution's learning management system and the tools the lecturers chose could be areas of research impacting a blended approach in future studies, but the focus for this study was on each individual lecturer's learning.

## 5.5 CONCLUSION

This study's purpose was to explore the ways in which teachers learn to adopt a blended approach, and the factors that enhance or hinder this learning. It is evident that learning is an individual experience and has many elements impacting this process. The complexity theory highlighted these elements and their reciprocal influences. It also became evident that the elements are not only limited to the individual, the activity and the institution identified in the complexity theory. Students themselves are also an important consideration in influencing lecturers' learning. Dissonance between the expectations of self and the efficacy with technology was identified as the motivating factor for learning to use technology. This dissonance also identified the gaps in knowledge that teaching with technology highlights. These gaps are encompassed in the technological pedagogic content knowledge identified by Koehler and Mishra's model (cited in Luaran, Alias and Jain, 2014).

While the community of inquiry framework indicated factors relevant for adopting a blended approach, it also identified the premise that a learner-centred approach underlies this strategy. This is likely to provoke a dispute about what adopting a blended approach is meant to look like since the evidence indicates a current organisational trend to use technology as a tool to enhance lectures and in online platforms. In this study the participants formulated learning individually through experimentation and exploration. Future reflection and research will be needed to explore the efficacy of a learner-centred approach in view of the challenges expressed by lecturers in adopting a blended approach. If the focus is to be on learning, then perhaps the blended approach should be about technology connecting individuals with the experts that can direct their learning and thereby, make learning more personalized and constructive. Learning to adopt a blended approach can be concluded in the succinct statement by participant Joan: *"Its fit for purpose."*

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# Appendices

## Appendix 1: Ethical clearance



24 April 2019

Mrs Evaleen van Blerk (882200428)  
School of Education  
Pietermaritzburg Campus

Dear Mrs Van Blerk,

Protocol reference number: HSS/0082/019M

Project title: Narratives of Teacher Learning in Adopting a blended approach in a tertiary institution

### Approval Notification – Expedited Application

In response to your application received on 29 January 2019, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned 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 1 year 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 Rosemary Sibanda (Chair)

/ms

Cc Supervisor: Dr Jacqui Naidoo  
cc Academic Leader Research: Dr Ansurie Pillay  
cc School Administrator: Ms Sheryl Jeenarain

### Humanities & Social Sciences Research Ethics Committee

Dr Rosemary Sibanda (Chair)

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Website: [www.ukzn.ac.za](http://www.ukzn.ac.za)



Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

## **Appendix 2: Letter of consent**

29 Westview Place  
Hayfields  
Pietermaritzburg  
3201

Date:

### **REQUEST FOR PARTICIPATION IN RESEARCH PROJECT**

My name is Evaleen van Blerk (Student No. 882200428) a Bachelor of Education Masters (BEd Masters) student in the School of Education at the University of KwaZulu-Natal (Pietermaritzburg campus). As part of the requirement for this degree, I am required to conduct a research project and thus I invite you to participate in this research study. The title of my study is **“NARRATIVES OF TEACHER LEARNING IN ADOPTING A BLENDED APPROACH IN A TERTIARY INSTITUTION.”**

The aim and purpose of this research study is to examine teacher learning. This study will involve the following procedures:

As a participant, you will be asked to draw a concept map illustrating your understanding and use of a blended approach. You will also be asked to document the critical incidents that influenced your adoption of technology. Interviews will be conducted to facilitate the narration of your learning to use a blended approach. Follow-up interviews may be conducted if necessary. Each interview will be voice-recorded. The duration of the participation if you choose to participate and remain in the study is expected to be 4-6 weeks.

This study will not involve any risks and/or discomfort. Also, the study will not provide direct benefits for participants. I will be documenting the responses using pseudonyms.

In the event of any problems or concerns/questions you may contact me, my supervisor or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details are below:

#### **My contact number:**

Email: evaleenvb@gmail.com Cell: 082 469 1201

#### **Supervisor**

Dr J. Naidoo  
School of Education, Pietermaritzburg Campus  
University of KwaZulu-Natal  
Telephone 033 260 5867  
Email address: naidooj@ukzn.ac.za



**UKZN Research Office**

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Email: HSSREC@ukzn.ac.za

Participation in this research study is voluntary and participants may withdraw from the study at any point. In the event of refusal to participate or withdrawal from the study, participants will not be penalised. There are no consequences for participants if they withdraw from the study.

No costs will be incurred by participants as a result of participation in the study and there are no incentives or reimbursements for participation in the study.

Pseudonyms will be used to protect the anonymity of the schools and participants. Information provided by participants will remain confidential and will not be shared with anyone else. Data generated through concept maps, and/ or semi-structured interviews will be stored in my supervisor's office, at the School of Education, Pietermaritzburg campus for five years, and thereafter be destroyed.

Thank you for your cooperation.

Yours in Education  
Evaleen van Blerk

## DECLARATION OF CONSENT

I, \_\_\_\_\_ (participant) have been informed about the study entitled “**NARRATIVES OF TEACHER LEARNING IN ADOPTING A BLENDED APPROACH IN A TERTIARY INSTITUTION**” by **Evaleen van Blerk**.

I understand the purpose and procedures of the study.

I have been given an opportunity to ask questions about the study and have had answers to my satisfaction.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time without affecting any of the benefits that I usually am entitled to.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at (provide details).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

### **HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION**

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001 Durban 4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

I hereby provide consent to the data generation activities below: (Please tick) Yes/No

Constructing a concept map

Critical incidents card

Semi-structured interviews

Audio recording of semi-structured interviews

### Appendix 3: Critical incident card

Most experiences with technology are automatic and occur quite incident free. But can you remember any experiences while you were learning to use technology that stand out as a particularly frustrating experience or a particularly satisfying experience? Please list one, two or three such occurrences and give a very brief description of them.

1



A positive experience:

2



A negative experience

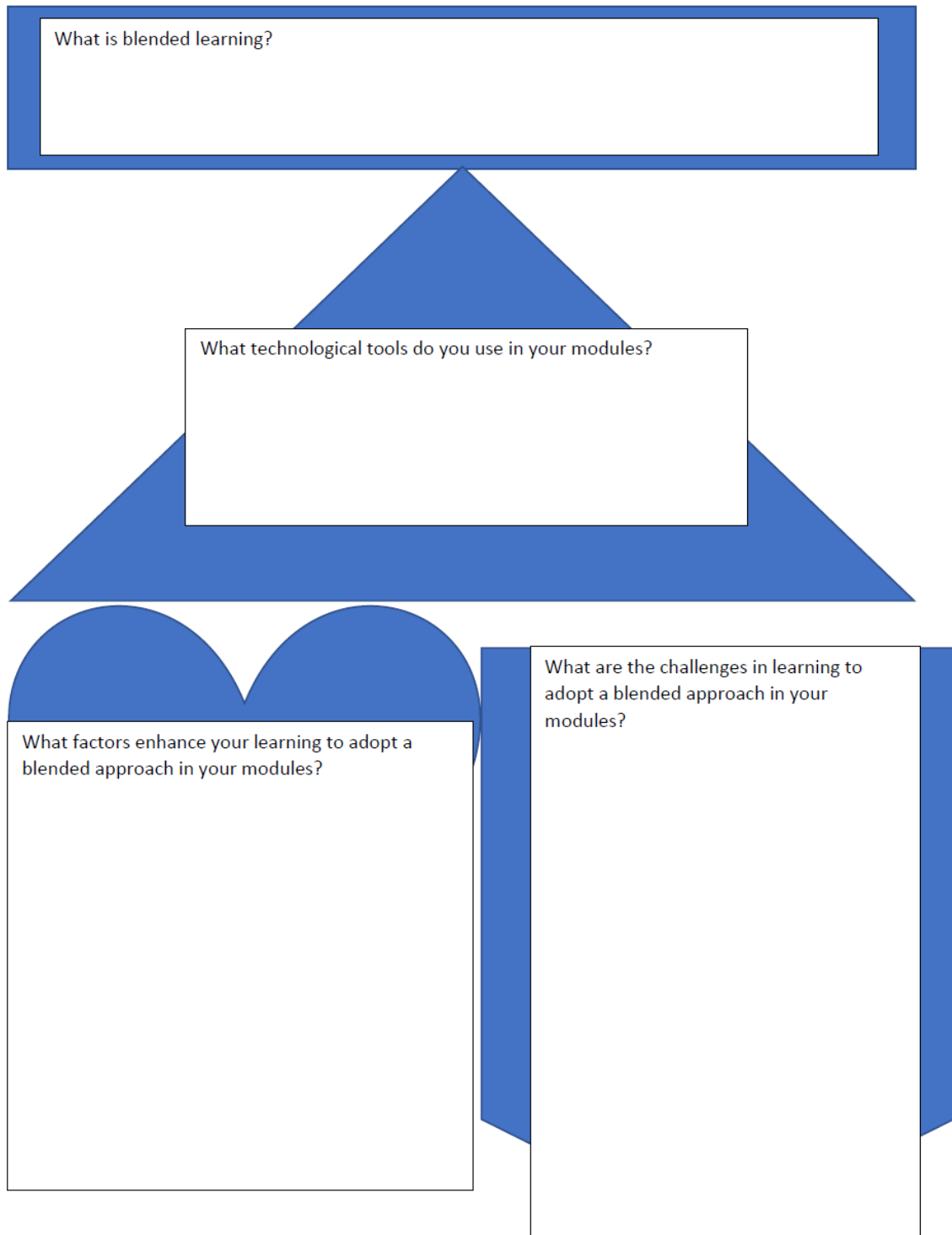
3



Your choice/

## Appendix 4: Concept map

### A CONCEPT MAP



## **Appendix 5: Interview schedule**

1. Why did you choose to become a lecturer?
2. How many years have you been lecturing at a tertiary institution?
3. What postgraduate qualification/s do you have?
4. What modules do you lecture in at your tertiary institution?
5. What technology do you use in your modules? Give examples.
6. How long have you been using technology in your modules?
7. How did you learn to use the technology as tools in your modules?
8. How did you choose these tools?
9. What knowledge and skills did you acquire to use a blended approach?
10. What are the technological tools you avoid using? Elaborate.
11. What do you understand by the concept 'blended approach'? Elaborate.
12. What factors enhance your learning to use a blended approach?
13. What factors inhibit your learning to use a blended approach?
14. What strategies do you adopt to overcome the challenges of using a blended approach?
15. What technological tools do you hope to use in the future?
16. How would you learn to use these technological tools?
17. How do you envisage acquiring the knowledge about these tools?

## Appendix 6: Editing certificate



14<sup>th</sup> of January 2020

To whom it may concern

**EDITING OF DISSERTATION FOR MRS EVALEEN VAN BLERK**

I have a master's degree in Social Science, Research Psychology and TEFL qualification from UKZN. I have 15 years of teaching experience. In addition, I have been editing academic theses for students from UKZN, UNISA, DUT, and Fort Hare University for the past eight years. I have further done editing, transcribing and other research work for private individuals and businesses.

I hereby confirm that I have edited Evaleen van Blerk's dissertation titled "**Narratives of teacher learning in adopting a blended approach in a tertiary institution**". Corrections were made in respect of grammar, tenses, spelling and language usage using track changes in MS Word 2016. Once corrections have been attended to the dissertation should be correct.

Yours sincerely

Terry Shuttleworth (TEFL, UKZN, MSSC, UKZN).

**PLEASE NOTE:**

Should the student not attend to the changes suggested by the editor and make additions to the dissertation after editing has been completed, the editor cannot guarantee the language, grammar and tenses are correct.

## Appendix 7: Turnitin

The screenshot shows a web browser window with the Turnitin interface. The title of the report is 'Evaleen van Blerk Masters Dissertation'. The report is categorized as an 'ORIGINALITY REPORT'. The similarity index is 6%, which is broken down into four components: Internet Sources (3%), Publications (2%), Student Papers (5%), and a final similarity index of 6%.

Below the similarity index, there is a section for 'PRIMARY SOURCES'. It lists four sources with their respective similarity percentages:

Rank	Source	Similarity
1	library.iated.org Internet Source	<1%
2	mafiadoc.com Internet Source	<1%
3	journals.sagepub.com Internet Source	<1%
4	Submitted to Massey University Student Paper	<1%

The browser window shows the file path: C:/Users/evaleen/Desktop/Evaleen%20van%20Blerk%20Masters%20Dissertation.pdf. The Windows taskbar at the bottom shows the search bar and various application icons.