

**ENHANCING STUDENT ENGAGEMENT OF A FIRST-YEAR CLASS THROUGH  
THE FLIPPED CLASSROOM APPROACH**

by

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**JUNE 2020**

## DECLARATION

I, **Hadio Rose Motaung**, declare that this study, titled ***Enhancing student engagement of a first-year class through the flipped classroom approach***, is my own work. It has not been submitted anywhere else, either for an academic degree or for examination. References used in the study have been acknowledged by means of a comprehensive reference guide. Furthermore, I am aware of the plagiarism policy of the University and have undertaken to paraphrase statements retrieved from utilised sources, to ensure that I do not contravene copyright law. I have made attempts to pinpoint possible harm that may arise in conducting this research, the relevant ethics clearance was applied for in the Faculty of Education and approval was granted; obligations and the rights of participants were also acknowledged.

Signed:



..... Date: 09/07/2020.....

## **ACKNOWLEDGEMENTS**

The journey to completion of this dissertation was not easy, partly because I had to change supervisors a few times, and work was delayed due to circumstances beyond anyone's control. At times, I felt that research was not for me and I wanted to give up, but God had already laid down His plans for me (Jeremiah 29:11) in the spiritual realm, and my success in obtaining this qualification was destined to be.

My sincere gratitude goes to my supervisor, Dr S.D. Makhasane, who came to my rescue when I experienced a supervision dilemma. I also acknowledge the support that my co-supervisor, Mr V.F.S. Mudavanhu, gave Dr Makhasane in the initial stages of my study; they worked hand in glove to get my study running. Dr B.I. Omodan, thank you so much for always lending me an ear whenever I had research woes, your advice and assistance was valuable. How can I forget our dean, Prof. L. Jita, who pushed my boundaries to the ultimate by always reminding me that I needed to finish my study so that I can progress to a PhD. Much appreciated Prof! A special thanks to Hettie Human for professionally editing my dissertation.

I would like to recognise the steadfast support I received from my mother. She knows nothing about research, but she always assured me that I would finish. My brother, in his silence, has always looked up to me. I know he is inspired by my achievements and knowing that pushed me to obtain something that is not easily attainable. My husband has always been behind every stride I took, supporting me in every way that he could, even staying up with me when I had to sit and work for long, late hours.

To my cousin, Ms S. Mokuoane, my friends, Mr T. Motsoeneng and Mr J. Moloi, for always encouraging me to push and for believing that I am a Master's candidate destined to complete: Your support did not go unnoticed, though we always laughed about this, I really thank you.

## **DEDICATION**

To my mother,

**NTEBALENG GLADYS MOSIA**

My brother,

**MOHLALEFI INTELLIGENCE MOSIA**

My beautiful, caring and loving husband,

**HLALELE JOSEPH MOTAUNG**

Your unconditional support came through for me so many times and  
in a massive way. You reminded me that it was possible,  
every time, when I felt it was impossible.  
I pray that God grants you all that your heart desires and more.

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## **ABBREVIATIONS**

|     |                                          |
|-----|------------------------------------------|
| ICT | Information and communication technology |
|-----|------------------------------------------|

## **ABSTRACT**

As the use of technology evolves, and we progress towards the 4<sup>th</sup> industrial revolution, tertiary institutions find themselves under pressure to meet global standards in the provision of education using innovative teaching and learning methods. The flipped classroom is a teaching and learning approach that uses technology to deliver academic content outside the classroom, and reserves in-class interaction for in-depth discussion of the course content. Teaching at a rural university has its challenges, and the need to be innovative and make use of technology threaten the level at which lecturers can apply creativity in their approaches to teaching. The purpose of this study was to explore lecturers' perspectives of enhancing student engagement of a first-year class through the flipped classroom approach. The study adopted activity theory as a theoretical framework to understand the perspectives of participants regarding the phenomenon under investigation. Data was collected using semi-structured interviews with three lecturers, who were purposively selected because they would provide rich data since they actually make use of the flipped classroom in their classes. Data collected from this research was analysed by using thematic analysis, during which data was interpreted and organised into themes. The findings indicate that the reasons for using the flipped classroom are to enhance the level at which students engage with the content of the module, and to use the given lecture time efficiently. Resources were found to play an important role in the flipped classroom, and usage varied according to lecturer preference. The nature of a learning environment that is conducive to a flipped classroom also played a key role in the effective delivery and facilitation of the flipped classroom. Indeed, a correlation was found between the flipped classroom and student engagement. Therefore, this study recommends that universities make it compulsory for lecturers to use various methods of teaching and learning, especially methods that use technology. Staff development programmes can assist lecturers to use various methods. Policies on teaching and learning methods should be reviewed, to accommodate compulsory use of innovative teaching methods. Students need to be trained well in advance before a new teaching and learning method is implemented, to avoid some of them falling behind with the work.

**Keywords:** Activity theory, flipped classroom, rurality

## **CHAPTER 1: OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION AND BACKGROUND OF THE STUDY**

The purpose of this study was to explore lecturers' perspectives on enhancing student engagement using the flipped classroom model in a first-year education class. According to Kuh, Shuh, Kinzie and Whitt (2005), two key concepts define student engagement. Firstly, it is the amount of time and effort students spend on academic and other activities, that lead to the experiences and outcomes that constitute student success. The second concept is the ways in which institutions allocate resources and organise learning opportunities and services to induce students to participate in and benefit from such activities.

In traditional classrooms, students are passive learners. This renders them ineffective during the learning process. For students to learn more actively, effective education approaches to teaching and learning need to be applied (Ayçiçek & Yanpar Yelken, 2018:385). From the definition of student engagement, we can deduce that, for students to be engaged, time and effort need to be invested in academic activities, and institutions need to come up with techniques that will encourage students to participate in their academic work. According to Aycicek and Yanpar Yelken (2018:388), the traditional classroom is not ideal for creating such conditions. The need then arises for innovative ways of teaching and learning that will interest students and compel them to take part in the learning process. In the 21<sup>st</sup> century, technology plays a crucial role in the lives of students, and its use in the classroom could prove beneficial for teaching and learning. In this study, I will explore one of the innovative teaching and learning strategies that could contribute to the quest to get students involved in their academic activities.

Carr (2014:80) explains that the evolution of technology and increased intake by some higher education institutions have encouraged many institutions to come up with new means of effective instructional delivery. It is possible to complement the delivery of content by means of traditional face-to-face lectures in a classroom with internet-based or online instruction. Online learning is the type of learning that depends on using information and communication technologies (ICT) for delivery of teaching and

learning content. Learning platforms can involve synchronous or asynchronous techniques (e.g., online chats, blogs) (Park, 2015:390).

In addition, there is an emerging practice of teaching and learning that is characterised as blended. Horn and Staker (2015) define blended learning as a formal education programme in which students have an integrated learning experience that takes place partly online, where students have control over their learning. The time, place and pace of one part of the learning is decided by the student, and then the other part of learning takes place in a classroom. Aurangzeb (2018:97) reports that blended learning is deemed to be a successful mode of teaching and learning, because it integrates information communication into a normal classroom environment, with 60–70% of time allocated to face-to-face interaction, and 30–40% reserved for online activities. Students are offered a more personalised and student-centred mode of learning, which, at the same time, gives them access to the lecturer when they need it. Oakley (2016:67) reports that blended learning assists lecturers to engage students in active learning processes, and promotes communication, information literacy, collaboration and creativity, which, in turn, transforms their competence to use digital technologies for various reasons. Effective teaching has not yet been characterised, but research has seen various practices and educational tools emerge and make a meaningful impact on teacher practices (Anthony, 2019:27).

The flipped classroom is the approach that will be explored in this study. It is an approach that makes use of technology for content delivery outside the classroom. This approach ensures that students come to class well prepared for classroom activities. It is an efficient way to increase class time for student-centred, active learning (Nanclares & Rodriguez, 2016:2). The student participates actively in the knowledge acquisition process through “homework” that is done prior to the class, and through classroom activities during class contact. Traditionally, class time is preserved for delivery of content, with the application of learned content reserved for outside the classroom, usually termed homework (Little, 2015:265). In traditional classes, students usually sit and listen to the lecturer presenting the lesson. When they leave the classroom, they expect the lecturer to provide them with slides of the lecture, and that is the extent of their learning. Usually, students are expected to sit and absorb as much as they can from traditional lessons, and then they go through the work

independently after class or at home. Green (2015:182) explains that this practice of doing work independently after class or at home is commonly known as homework. The flipped classroom comes across as a type of independent learning, because students are required to engage with most of the course content by themselves. Doing so ensures that they actually do the required reading, and comprehend the course content. According to Unruh, Peters and Willis (2016:40), the flipped classroom reverses this traditional teaching and learning strategy, and makes use of recorded videos to deliver course content outside the classroom, while what is termed homework is done during class time. According to Green, the flipped classroom makes provision for extending learning beyond the classroom by interchanging the homework and class (face-to-face) time. Face-to-face instruction remains significant, because it is used to reflect on the work done and/or knowledge acquired by the students during their learning engagement with the content outside the classroom; class time is used for question-and-answer sessions and assessment.

The flipped classroom gives students time to familiarise themselves with new class content in their own time and at a pace that their intellect allows. Students work through the content thoroughly and try to understand as much of it as possible. Class time is, then, used for a hands-on task, involving activities done collaboratively with the lecturer/facilitator and student peers (Crews & Butterfield, 2014:44).

Research has been done in South Africa on the flipped classroom, but its application is still quite limited. Czerniewicz and Brown (2014:3) indicate that not enough research has been conducted on technological literacies. In addition, students from rural backgrounds are more prone to experiencing issues related to technological illiteracy when they enter university.

Le Roux (2016:54) undertook research into the impact that a partially flipped classroom might have at a rural South African university. In her study, she found that, with a partial flip, small changes were evident, which had a positive influence on how students engaged with content, particularly complex content, which requires cognitive ability. Tanner and Scott (2015:220) did research on the flipped classroom at the University of Cape Town. They ascertained that the approach yielded positive results

on the attitudes of students towards their learning, and students liked the interactive nature of the approach.

However, like any other new approach that has been tested through trial and error, certain challenges are encountered in implementing the flipped classroom. The flipped classroom also faces criticism. For instance, lecturers are hesitant to change their existing teaching and learning practices. They also fear that course content may not be covered if students are not monitored, because student participation in a flipped classroom is hard to track.

The use of technology is increasingly becoming the norm in higher education institutions; therefore, institutions should familiarise themselves with innovative tools that can support teaching and learning through various technology-assisted teaching and learning strategies. The flipped classroom is one of the approaches that can be used to support and/or enhance teaching and learning.

## **1.2 STATEMENT OF THE PROBLEM**

The problem faced by this study was the lack of comprehension and student engagement in an undergraduate education class. Young, Robinson and Alberts (2009) report that teaching at universities, in a variety of cultures, has been executed in a similar way for hundreds of years, hence the standardised traditional way of teaching. At the core of traditional teaching is the professor/lecturer/facilitator, who imparts knowledge to receiving students. According to Nouri (2016), the main concern with traditional teaching methods is that students are passive recipients of knowledge, due to the absence of strategies to ensure that students engage with the course material. Students' attention span declines quickly when they are inactive in the teaching and learning process. Furthermore Nouri (2016) informs that the pace at which a lecturer delivers a lecture does not suit all the students, and traditional lectures do not always cater for imparting higher-order skills, such as analysis and application.

The face-to-face or traditional mode of teaching has been the norm in higher education for the delivery of course content. Today, lecturers are making a shift towards more innovative teaching and learning styles, to achieve active learning. Such active learning includes problem-based learning and collaborative learning, which promote

student-centred learning. New technologies are being explored, because lecturers are expected to encourage students to be part of their own learning, and to engage with the content as thoroughly as possible (McCarthy, 2016:333). However, more research is required about how student engagement can be enhanced through the use of a flipped classroom. Against this background, the aim of the study was to establish how the flipped classroom can be used to enhance student engagement in a first-year class.

### **1.3 THEORETICAL FRAMEWORK FOR THE STUDY**

The theoretical framework used to drive the study is activity theory. In simple terms, Hasan and Kazlauskas (2014:9) explain that activity theory is concerned with “who is doing what, why and how”; it gives focus and understanding of human activity. Additionally, they explain, “in Activity Theory, the relationship between subject (human doer) and object (the thing being done) forms the core of an activity”.

Amry (2018:145) points out that learning is fundamentally a social phenomenon, as it happens in environments that are regulated by culture. The way in which people learn has an impact on different human groups according to how they behave on a daily basis. Human beings can, therefore, not be considered as isolated individuals. Furthermore, relations are established between these diverse human groups and become constant by means of the tools that the particular groups use to learn. Katsuhiro (2006:80) explains, human intellect and awareness are situated, dispersed and shared in an activity system. Therefore, human learning is facilitated in a collective activity; learning is not only based on what exists in the system, but on knowledge of the system in which the activity functions.

Hardman (2005a:381) gives an overall picture of activity theory by explaining the notion that the activity framework is the primary tool of analysis in activity theory. The framework refers to a group of individuals who interact within a common space (object) by using devices to change this common space (object). Connections in the framework are guided by rules that ensure that all the individuals are aware of their roles and responsibilities within the activity framework. Division of labour within the framework

means that each of the individuals involved in the framework has a certain role to play in order to make the activity system complete.

I found this theory fitting for the study, because the objectives of the study fundamentally, aim to establish how the flipped classroom can be used to enhance student engagement in a first-year class. Within the operation of the flipped classroom, connections and alterations were analysed to determine how student engagement can be enhanced.

## **1.4 RESEARCH QUESTIONS AND OBJECTIVES**

### **1.4.1 Primary question**

The aim of the study was to establish how the flipped classroom can be used to enhance student engagement in a first-year class.

Consequently, the primary question was the following:

How can the flipped classroom be used to enhance student engagement in a first year class?

### **1.4.2 Secondary questions**

- What is the rationale for using the flipped classroom?
- What constitutes a conducive learning environment for a flipped classroom?
- What are the benefits and challenges associated with the flipped classroom?
- Which resources are suitable for effective delivery of a flipped classroom?

### **1.4.3 Research objectives**

- To describe the rationale for using the flipped classroom;
- To review the nature of a learning environment that is conducive to a flipped classroom;
- To explore the benefits and challenges associated with the flipped classroom; and

- To identify the most suitable resources for effective delivery of a flipped classroom.

## **1.5 RESEARCH DESIGN AND METHODOLOGY**

### **1.5.1 Research paradigm**

The interpretive paradigm was adopted to understand the phenomenon under study. A paradigm is described by Hughes (2010:35) as “a way of seeing the world that frames a research topic”; a paradigm influences the way the researcher approaches the topic under study. Kivunja and Kuyini (2017:33) explain that the interpretive paradigm strives to understand a certain world view of human experience.

The study was undertaken to understand the operations of the flipped classroom and to establish how the flipped classroom can be used to enhance student engagement in a first-year class. The views of the participants provided perspectives on the characteristics of this teaching and learning method, its operation, and the role its implementation can play in facilitating student engagement.

### **1.5.2 Research approach**

A qualitative research approach was utilised to achieve the research objectives. According to Hancock, Ockleford and Windridge (2007:7), qualitative research aims to develop explanations of social phenomena. It is concerned with helping researchers understand the social world and, in particular, understand why things are done the way they are. It strives to answer questions such as the following: Why do people behave the way they do? How are opinions and attitudes formed? How are people affected by the events that go on around them? How and why have cultures and practices developed in the way they have? This study sought to understand the flipped classroom, its implementation and tenets, in order to make meaningful inputs on how it can be used to enhance student engagement effectively.

Through qualitative research, I was able to understand this model of teaching and learning, its implementation and its benefits for enhancing student engagement.

### **1.5.3 Research design**

Case study was used as a research design in this study. Case study has developed and gained status as a method that can be used effectively for investigating complicated issues in real-world environments. It has been used in various disciplines, especially education, social sciences, law, business and health sciences, in order to answer research questions of research studies (Baxter & Jack, 2008:545).

Case study design was utilised in this study because of its significant benefit of being able to promote a holistic understanding of the phenomenon under study. How the flipped classroom operates, when it is used, who the role players in its implementation are and what resources are used became an interesting narrative to understand.

## **1.6 DATA COLLECTION**

I used semi-structured interviews to collect data for this study. Bartholomew, Henderson and Marcia (2000:288) explain that the focus of questions is on the responses that the participants give, and the questions provide structure for a semi-structured interview. Participants have the freedom to respond to the questions in any way they wish, which enables the researcher to probe further into their responses. This is a unique interview method in that it keeps the topic relevant, while remaining responsive to the participant.

McIntosh and Morse (2015:2) explain that semi-structured interviews are characterised by a comparison of responses received from participants in response to particular items. All participants are asked the same questions, in the same order, thus, making the collected data comparable, which means it can be transformed numerically and, thus, quantified. This type of interview allowed me to deduce information pertaining to the flipped classroom according to the different perspectives given by the participants, and I probed deeper into some of the responses they gave – I had to consider that each experience is unique to each lecturer.

### **1.6.1 Selection of research participants**

Participants were selected using purposive sampling. With purposive sampling, participants are selected in the likelihood that useful data will be generated for the project (Patton & Cocharn, 2002:11). Benoot, Hannes and Bilsen (2016:2) state that one of the fundamental arguments that support purposeful sampling is that it does not seek to obtain the views of all the participants involved just because the researcher is looking for a specific answer; instead, the researcher focuses on scrutinising the various views of the participants involved. Lecturers teaching different modules were used as participants. They were selected because they use or have used the flipped classroom in their first-year courses.

### **1.6.2 Data analysis, interpretation, reporting and quality assurance**

Data was analysed using thematic analysis. According to Braun and Clarke (2006:82), thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes a data set in (rich) detail. According to Nowell, Norris, White and Moules (2017:8), this means that thematic analysis looks through the data to see commonalities and, from that, identifies the main themes that will provide an overview of the data collected. The type of thematic analysis I used for this study is the inductive approach. Braun and Clarke (2006:87) explain the inductive approach as being suitable for data collected specifically for research (e.g., via interviews or focus groups) and that the themes identified may have a slight relationship with the particular questions the participants were asked. The goal of thematic analysis is to recognise important patterns in the data and categorise them into particular themes. These themes will then be used to aid the research or provide information for the research. This approach offers a much more informative perspective than simply summarising the data. If thematic analysis is done properly, data will be interpreted correctly and it will make sense (Maguire & Delahunt, 2017:3353). This notion was particularly relevant to this study, because the semi-structured interviews exposed varying views related to the flipped classroom and its implementation. These views guided me, as the researcher, in interpreting and making sense of the thematised data according to the study objectives.

## **1.7 SIGNIFICANCE OF THE STUDY**

Teaching and learning are the core business of universities; therefore, it is imperative that institutions introduce and make use of teaching and learning methods that work best to assist students to learn effectively and efficiently. The nature of the approach of flipped classroom will benefit lecturers who adopt this model of teaching, because they will be able to continue presenting the curriculum by being in the class physically, and because student engagement will be enhanced, as students can engage with their studies outside the classroom. This study aimed to fill gaps in research by using particular, simple tools in its execution. By being aware of the simple tools that one can use in a flipped classroom, lecturers might become keen to apply this teaching and learning approach in their classes, thus, realising how much the flipped classroom can contribute to the overall understanding and conceptualisation of course content, while at the same time fostering collaboration and teamwork amongst students.

## **1.8 ETHICAL CONSIDERATIONS**

As a researcher, I had a responsibility towards the research participants, as well as to colleagues and the people to whom I would present the findings of the study. Firstly, the rights of individuals were respected by structuring the study in such a way that it did not harm any individual, but, instead, benefited the community involved. Issues of confidentiality were considered. As a researcher, I took care to avoid exposing the identity of the participants. Pseudonyms were used to identify the participants. I applied for ethical clearance from the Ethics Committee of the University of the Free State. All the participants who took part in the research signed consent forms, which informed them why the study was being undertaken. I also made them aware that participation was voluntary and that they were free to withdraw if they no longer wanted to be part of the study. Participants were guaranteed that the information they supplied would remain strictly anonymous.

## **1.9 LAYOUT OF CHAPTERS**

Chapter 1: An overview of the study was presented in this chapter, as were the research aims, research problem, and a concise discussion of the

research methodology and the theoretical framework of the study. Ethical considerations taken in the study were also explained.

Chapter 2: This chapter will present a literature review and the theoretical framework of the study.

Chapter 3: This is the research methodology chapter. Qualitative research will be discussed, together with the data collection and analysis procedures followed in this study.

Chapter 4: This chapter will present the research analysis and findings.

Chapter 5: This chapter will present findings, conclusions and recommendations, and will provide a summary of the study.

## **CHAPTER 2: THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

### **2.1 INTRODUCTION**

The purpose of this study was to investigate how the flipped classroom can be used to enhance student engagement effectively in a first-year class. According to Serdyukov (2017:6), various motivations support the development and use of innovative pedagogical and interactive technology at universities. The developments as stated by Serdyukov (2017:6-7) are, firstly, implementing a systemic, active, person-centred approach that systematises the actions of participants involved in the learning process will contribute to their personal development. Secondly, it is time to replace the traditional way of conveying knowledge with more active approaches to learning. By traditional ways of teaching, I refer to a lecturer going to class carrying a text book and a memory stick with slides, presenting the lesson and then giving students an assignment to do after class. Furthermore, it is imperative to design, as far as possible, outcomes with guaranteed positive results, which require a continuous technological chain of actions through using appropriate methods and techniques that foster lecturer-student interaction.

The theoretical framework that I used to underpin this study is activity theory. The theory will be discussed in this chapter, and interconnections will be made between activities, tools and human subjects (students), and I will explain how linkages between these elements can assist in reaching the ultimate goal of student engagement through the flipped classroom. This chapter will also present a literature review about the topic under study. The importance of student engagement in higher education institutions and the responsibility that higher education institutions have to ensure that students are engaged appropriately, will also be highlighted. The chapter will explore the impact that online learning has in 21<sup>st</sup> century teaching and learning, and how the use of technology has increased significantly over the past few years. Later in the chapter, the flipped classroom, as an innovative teaching and learning approach, will be explored as a possible approach that could enhance student engagement.

## **2.2 THEORETICAL FRAMEWORK**

### **2.2.1 Origins and background of activity theory**

The theory that underpins this study is activity theory. I found this framework to be suitable for this study because its tenets addresses the objectives that the study aimed to achieve.

According to Amry (2018:145), activity theory is derived from the Russian school of human development, from a defence by L. Vygotsky of his historico-cultural thesis. Amry (2018:146) explains that, in 1987, Engeström expanded activity theory to include the element of community sharing of the same object. The model founded by Engeström constituted one of the last major advancements of this hypothetical system of activity theory: the "fundamental structure of an action". This study drew mostly on Engeström's expanded theory. To start, I will provide background on how it developed. Hardman (2005b:259) explains that, as a result of the work of scholars and Soviet clinicians (Leontiev, Vygotsky, etc.), activity theory postulates that awareness is not an isolated set of intangible cognitive acts, such as decision-making or classification – it is distinct from mental action.

Nyvang (2006:2) gives a detailed analysis of Leontjev's interpretation of activity theory, and asserts that Leontjev based his work on the key concept of mediation, after initially centring on tool intervention to clarify how a device carries the result of a cultural historical development. Thus, the tool has an impact on the way that the user sees the assignment to be completed. Therefore, if a tool is user friendly and interesting, the user will likely be keen to complete that assignment.

Leontjev distinguishes between three diverse levels of an activity: activity, action and operation, which can be compared to thought processes, objectives and conditions in human conduct respectively. Rationale is the predominant drive that directs our activities, but it is not always given the appropriate consideration. Objective is, on the other hand, a concrete here-and-now phenomenon, it is in the centre of the activity and is that which we strive to achieve as a portion of a concrete activity. The environment and conditions within which the activity occurs are not necessarily of concern, but are vital for the actions in the activity. What is rationale in one action may

be objective in another, and so on. Operations in an activity may fail, and abruptly be brought into consideration and, hence, changed over to activity. Katsuhiko (2006:80) explains that, in all cases, the source of improvement is inconsistencies, since inconsistencies compel us to consider unused practices – these new practices can exist until modern inconsistencies have been solidified. According to Vygotsky (1978, in Hardman, 2005b:259), people use instruments to alter the world, and are themselves changed through the apparatus they utilise. While this representation opens the way for an understanding of learning as change instead of transmission, it needs clarification of the person subject and his/her part in the societal structure.

Amry (2018:145) proposes that, before we consider that human beings are isolated individuals, we should note that learning is primarily a social phenomenon, because it happens in contexts that are determined by culture branding certain marks on diverse human groups according to the way they behave daily. Organisation results therefrom, and becomes continuous through the tools that a particular group makes use of.

This collective activity system model shows clearly that human cognition, learning, feeling, and preference are socio-historical forms that happen within the setting of a culturally mediated activity system, in which the human intellect and awareness are located, distributed, and shared. That is, human learning happens through collective activity, and learning does not only entail what happens inside the activity system, instead, learning is also about the system within which the activity functions.

Hasan and Kazlauskas (2014:9) clarify that activity theory is about “who is doing what, why and how”. However, answers to those questions are seldom straightforward. Activity theory gives a focal point within which human activity can be understood. Vygotsky (1978, in Hasan & Kazlauskas, 2014:9) reports that he had significant insights into the basics of human consciousness; he explains that human thinking develops through common-sense action in a social environment. Vygotsky argues the stimulus-response model of Pavlov, and endorses the notion that human activity is carried out purposefully, guided by sets of actions, using ‘tools’, which can be physical or psychological. The last-mentioned incorporates language, the foremost critical instrument for collaborative human activity. The strength of activity theory is that it assists in understanding learning as a multifaceted outcome of interactions that are

mediated by tools, instead of something that is unclear and which happens in a student's mind.

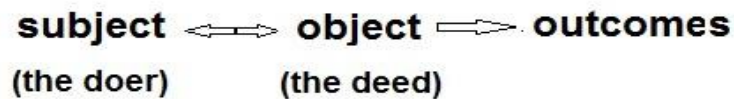
### **2.2.2 Information communication technology in activity theory**

Nyvang (2006:2) enlightens us that the old way of doing things can be part of the new way, because history presents itself through culture, tools, subjects and artefacts. Therefore, activity theory emphasises that application of ICT is not merely communication between two devices. When a particular device offers feasible, modern outcomes, the conditions for practice change. This may lead to inconsistencies and, hence, initiate an unused practice. It is vital to note that unused ICT, created in one setting and given particular meaning in that setting, may acquire a diverse meaning in another setting when it is utilised. According to Lim and Hang (2003:51), inside the structure of activity theory there exists components and these components are interconnected. In substance, activity theory proposes that activities comprise both the person and the social level, including the mediational devices and artefacts that interface the forms together. These devices may incorporate ICT devices that intercede in the work capacities of individuals in the learning environment. Lim and Hang (2003:52) continue that, in the ICT advancement stages, ICT is, at first, an object within the action framework, with a group of engineers and/or software engineers as the subject. However, when the created ICT items are coordinated into educational programmes, they end up as devices that intercede in teaching and learning exercises to create higher-order skills of thinking (objects), with a group of students and/or facilitators as the subject. ICT may become an object instead of a tool for the student or facilitator when the subject confronts issues relating to utilising the equipment or computer program. Rather than centring on the object of higher-order skills of thinking, the object may utilise the ICT equipment or software interchangeably.

I found this theory appropriate for this study, because the flipped classroom incorporates ICT to mediate interaction between the student and the lecturer, and/or the student and the learning material. In the flipped classroom, human subjects (students) are incorporated; these students become engaged in an activity (flipped classroom) through the use of technological tools. The goal of this study was to achieve the desired outcome, that is, to enhance student engagement. The study

considered how the subject (students) and object (flipped classroom) mechanisms have a facilitated relationship in relation to each other through the use of tools.

According to Hasan and Kazlauskas (2014:9), the core of activity theory is made up of the elements illustrated in Figure 2.1.



*Figure 2.1: Core of an activity, as depicted by Hasan and Kzlauskas (2014:9)*

### **2.2.3 The activity system**

The core of an activity relates to the way the subject (human doer) and object (the thing being done) is interrelated (Figure 2.1). In a similar diagrammatic representation, Hardman (2005a:381) illustrates that, what appears beneath a bi-triangular shape (see Figure 2.2), are the points that check the different parameters of human exercises, thus, taking into consideration the social or collective measurement of activities, as well as the intercession in activities by tools mobilised within the settings that are observed.

Hardman (2005a:382), furthermore, claims that, in activity theory, the fundamental unit of examination is an activity framework. Briefly, this alludes to a group of individuals, or a community, who share a common object (or issue space) and who utilise devices to act on that object, thereby changing it. The object is characterised as a circle, showing that this space is subject to amendment and is in a state of instability, making it impossible to pin down. Connections in this framework are driven by rules, which both bear and compel conduct. Division of labour within the framework portrays a horizontal division among community individuals, and a vertical division between holders of control and status.

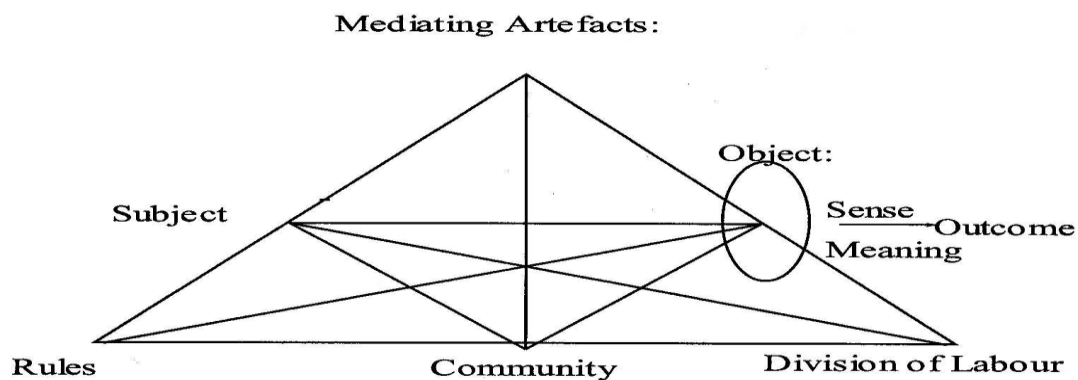


Figure 2.2: An activity system (Hardman, 2005a:360)

Bligh and Flood (2017:130) describe this model as representing a subject-object framework interceded by interlocking artefacts (whether more or less substantially tangible), divisions of work (whether by students, peers or lecturer) and rules (whether or not expressly perceived). They continue to inform that Engeström's model is broadly used for conceptualising the action level inside the theory, whether for examining a single "system" or interactions between a few. This analysis ordinarily centres on inconsistencies, and interactions develop connections between systemic components that support and weaken each other. Inconsistencies are seen as drivers of change: They are shown as subjective predicaments that individuals attempt to address, with shifting degrees of victory, subsequently changing specialist shapes of collective activity.

#### 2.2.4 Justification for using activity theory in this study

Activity theory posits that actions are meaningless unless they occur within an activity, therefore, in executing this study, it was expected that lecturers would shed light on how student engagement can be achieved through the flipped classroom model, which made this theory relevant for this study. In its application, a subject alludes to a person or group of people (collective) who are the most prominent actors in the activity (Holen, Hung & Gourneau, 2017:28). Therefore, in the flipped classroom, the students constitute subjects.

The object component concerns the motive or goal to be achieved by the activity system (Engeström, 2001:134), which, in the case of the study, was student engagement. Student engagement, in the perspective of this study, refers to the time, energy and effort that students invest in their academic work. It was expected that making use of the flipped classroom would compel students to take charge of their academic work with or without the presence of the lecturer or facilitator. Students would engage in independent learning, and most of the knowledge gained is from what individual students and peers have come up with collaboratively (Robinson, 2012:96).

The tools component is the means by which the subject (students) acts upon the object (student engagement), i.e., interaction between the two components (Hardman, 2005a:380). Various tools were used in the flipped classroom to foster communication and, especially, to deliver content to students and facilitate their learning process.

The rules component refers to the boundaries that govern actions within the activity system (Jonassen & Rohrer-Murphy, 1999:64). The flipped classroom is not as flexible as it may seem. For successful implementation, certain rules and regulations have to be put in place and adhered to, to ensure that all concerned in the activity system know and understand their positions. Rules will vary per task, and will not be fixed (Jonassen & Rohrer-Murphy, 1999:64).

The community component comprises the environment and all the stakeholders involved in the activity system (Bakhurst, 2009:199-200). In the study, the community included the learning management system, the students, the lecturer/facilitator, the ICT department on campus and all the people who were actively involved in making sure that the flipped classroom runs smoothly. Each of these components played a role in ensuring that everything that needed to happen within the flipped classroom happened, so that the objectives could be attained.

The last component of activity theory, which stems from the previous component, is division of labour, which means that members of the community each get to play an important part in the achievement of outcomes. The diagram in Figure 2.3, from Hardman (2005b:260), depicts an activity system. I incorporated the components listed above and explain what each of them represent in the diagram.

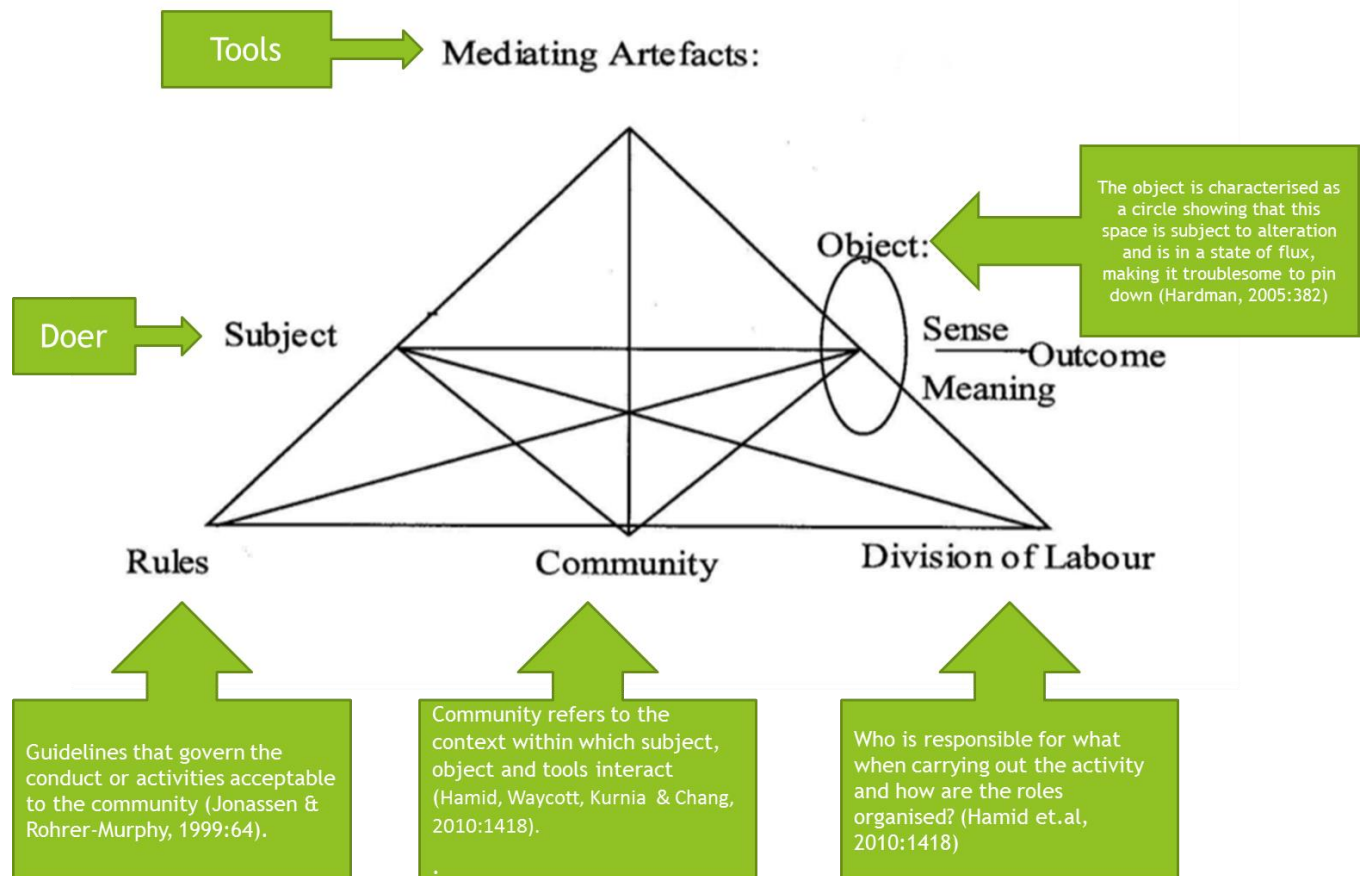


Figure 2.3: Activity system, according to Hardman (2005b:260)

Activity theory gives a diverse focal point for analysing learning forms and results, for the purpose of planning instruction. Instead of centring on the information states, it centres on the exercises in which individuals are locked, the nature of the apparatus they utilise in those exercises, the social and relevant connections among the collaborators in those exercises, the objectives and intentions of those exercises and the objects or results of those activities (Jonassen & Rohrer-Murphy, 1999:68). The analytical concepts of this activity involve students and various ICTs they use for learning, as well as rules they have to observe as members of the university community. Thus, activity theory was appropriate as a theoretical base for unpacking experiences, perspectives and views of lecturers pertaining to the manner in which they use tools for learning.

## **2.3 LITERATURE REVIEW**

Wingate (2007:394) claims that students need to have an understanding of their role in higher education. They need to be aware that it is expected of them, that is, to be independent and take responsibility for their learning, which, in essence, means that they actively and critically engage with knowledge instead of merely being passive recipients. According to ACER (in Kift & Field, 2009:1), student engagement amongst first years is at the core of successful demonstrations of learning outcomes and realising student retention goals (or targets). I conducted a literature review of the key concepts of the study, and investigated what student engagement means in the higher institution context, and what the impact of technology-facilitated teaching and learning, online learning, Web 2.0 tools and the flipped classroom involves.

### **2.3.1 Student engagement in context**

Kuh, Kinzie, Cruze, Shoup and Gonyea, (2007:9) state that there are two key components in student engagement. The first is,

*the amount of time and effort students spend on academic activities and other activities that lead to the experiences and outcomes that constitute student success. The second is the ways in which institutions allocate resources and organise learning opportunities and services to induce students to participate in and benefit from such activities.*

Robinson (2012:98) states that the justification for the development of student engagement practices in higher education institutions is to improve students' overall experiences and to create effective learning communities for both students and staff. Student engagement is a broad term that has been defined by various researchers in different ways. Definitions include references to the way student interact with their content, how they interact with their lecturer or instructor, how they interact with their peers and the social spectrum within which they engage.

Coates (2007:122) describes engagement as “a broad construct intended to encompass salient academic as well as certain non-academic aspects of the student experience”, comprising the following:

- Learning in an active and collaborative manner;
- Taking part in challenging academic activities;
- Effective communication with academic staff;
- Getting involved in inspiring educational experiences; and
- Acquiring significant support from university learning communities.

The following findings in the context of the United States confirm the effect that student engagement has on first-year students (Kuh et al., 2007:3):

*Due to higher levels of student engagement, significant increase in academic grades was experienced;*

*These higher levels of student engagement were also seen to compensate on academic grades of students who got entrance to institutions with academic achievement with low point scores;*

*Significant levels of student engagement were also related to the probability that students will come back for their second year of study.*

For the purpose of this research, I focused on a definition that alludes the extent to which students involve themselves in their academic work, and how they can be assisted to achieve their academic obligations, by Kuh et al. (2007:9). In traditional classrooms, most students are rendered passive recipients of information, which makes them ineffective through most of the learning process. There exists a need to apply more efficient approaches to education that will make up for claims of student ineffectiveness in the learning process. Innovative learning approaches, assisted by technological opportunities, can be put to use.

Axelson and Flick (2010:41) contextualise student engagement within the confines of the involvement of students in their learning process. They argue that, if engagement is measured by the time students devote to effective educational practices, then there would, naturally, be a desire to determine what can be done to bring about more of it. Institutions need to be aware that their responsibility lies in creating and sustaining high levels of student engagement. Teaching and learning methods should work towards effective student engagement practices.

The creation of technology-based training environments in education will bring about modernisation of educational settings. The use of technology in higher education institutions should not be optional, and should be exploited to bring about advanced teaching practices for students.

### **2.3.2 Technology-facilitated teaching and learning**

According to Carr (2014:80), the evolution of technology and the increased intake by some higher education institutions have encouraged many institutions to develop other means of effective instructional delivery to meet these challenges. Teaching and learning at higher education institutions are now being directed by the students they attract, because today's students are comfortable with and skilled at using technology. Thomas (2010:43) reports that social media applications, such as blogs, wikis, and Twitter, are popular, particularly among the youth. Compared to inactive exercises, such as watching television or attending a lecture, developing in an interactive, socially interconnected innovation environment can cause a massive change in the socioeconomics, interface, needs, desires and work propensities of today's student population. When innovation and its affects are omnipresent and inescapable in all perspectives of life, our classrooms need to reflect what goes on around outside. Schools must attempt to bridge the gap between classrooms and real-world scenarios.

#### **2.3.2.1 *Online learning***

Online learning is a type of learning that depends on using ICT for the delivery of teaching and learning content. ICT is a global network that enables people to communicate and exchange information and ideas using gadgets, such as computers, cell phones, tablets, etc., to establish communication channels between them. The introduction of ICT in education echoes the current evolution of technology in communities (Mdlongwa, 2012:2).

Jansen (2010:196) explains that the traditional classroom that presented itself as a physical area where lecturer and students come together at a certain time, is today an online platform, for which electronic computer depots construct virtual networks mediated by computers. The lecturer/facilitator remains the mediator, while the computer is the medium that facilitates communication for teaching and learning on

these online platforms. On these online platforms, sometimes referred to as virtual classrooms, students and the lecturer/facilitator converse at any time from any place through mediated technology. Park (2015:390) states that computer technology is the key requirement, meaning that all communication that takes place on online platforms during teaching and learning is via computer depots that create network links of association – the digital classroom – that uses suitable software that has been exclusively designed for such a purpose. This communication is classified as internet-based communication. The type of learning platforms can be coordinated (e.g., online chats) or involve non-simultaneous techniques (e.g., blogs). According to Cigdem and Yildirim (2014:80), the ever-increasing progress of internet-based technologies, infrastructure and communication enable effective teaching and learning through online learning means.

According to Nyvang (2006:1), implementation of learning through the use of ICTs in higher education institutions may be a complex task. It influences the way students learn and instructors instruct, and even the way administrators administrate, as well as the way pioneers lead the institution. It does so by challenging existing hierarchical, academic and technological practices. The goal is usually to extend quality, productivity, adaptability and quantity of the learning process. Higher education institutions have to investigate ways to organise the execution of ICT in learning environments. Considering the continuous advancement of ICT, it is critical to realise that using ICT is not a one-time event. One of the initial phases required to ensure a smooth transition of the process of change, is to obtain an understanding of what the execution of ICT in learning situations involves and how it influences the way teaching and learning is implemented.

South African universities have been very receptive to this advanced mode of learning (online learning). Over the years, the University of the Western Cape has encouraged the use of e-learning (electronic learning) as part of the institution's overall operational plan. The initiative received a positive response and staff were eager to use the e-learning platforms (Bharuthram & Kies, 2012:2). A study conducted by Wilkinson (2014:128) at the University of the Free State found that professional development is embodied in advanced ways of scholarly teaching in various disciplines. The scholarship of teaching and learning informs the practices that are followed. Since the

adoption and relatively common use of technology at this university, learning communities in the Faculty of Law have been enthusiastic about the advanced uses of technology in teaching and learning. Wilkinson (2014:131) conducted a technology-needs survey to determine the frequency of use and ability to use Blackboard, which is the learning management system of the University of the Free State. The 12 participants in the survey indicated that they used the online library, the presentation software (PowerPoint) and word processing. Blackboard seemed to be used frequently by the participants to relay information to students. More than half the participants mentioned that they did not have the necessary skills for advanced usage of Blackboard, such as audio and video uploads, setting online tests or assignments, using blogs, wikis, etc.

Kajee and Balfour (2011:187) believe that lifelong learning has become associated with participation in the digital age, and affects everything, from access to information technology, to its use in teaching and learning. It may seem that online learning is flexible and unconstrained, but students have the responsibility to take charge of their time, by attending class, accessing the posted course material, participating in discussion threads, doing sufficient research and being interested in acquiring new knowledge through independent study (Jansen, 2010:196). Jansen (2010:196) elaborates further that “it is, therefore, inevitable that educationists familiarise themselves with these online learning practices to examine their contribution to, and influence on, how learners know and do things”. The use of online learning needs to be treated with great consideration, as it plays a role in the digital age that our students find themselves in and the contribution they will make in the world of work when they graduate from university.

Lecturers need to spend time on preparing videos and other instruction media that are to be uploaded to cover the content they are to offer to students. Technical issues also need to be considered, because students need to access the uploaded videos as they wish. Repetitive instruction is essential for face-to-face contact sessions, but tends to frustrate students in recorded lectures (Enfield, 2013:25). Green (2015:181) reports that, for students with low motivation and those who are not high achievers, the online element of the flipped classroom may pose a challenge to implement, because of the nature of self-directed learning that is required. Students who are new to university

(especially first-year students) require more support, high levels of social interaction and constant guidance. They may find interacting with computers for most of the time frustrating, and may end up feeling lost and abandoned.

It is clear from these benefits that online learning is slowly but surely pervading the teaching and learning context in higher education institutions; therefore, it is imperative that students, together with academic staff, familiarise themselves with the use of online learning in pursuit of enhancing teaching and learning for our students. It is worth noting, however, that using technology as a mode of content delivery is still an emerging system in developing countries, such as South Africa. Experiencing resistance and incompetence can be anticipated in students and lecturers, because they feel under-prepared (Kajee, 2010:380).

#### *2.3.2.2 Web 2.0 tools*

In the past, before the evolution of technology, internet users could only use the internet for finding information, which was a read-only interface known as Web 1.0. Advancement to Web 2.0 came with read/write capabilities, which means users can create their own content and participate actively. Emphasis is on a participatory culture, and Web 2.0 technologies can inspire students and lecturers to work collaboratively and share ideas in an innovative way. These technologies also compel lecturers to reconsider their teaching and learning practices, so that more meaningful and active learning environments can be utilised (An & Williams, 2010:41).

The Web 2.0 concept was founded on a number of web-based applications and services that were already being used in education in some way or another. These web-based applications are seen more as services (or user processes) than technologies, which have made use of technology building blocks and standards, which are open to support the Web and the internet; examples are sharing services, through multimedia tools, wikis, podcasts and blogs. Many of these technologies are quite well established, and have been in use for a number of years, even though there is constant enhancement of features (Anderson, 2007:7). Web 2.0 is what the flipped classroom is about: using interactive and collaborative tools for teaching and learning. Web 2.0 allows for platforms where course material can be distributed, and makes provision for effective discussions on the distributed content.

The benefits of Web 2.0 appear to correspond with cutting-edge thinking, the nature of learning for the information age and the comparative instructional practices anticipated by students who are “digital natives”. These benefits include the following (Thomas, 2010:52-53):

- Students are offered new opportunities to take control of how they learn and the ways in which they access resources and customised information;
- Students have greater autonomy on how to present their work creatively;
- More collaborative ways of working is permitted, with community creation, exchange and information sharing;
- Students have the opportunity to exhibit their accomplishments to an authentic gathering of people, frequently utilising non-traditional media, such as video; and
- Student differences and capabilities are accommodated more easily than in traditional classrooms.

Expecting higher education institutions to conduct their teaching and learning online immediately, therefore, presents challenges, as students and lecturers need to get accustomed to this type of practice. Alternatively, higher education institutions should strive to achieve a balance between using high-technology tools and traditional teaching and learning methods. This balance is referred to as blended learning. Blended learning is a form of learning in which students learn outside the traditional classroom by making use of ICT to deliver learning material. This form of learning is gaining popularity in developing countries, where more universities are gradually adopting blended learning in their teaching and learning practices. In blended learning environments, students are allowed to learn without boundaries and are offered the opportunity to self-direct their studies.

In summary, blended learning can be defined as a combination of online instruction and face-to-face interaction (Kim, 2007). The flipped classroom is a type of blended learning approach that has become popular in recent years, as a different pedagogical approach in which traditional instruction is reversed. The flipped classroom model places more focus on group learning than on individual learning. The principal focus

of the model is to use face-to-face class time effectively (Ayçiçek & Yanpar Yelken, 2018:386).

### **2.3.3 The flipped classroom**

#### *2.3.3.1 Origins of the flipped classroom*

This approach is also referred to as the inverted classroom (Bergmann & Sams, 2012:13). The origin stories of the flipped classroom, sometimes even simply known as the flip, vary, though Jonathan Bergmann and Aaron Sams seem to get most of the credit for its inception. They were high school chemistry teachers in Colorado, who, in 2006, decided to use recorded lectures. The flip developed from numerous experiments with the concept of hybrid, blended and problem-based learning, which adopted active learning techniques and advanced technologies to involve students in teaching and learning (Arnold-Garza, 2014:8). According to Logan (2015:3), Bergmann and Sams realised that activities, such as sports competitions and other school-related activities, caused students to miss classes and, thus, encounter problems when they have to complete homework when they are unable to attend class. Bergman and Sams (2012:3) explain that the concept of the flipped classroom came about one day when Sams was paging through a technology magazine and came across an article written about software that could record PowerPoint slide shows. This software could also record voice and other annotations, after which the recording could be converted into a video file that could then be distributed easily online. At the time, YouTube was still very new and the idea of online videos was in its early stages. Bergmann and Sams discussed the possibilities of the software and realised it could be the solution to the dilemma of students missing classes and, therefore, missing out on learning. They started recording their lectures and posting them online, so that students had access to them.

#### *2.3.3.2 Flipped classroom in context*

Students in the flipped classroom are actually engaged with lower levels of cognitive work (attaining knowledge and comprehension) in their own time outside the classroom, while the higher order forms, such as application, analysis, synthesis and/or evaluation are reserved as an in-class activity, where students work

collaboratively with their peers and share knowledge. The model is the opposite of the traditional model, in which exposure to content occurs via a lecture in class, with students integrating knowledge by doing homework, thus, the term flipped classroom (Brame, 2013). The lower levels of Bloom's taxonomy are presented prior to class, when students work through recorded lectures and other tools provided. Other material, such as readings and simulations, provide the foundations for learning support, so that time spent in class working on the higher levels of learning can be productive (Zainuddin & Halili, 2016:316).

The approach makes use of technology for content delivery outside the classroom to ensure that students come to class well prepared for classroom activities. This is an efficient way to increase class time for student-centred, active learning (Nanclares & Rodriguez, 2016:2). Traditionally, class time is preserved for delivery of content, with the application of learned content reserved for outside the classroom, usually termed homework (Little, 2015:265). With the flipped classroom, this teaching and learning strategy is reversed, and makes use of recorded videos to deliver course content outside the classroom, while that which is termed homework, is done during class time. In traditional lessons, students are expected to sit and absorb as much as they can, and then practise the work they did in class independently after class or at home. The flipped classroom makes provision for the extension of learning beyond the classroom, through technological advances. Direct instruction maintains its significance, because it is used for thorough discussions, question-and-answer sessions and assessment (Unruh et al., 2016:40). Crews and Butterfield (2014:44) believe that the flipped classroom gives students time to familiarise themselves with new class content in their own time and at a pace that their intellect permits, so that they can thoroughly grasp the content. Class time, then, involves hands-on, task-based activities, which they engage in collaboratively with the lecturer/facilitator and their peers. This approach ensures that learning continues in the absence of student dependence on teachers/lecturers and their classes, though there is still some contact. This student-oriented system, as a standard for a constructivist education system, coupled with sufficient training, allows students to interact with their education at any time (Akin, 2016:101).

The most significant difference between online learning, which was discussed in Section 2.3.2.1, and the flipped classroom, is that online learning is learning purely through the internet. Online learning is used mostly for distance learning. Students receive all their learning material online and have to work independently, while, with the flipped classroom, class time is still an important part in the delivery of sound education with sufficient use of technological tools (Logan, 2015). Content is not delivered through straight speech and other such teacher-centred methods, instead, the teacher acts as the supplier of information that is related to the curriculum, so that students can engage with course content before class time, after which knowledge is acquired and deliberated on in the classroom. With the flipped classroom approach, students come to class better prepared, and have sufficient time to collaborate in groups, to share their individual understanding and to reach consensus (Akin, 2016:103). This procedure ensures that students are locked in seriously with the content, which encourages a profound understanding of the material. It is important to note that, with the flipped classroom model, students are given feedback timeously on their learning, while they are grappling with complex issues within the class space where the lecturer/facilitator is present (Smallhorn, 2017:44).

Le Roux (2016:54) undertook to investigate the impact that a partially flipped classroom might have on a rural South African campus. In her study, she found that, after using the partial flip that she had decided to explore, small changes were evident, which had a positive influence on how students engaged with content, particularly complex content, which required cognitive ability. Scott and Tanner (2015:220) agree that the flipped classroom approach yields positive benefits for the attitudes of students towards their learning; they like the interactive nature of the approach. However, just like any other new approach that has been subjected to trial and error, certain challenges were noted when implementing the flipped classroom approach.

The use of technology for teaching and learning seems to be increasing at higher education institutions; its relevance in teaching and learning is slowly but surely pervading the education system. At a rural university, like the one I involved in this study, class time is necessary. Flipping the classroom is appropriate, because it makes use of online tools and couples it with the available class time. This enables

the lecturer to cover the curriculum in the best way possible, without having to compromise quality.

According to McCarthy (2016:332), first-year university students are usually confronted by a great deal of work that they may find difficult to comprehend, given the challenges involved in the transition between the manageable workload they were used to in high school and the workload at university. Higher education institutions have started to implement inventive learning styles, such as collaborative learning, problem-based learning and dynamic learning, to change students' mind-set about learning, and this can be done through the use of learning management systems, social networks, recorded lectures and instructional exercises, wikis and blogs. Lecturers recognise the need to engage students promptly and to offer assistance to make learning at higher education institutions as easy as possible, by applying technological advances.

Using the flipped classroom model allows students to obtain the content before class time, so that they can work through it thoroughly before class interaction. The class interaction is reserved for discussions and problem-solving; students get a chance to ask questions on the work they were given, and share how they each interpreted the content, thereby sharing with peers to deepen their individual understanding.

Another one of the key benefits of the flipped classroom is that material posted online is available for referencing later on. If students are absent or have to attend extracurricular activities, they actually do not miss out on learning because they cannot attend lectures (Bergmann & Sams, 2012:4).

Brame (2013) proposes four key elements that constitute a flipped classroom:

- Students are given the opportunity to be exposed to the course content before class, through, for instance, screencasts and lecture videos.
- Students come to class better prepared if content-specific tasks are completed prior to class. This can be done by requiring students to do automated quizzes, and opening a discussion board on which content to be discussed is already available for discussion.
- Instruments for assessing students' prior knowledge can be created. If tasks are given before class, the lecturer is able to evaluate student needs

and, thus, align class content to suit them. Students can be given quizzes that they can grade themselves, which will help them determine how much they know and in which areas they require more assistance. In-class activities can be set up in a way that provides feedback from the lecturer and peers.

- In-class activities should be used to foster higher-level learning objectives. Deeper learning should be promoted during class time, in order to enhance the skills and knowledge that students gained while doing the activities that were given to them prior to class.

Certain shortcomings were observed with this model of teaching and learning. According to Enfield (2013:25), preparation of videos required a considerable amount of time, because lecturers need to make sure that quality of the initial presentation is adequate. For faculties that are comfortable with the traditional face-to-face style of lecturing, planning for efficient in-class activities can be a demanding task. Furthermore, if video quality is poor and students do not understand the content, then the whole exercise becomes futile.

Siegle (2014:52) highlights the following limitations of implementing the flipped classroom. For the concept to work, students must have access to technology outside their lecture/on-campus hours. Even though numerous students have computers and access to the internet, these circumstances are not inclusive at all. Secondly, in order for home assignments to be completed, students need some kind of motivation, and that motivation can be gained through watching a video prepared by the lecturer/facilitator, doing research via the internet, or viewing online presentations on specific topics. Students who lack motivation are at risk of falling behind, due to failing to do the necessary preparation prior to attending class. Thirdly, lectures presented on video, or live, may not be the ideal way to learn. Fourthly, few instructors have the time or ability to develop all the required lessons for students to observe. I considered these shortcomings during my data collection phase and as I prepared the interview schedule, to ensure that the questions I asked aligned with the research questions.

Smallhorn (2017:44) refers to a study he conducted, which found evidence that student engagement increased with the flipped classroom. It is less clear whether the

flipped classroom leads to an increment in quantifiable academic performance. This lack of confirmation highlights that the benefits of the flipped classroom for student results may not be in the form of academic achievement and measured by exam scores or point grades, but may be gains relating to engagement with scholastic subject matter, lecturer/facilitator and peers, striving to the reinforce deep-rooted learning.

## **2.4 CHAPTER SUMMARY**

This chapter presented a brief introduction to this study, which was aimed at comprehending how the flipped classroom can be used to enhance student engagement in a first-year class. Activity theory, as the theoretical framework I adopted, was discussed. This framework helped to provide perspective on the components of an activity system. The flipped classroom was positioned into the activity system to guide understanding of the phenomenon, in a quest to determine how student engagement can be achieved using the flipped classroom. Student engagement was defined and found to have different meanings for different authors. I narrowed it down for this study. The point of focus I chose is the definition that states that student engagement refers to the extent to which students involve themselves in their academic work, by Axelson and Flick (2011:41). The chapter continued with a comprehensive literature review of technology-facilitated learning, what online learning is, and what its significance is in higher education institutions, after which I discussed the Web 2.0 tools in technology-facilitated learning. The chapter concluded with an in-depth discussion of the flipped classroom as an innovative teaching and learning approach.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

The aim of the study was to establish how the flipped classroom can be used to enhance student engagement in a first-year class. This chapter will discuss the research methods that were adopted in the study. Information will also be provided on the participants and the criteria that were used to select these participants. The research design I chose for the study will also be described, as will the rationale for choosing the specific research design. Data collection will be discussed in relation to the instruments that were used and the procedures followed to carry out the study. I will also review the data analysis method used, and discuss the ethical considerations for the study.

### **3.2 RESEARCH PARADIGM**

In order to interpret the existing situation in relation to this study, an interpretive paradigm was adopted. Hughes (2010:35) describes a paradigm as “a way of seeing the world that frames a research topic”; a paradigm has an influence on the way a researcher thinks about their topic. Willis (2007:8) defines a paradigm as “a comprehensive belief system, world view, or framework that guides research and practice in a field”. Willis explains that, philosophically, a paradigm consists of an interpretation of the nature of reality, known as the ontology, either external or internal to the knower; an associated interpretation of the kind of knowledge that can be generated, the specifications for justifying it, known as the epistemology; as well as the methodology, which is an ordered way of knowledge generation. According to Taylor and Medina (2011:2–3), several major paradigms govern explorations into the practices and policies of education. Pedagogical content is contained in each paradigm, as is professional development and curriculum and assessment.

This study adopted an interpretive paradigm. According to Kivunja and Kuyini (2017:33), an interpretive paradigm seeks to understand a particular worldview of human experience, to “access the head of those under study in order to try to understand and make sense of what they are thinking”. They explain that efforts are

made to determine the views of the observed subjects, instead of those of the observer. From this explanation, I deduced that the interpretive paradigm places emphasis on deriving meaning from the subject and how the subject interprets the world. With the interpretivist paradigm, researchers cannot view research from outside; instead, research needs to be viewed from inside, to determine the people's experiences. Therefore, to understand the flipped classroom, an observer's perspective is not enough – those concerned with the actual implementation will be able to provide rich, informative data. Cohen, Manion and Morrison (2007:19) conclude that the position of the researcher in the interpretivist paradigm is to understand, give an account of, and interpret social reality by means of different participants' perspectives. From this exploration, I, therefore, argue that the major aim of researchers using this paradigm is to gain understanding, rather than seeking an explanation. In the next sections, I will discuss the main ontological and epistemological assumptions of the paradigm.

### **3.2.1 Ontology**

In interpretivism, reality is not directly constructed; instead, reality is subjective and is based on individual interpretation (Mack, 2010:7). I presumed that people's interpretations determine the meanings they derive from phenomena. Hence, my study sought to gather different perspectives from lecturers who used the flipped classroom, according to their individual experiences. From the data I collected, I was able to form connections between the various perspectives, which lead me to determining the best practices for using the flipped classroom and how these practices can enhance student engagement. Shah and Al-Bargi (2013:257) agree that realities exist in numerous indescribable mental creations, which take form on the basis of experience, and are dependent on the individuals or groups that hold the creations. Wahyuni (2012:71) explains that, in order to get an understanding of the social world from people's experiences and individual meanings, the researcher must work together with the people and have conversations with the participants under study.

Therefore, using the interpretive paradigm enabled me to address the objectives of this study. One of the objectives was to determine the rationale for using the flipped classroom. The ontological stance of the paradigm explains that, for a phenomenon

to be well understood, people's experiences need to be taken into consideration (Shah & Al-Bargi, 2013:258). An assumption exists that the researcher and the participants continuously engage in collaborative processes, in which both parties blend together, have conversations, question the phenomenon and document the research data (Kivunja & Kuyini, 2011:33). The preliminary data confirmed that the flipped classroom is perceived differently by different lecturers and its use varies according to each lecturer. It, thus, became important to document those views, to determine how the flipped classroom can help students to engage more with their academic content. For lecturers to improve the way students engage with their academic content, there is a need to understand what works for the students, and to make inferences about the findings. Hence, the study worked to document lecturers' different voices, in order to improve the practices of the flipped classroom as a teaching and learning approach.

### **3.2.2 Epistemology**

The epistemology of the interpretive paradigm concerns itself with the foundations of knowledge, its nature and types, how it can be realised and how it is communicated to other humans. It emphasises the nature of human knowledge and understanding, which researchers (or knowers) attempt to gain access to, so that they can broaden and deepen their knowledge on the matter under study (Kivunja & Kuyini, 2017:27). The focus is on the particulars in the situation under study – the reality, therefore – subjective interpretations, and the actions that motivated the social phenomenon (Wahyuni, 2012:70).

Interpretivism embraces subjective and value-based epistemology, subsequently, the inquirer and the asked are intertwined into a single (monistic) substance and their interaction leads to certain discoveries. Subjectivity serves as the single measure of accounting for the constructions kept by the people, which are enforced on us by human conditions (Shah & Al-Bargi, 2013:257). Once I reached understanding of the rationale for using the flipped classroom approach, of that which could constitute a conducive environment for the approach, of the resources and its benefits, it was easier to deduce whether student engagement could be enhanced effectively. Unlike other studies, the focus had shifted from striving to improve students' academic performance, to trying to ensure that students engage with the content of their

academic work, and understand and are able to apply the content that they learn in class, in real-life situations.

### **3.3 RESEARCH APPROACH**

The study followed a qualitative research approach, since the aim was to establish how the flipped classroom can be used to enhance student engagement in a first-year class. Qualitative research refers to an in-depth investigation and an explanation of a phenomenon of interest in a certain field. This type of research does not seek to test hypotheses, but rather to gain a deeper understanding of the phenomenon (Poggenpoel & Myburgh, 2005:304). According to Hammarberg, Kirkman and Lacey (2016:499), methods used in qualitative research assist in answering questions based on participant experiences, meanings derived from it, as well as the perspectives of these participants. The objective of qualitative research is descriptive, more than exploratory. Due to its descriptive nature, qualitative research allows for the description of experiences of participants, which will either support or oppose the theoretical conventions on which the study is founded (Meyer, 2001:344). This descriptive nature will, therefore, allow the reader to gain an understanding and draw meaning from the experiences of the participants, its apparent nature and the impact of the problem (Meyer, 2001:344). This research study aimed to understand the experiences of participants. The study was characterised by open-ended inquiry, instead of research that requires observable and measurable data, where questions asked by the researcher are narrow and specific (Creswell, 1998). Therefore, this research involved qualitative inquiry, because of the need to understand how the flipped classroom can help enhance student engagement.

The qualitative approach was selected because it emphasises the understanding and the analysis of meaning, as well as human interactions. I believe that, for effective teaching and learning to take place, students' attitudes to particular teaching and learning approaches need to be considered. Initially, the flipped classroom needs to be understood, including what makes it distinct from traditional classrooms. The lecturers' reasoning for supplementing a traditional teaching approach helped me to make connections between the teaching and learning model and student engagement.

### **3.4 RESEARCH DESIGN – CASE STUDY**

Case study research has grown in reputation as an effective methodology to investigate and understand complex issues in real-world settings. Case study designs have been used in a number of disciplines, particularly the social sciences, education, business, law, and health, to address a wide range of research questions. Case study design is a research design that allows the researcher to scrutinise data thoroughly within a specified setting. This is confirmed by Zainal (2007:1), who explains that case study considers, investigates and examines modern real-life phenomena through a thorough, relevant examination of a controlled number of occasions or conditions, and their connections. The design usually selects a small geographical space or a small number of participants as subjects of the research study.

Zainal (2007:2) reports that case study research permits the understanding and exploration of complex issues. It can be considered a vigorous method, especially when in-depth, general investigation is needed. Case study makes it possible to understand behavioural conditions from the actual participants' points of view, and not merely from quantitative statistical results. According to Yin (2003, in Baxter & Jack, 2008:545), a researcher should consider case study design when, (a) the study focuses on answering "how" and "why" questions; (b) the behaviour of the participants involved in the study cannot be manipulated; (c) the researcher wants to cover conditions in the context, because they believe that these conditions are relevant to the phenomenon being studied; or (d) the limitations between the context and the phenomenon are not clear.

Dawidowicz (2011:7) states that case studies can be utilised to characterise both the significance and effect of immediate interactions between distinctive groups, parts, guidelines, plans, or other components in particular circumstances, depending on the research study questions. As a result, researchers can recognise the impact people have on issues, including differences in attitudes, and how contrasting states of mind may have an impact on the overall results. In other words, case study research is suitable when there is a need to be aware of a genuine-world case. The understanding that is gained is likely to include critical, relevant conditions related to the particular case (Yin, 2014:16).

I decided to use a case study design in my study, because of its noteworthy advantage of giving a holistic view of a phenomenon, as reported above by various authors. In contrast to standalone techniques, such as surveys, which only offer an outline of the phenomenon, case study design enabled me to use various means to unpack the flipped classroom and its underlying characteristics and features. This gave me sufficient time to obtain different interpretations of the topic, and to set up a sound stage from which to investigate the variables impacting on implementation of the flipped classroom and all the external factors that may have a significant impact in achieving the objectives set for this study.

By using a case study, I was able to acquire an array of perspectives, in contrast to surveys, which would only give a single view of an interview response. In this way, I gained an advantage, and could obtain a more in-depth understanding of lecturers' perspectives on the flipped classroom, and diminish the potential for bias.

### **3.5 DATA COLLECTION**

There are three fundamental types of research interviews: structured, semi-structured and unstructured (Hammarberg et al., 2016:499). Structured interviews are basically verbally administered questionnaires, in which a list of questions is drawn up and asked, with little or no variation, therefore, not allowing follow-up questions to answers that would otherwise require further elaboration. In turn, unstructured interviews do not show any signs of predetermined theories or ideas and are administered with little or no organisation (Nigel, 2002:6). Such interviews may begin with an opening question, such as, What do you think the flipped classroom is? Then, after the response by the participant, follow-up questions will emerge. This type of interview usually takes up a lot of time and may be hard to manage, because of the lack of predetermined questions, which would otherwise provide some guidance on what to converse about. The use of unstructured interviews is generally considered when particular "depth" is required, or when nothing is known about subject matter (Gill, Stewart, Treasure & Chadwick, 2008:291).

Semi-structured interviews, on the other hand, include a sequence of open-ended questions pertaining to the topic and the key areas that the researcher wishes to cover.

The nature of these open-ended questions is such that they define the topic under study and also gives the interviewer and the interviewee a chance to deliberate certain issues in greater detail (Nigel, 2002). According to Dejonckheere and Vaughn (2019:1), carrying out efficient semi-structured interviews requires: “(1) a relational focus, including active engagement and curiosity, and (2) practise in the skills of interviewing”. To acquire valuable data, interviews must not follow a question-answer procedure, but should involve an interactive process between the interviewer and interviewee. For a more focused topic, where the researcher is seeking the views of participants, semi-structured interviews are relevant.

For this study, I interviewed three lecturers using semi-structured interviews. The interviews were conducted on a one-on-one basis. For comfort, the lecturers were interviewed in their individual offices at a time that was convenient for them. Each interview was scheduled to take one hour, to ensure that sufficient time was given to the participant lecturers, so that they did not a rush and could give as much information as possible. All the interviews were completed within the allotted timeframe. I audio-recorded all the interviews to ensure validity, and concurrently took notes (Johnson & Christensen, 2014).

### **3.5.1 Selection of research participants/sampling technique**

Gentles, Charles, Ploeg and McKibbin (2015) define sampling as, “the selection of specific data sources from which data are collected to address the research objectives”. The rationale for using a sample of potential participants is to make presumptions about a larger population according to the chosen smaller one. A purposive sampling technique was used in this study. This type of sampling is also referred to as judgemental sampling (Berg, 2001:33). Berg (2001:34) explains that, when using this type of sampling, researchers use their expertise and the knowledge they have about a certain group to select the most appropriate subjects to represent the population. Sometimes, purposive samples are chosen after field investigations have been conducted, to ensure the individuals possessing certain characteristics are included in the study. The criteria that were used to select the three lecturers that were interviewed were that the module for which the class was flipped had to have been for

first-year of students; and the lecturer had to have access to Blackboard, and was using it actively.

### **3.6 DATA ANALYSIS**

Data collected for this research was analysed using thematic analysis. According to Braun and Clarke (2006:82), “thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data”. This type of analysis offers flexibility and serves as a valuable research tool that has the potential to provide a comprehensive but complex interpretation of data. Moreover, thematic analysis allows for determination of relationships between concepts, in order to contrast these with all the data collected. By using this method of analysis, it is possible to associate the different concepts and opinions gathered from participants and evaluate it against the data collected in other situations of the research. Multiple possibilities for interpretation are then possible (Alholjailan, 2012:40). This study, therefore, adopted a six-step guide provided by Braun and Clark (2006:16), which served as an essential outline for steering the analysis. The steps were as follows:

- Step 1: Become familiar with the data,
- Step 2: Generate initial codes,
- Step 3: Search for themes,
- Step 4: Review themes,
- Step 5: Define themes, and
- Step 6: Write up.

Accordingly, Ivanski and Kohut (2017:219-220), who elaborate on these steps, implement the data analysis as follows. The first step suggests that the researcher goes through the data, to obtain an overview of what the data is saying. I read and re-read the data to become familiar with it, for quality purposes. The second step comprises drafting notes that depict ideas and opinions found in participant responses. A coding structure is, thus, initiated for the various interesting concepts that are identified. The identified ideas are then categorised into various themes. The themes are categorised according to their relatedness and fundamental ideas that render them “similar” in a way that means they can be placed under one theme. There is no

specified number of times a theme should be noted; rather, distinct themes are characterised if they add significant value to the analysis. In the fourth step, data is reviewed to determine how it fits into the various identified themes. Following the review, themes are named to simplify understanding of the data and to assist in verifying the narrative that was developed actually fits the data. Lastly, the data is reviewed for the last time, and a report of the findings is written. It is possible to move back and forth between the steps as necessary, especially when dealing with a large volume of complicated data. The data of this study will be presented in the following chapter.

### **3.7 RESEARCH TRUSTWORTHINESS**

Hammersley (2007:287) reports that some people contend that much qualitative research is of meagre standard, but generally, the complaint is that there is no clearly characterised set of quality criteria accessible for judging it, so that qualitative research is of ambiguous quality. However, according to Leininger (1994, in Hammersley, 2007:290), qualitative researchers guard the integrity of their research work by various criteria, e.g., credibility, applicability and consistency.

A report of a qualitative study ought to contain the same vigorous procedural portrayal as any other study. The aim of the research, how it was conducted, procedural choices, and details on how data was generated ought to be straightforward and unambiguous. A reviewer ought to be able to follow the progress of incidents and choices and follow the rationale, as there should be satisfactory cohesion between descriptions, explanations and justifications for the methods used in the study (Korstjens & Moser, 2018:122).

Chapter 2 reported on an extensive literature review, which was done to ensure that enough and relevant information was gathered for the research. Adequate reasoning was provided for the theoretical framework used, and reference was made to the linkages that exist between the various components of the research, which gives the reviewer a clear essence of how the study was conducted, leading to the analysis of data and subsequent conclusions and recommendations. The process I followed to ensure the trustworthiness of this study will be described next.

### **3.7.1 Credibility**

Credibility is the benchmark that is used to assess the truth value or inner legitimacy of qualitative research. A qualitative study can be deemed credible if the outcomes are displayed with satisfactory descriptions of context, and these outcomes can be identified by individuals who share the experience (Hammarberg et al., 2016:500). Thick portrayals, rising above research paradigms, include point-by-point, rich depictions, not only of participants' encounters of marvels, but of the settings in which those encounters happen. The "thickness" of the depictions relates to the numerous layers of culture and setting in which the encounters are implanted (Morrow, 2005:252).

The researcher recorded interviews that were conducted with the participants. This was done to ensure that all the details were captured, because the interview was not limited to the interview schedule questions, but probed deeply into lecturers' experiences. It was also interesting to ascertain that the implementation of the flipped classroom was affected by the context under which it was undertaken, since the study was conducted at a rural university.

### **3.7.2 Applicability**

According to Morrow (2005:252), transferability refers to the degree to which the reader is able to make a general analysis of the study, and infer to another study. This can only be accomplished when the researcher provides enough information about themselves, the context within which the research was conducted, the research participants and the researcher-participant relationship to allow the reader to determine how the results may unfold. Furthermore, considering the typically small sample sizes and the lack of statistical analysis of qualitative research, a blanket approach cannot be applied. It is, therefore, important to avoid suggesting that the findings will be applicable to other populations or settings.

Given that the study was conducted at a rural campus with limited resources, it was very unlikely that the findings of this study would be applicable to other settings. The approach could, however, be similar, as could the strategies of implementation. Another advantage could be that, even though the sample size was small, the key

processes of the execution of the approach could remain the same. Any lecturer, anywhere, can use the findings to improve their practice, if they use the flipped classroom, or guard against the possible pitfalls characterising this teaching and learning method.

### **3.7.3 Consistency**

Consistency, or dependability, of results is the standard used for evaluating reliability. This does not necessarily mean that similar results will be found in other contexts, using similar data. Other researchers could find patterns that are similar. Researchers usually aspire to describe maximum variation in the encounter of a phenomenon, not only to enlighten it, but to discourage satisfaction with restricted researcher desires, for example, negative cases or occasions that don't fit the developing hypothesis ought to be effectively identified and investigated (Morse & Richards, 2002).

Myburgh and Poggenpoel (2007:65-67) explain that consistency refers to the ability to continue using the research methodology of an original research study and reaching the same conclusions. In order to achieve this, a compact account of research methodology must be provided. There must be a gradual reproduction of methodology. Evidence must be produced for the code and recoding data-analysis process.

To ensure consistency in my study, the code-recode strategy was used. According to Preece and Chilisa (cited in Anney, 2014:279), the code-recode strategy entails the researcher going through the data again and recoding it, usually a week or two after the initial coding process. I compared the results of these two incidences to see if they yielded similar results. If the coding outcomes appear similar, it would augment the consistency of the qualitative study. This also assisted me, as the researcher, to improve my understanding of evident data patterns and to enhance the way the narrations of the participants are presented.

## **3.8 ETHICAL CONSIDERATIONS OF THIS STUDY**

Studies in an education context, specifically in qualitative research, usually raise questions about ethics, since the design of the study involves humans, with some possibly being under age. It is important to note that ethical issues might arise at any

point and time during the research. In designing the study, I had to consider any unfavourable impact that the study might have on participating individuals. Even though I anticipated possible ethical issues, unexpected occurrences might arise, which could mean the study has to be put on hold or revised (Dooly, Moore & Vallejo, 2017:351). In education research, participants are all the individuals involved in the research process, either directly or indirectly. These individuals are worthy of four types of rights, which must be safeguarded by the researcher: “(a) right to maintain privacy (b) guaranteed anonymity (c) guaranteed confidentiality and (d) avoiding harm, betrayal or deception” (Govil, 2013:18).

Informed consent is the major ethical issue in conducting research. Informed consent implies that participants are made aware of the kind of research study they are participating in as a matter of choice, and that they are exempt from any attempts at fraud, dishonesty, threat or any other comparable unfair practice and manipulation. For minors and mentally impaired persons, consent must be given by the person who is legally authorised to take care of or represent the individual (Berg, 2001:56).

Berg (2001:57-58) also refers to issues of confidentiality and anonymity in research. Confidentiality and anonymity are sometimes used interchangeably, but, in fact, their meanings are quite distinct. Confidentiality is the effort to remove elements that may reveal subjects’ identities from the research records. In turn, anonymity implies that the subjects are not given names. In most qualitative research, subjects are known to the researcher either by sight or name, thereby rendering anonymity nonexistent. It then becomes important to provide subjects with high levels of confidentiality.

Kielman, Cataldo and Seeley (2012:55) list other important aspects relating to ethics in research. Firstly, they refer to trust by explaining that, during data collection, trusting relationships need to be established, because participants take part in a study with the hope that the state of affairs will be replicated as truthfully as possible. Honesty is the other ethical aspect that these authors list. They report that qualitative data is easy to manipulate so that it may validate a preconceived thought or result. Researchers need to obey professional ethics that forbids the manipulation and selection of data that will fit into the idea that they want to support.

As a researcher, I had a responsibility to the research participants, as well as to colleagues and the people to whom I will present my findings. The rights of all participants must be respected; therefore, the study was structured in such a way that it did not cause harm to any individual who took part in the study, but benefited the community involved. Issues of confidentiality are of great significance. I ensured that I do not expose the identity of the participants. In taking care not to harm the research participants, an application for ethics clearance was made to the Ethics Committee of the University of the Free State. All the participants who took part in the research had to sign consent forms, which informed them exactly what the study was about and what was expected of them. They were also made aware that participation was voluntary and that, should they feel they no longer want to be part of the study, they were free to withdraw at any stage. Participants were guaranteed that the information they shared would remain strictly anonymous.

### **3.9 CHAPTER SUMMARY**

This chapter clarified the meaning of interpretivism, as the paradigm that directed me to using a qualitative research approach. The interpretive paradigm permitted me to choose methods that would assist me to answer the research questions best. Therefore, a qualitative research approach was the ideal method to ensure a thorough understanding of the phenomenon being researched, which is, using the flipped classroom approach to enhance student engagement. Additionally, data collection instruments were discussed, together with techniques used for sampling the research participants. The aim of using purposive sampling in the study was to acquire rich, authentic data. Furthermore, semi-structured interviews were selected as the preferred data collection method, because of its flexibility. By this, I mean that, though I used an interview schedule, the semi-structured interview method allowed me to probe further into participants' responses, thereby increasing the validity of the data in answering the main research question. Ethical considerations and quality assurance issues were also discussed in this chapter.

## **CHAPTER 4: DATA PRESENTATION, ANALYSIS AND DISCUSSION**

### **4.1 INTRODUCTION**

This chapter will present the data and analyse and discuss the findings. As indicated in Chapters 1 and 3, interviews were used as the data collection tool. The aim of the study was to establish how the flipped classroom can be used to enhance student engagement in a first-year class. The following objectives were devised to address the aim:

- To describe the rationale for using the flipped classroom;
- To review the nature of a learning environment that is conducive to a flipped classroom;
- To explore the benefits and challenges associated with the flipped classroom; and
- To identify the most suitable resources for effective delivery of a flipped classroom.

As already noted above (section 1.19), this study, adopted a six-step guide provided by Braun and Clark (2006:16), which served as an essential outline for steering the analysis. The steps were as follows:

- Step 1: Become familiar with the data,
- Step 2: Generate initial codes,
- Step 3: Search for themes,
- Step 4: Review themes,
- Step 5: Define themes, and
- Step 6: Write up.

The presentation of the findings is organised under nine themes that were identified, which align in one way or another with the research questions of this study. In meeting the obligation to maintain confidentiality of participants, pseudonyms were given to each participant, namely, Mr T, Mrs M and Mr E.

After interviews had been conducted and responses received from the participants. The following themes were identified as revealing the views and understanding of the role that the flipped classroom can play in enhancing student engagement.

#### **4.1.1 Rationale for using the flipped classroom**

The rationale for using the flipped classroom in rural institutions relates to the discretion of individual lecturers, given the contextual challenges an institution faces in terms of teaching and learning. These challenges include, but are not limited to, having to teach large classes, lack of or limited resources, and poor internet connectivity. Using innovative teaching and learning resources can present as an “impossible” task for some lecturers, though some strive to align their teaching approaches with trends and developments around the world, in order to keep up with global standards. The participants had the following views to share on their rationale for using the flipped classroom approach in their classes.

Mr T explained that the contact time he was given per lecture was not sufficient for him to cover the content. He could complete the theoretical part, but there was seldom enough time to cover the application of the theory.

*I think one of the main concerns is that I and some other lecturers were busy, we did not have enough time or contact time to get through with both the theory of the module as well as the practical application and revision, etc. And especially with the large classes, even one individual cannot afford to fall behind, you have to slow down for that individual. So one of the key things for me was to kind of get more time to do application and more revision, so typically in the past I'd do all the theories in class and then we would give them homework opportunities. But typically they struggled with the homework opportunities and I do not really have much time to work with them through some of the exercises.*

Mr T realised that his module had two aspects to it, a theory part, and practical application, and it seemed the timetable only catered for delivering the theory of the module. Therefore, he had to find a way to incorporate the practical component of the module.

Mrs M, on the other hand, had done some research on innovative teaching and learning theories, and had come across the flipped classroom. She saw an opportunity to use this teaching and learning approach to tackle the more difficult concepts in her modules. She said,

*Aaah, because of the benefits obviously, I heard of this approach for the scholarship of teaching and learning group and I saw a need for my students to be more engaged, to engage with the materials especially and focus on what the more difficult activities entails.*

Like Mr T, Mrs M had also heard of the approach from colleagues, and realised that it could actually be of use in her classes. She did not want to flip her class for the whole module, but wanted to use it sparingly for difficult tasks. It is important to note that Mrs M saw the need to flip her class in order for her students to become more engaged – she wanted to enhance student engagement – she mentioned that she wanted her students to focus more on learning material and, especially, on the more difficult tasks. The flipped classroom, thus, offered her an opportunity to make sure that her students focused more deeply on the more difficult tasks.

The interview with Mr E revealed that his decision to use the flipped classroom was based on his experience as a student at a certain university. He revealed that he was shocked to learn that there was still a university that relied solely on traditional teaching and learning methods. This is what he had to say:

*Okay ... University where I was a student, we were already using that method of studying or of learning where the lecturers used this regularly and gave us a group of questions beforehand and we had to go and prepare, find information from the library, create case studies and then come back and have discussion in class about the topics and things in advance. So when I got here and there was very little if anybody using this kind of a tool and it was a huge surprise for me. I then started using it in my class so much more to see how our students can benefit from that model of teaching as compared to the traditional teaching.*

It is interesting to see how far behind the participant university is lagging with modern teaching trends, which is a crucial matter that needs to be looked into for the benefit of students in the 21<sup>st</sup> century.

According to Carr (2014:80), the evolution of technology and the increased intake by some higher education institutions have stimulated many institutions of higher learning to develop other means of effective instructional delivery to meet these challenges. Teaching and learning in higher education institutions is now being directed by the students they attract. Today's students are comfortable with and have the necessary skills to use technology. It is evident from the views of the lecturers I interviewed that their greatest concern was to achieve meaningful teaching and learning that would promote knowledge acquisition by their students. Each lecturer saw a need for themselves to change their teaching and learning – not to benefit themselves, but to ensure that the students engage with the content as thoroughly as possible, to enhance their understanding.

Nanclares and Rodriguez (2016:2) also refer to Mr T's concern about time constraints. They articulate that the flipped classroom approach ensures that students report for class well prepared for classroom activities and that it is an efficient way to increase class time for student-centred, active learning.

Using the flipped classroom approach was initiated by word of mouth, where colleagues heard from others about this innovative teaching and learning approach and decided to use it too. Activity theory postulates that humans are not isolated individuals, but that learning starts as a social phenomenon because it occurs in contexts that are determined by culture, thereby having an impact on specific human groups in their everyday behaviour (Amry, 2018:145). I believe that, in higher education institutions, sharing knowledge is beneficial, because it contributes to everyone reaching a similar goal of providing quality teaching and learning to the students they serve.

#### **4.1.2 Correlation between the flipped classroom and student engagement**

There seemed to be a shared interpretation amongst participant lecturers that the flipped classroom enhances student engagement. However, what engagement is was

interpreted differently by each of them, though there was consensus amongst the participant lecturers that, in some way or another, the flipped classroom makes students more active regarding academic content knowledge acquisition. Mr T's view on this matter was as follows:

*After reading up on the approach I hoped that it would work in my classes, because of the core fundamentals of the flipped classroom. A lot of motivation and engagement theories has to do with giving people more freedom to studying on their own time, their own way. I think the whole idea of preferences of the 21<sup>st</sup> century learner also kinds of lends itself to that. They are comfortable watching YouTube videos educating themselves on the concepts, you give them more ownership and autonomy of the learning, one would expect that they have high levels of engagement. It also made logical sense to me that if we start to use different methods of teaching, it would have more impact.*

In Mr T's view, the idea of the 21<sup>st</sup> century learner suggests that, if students are taught in a manner that they understand and enjoy, they are more likely to engage deeper with learning, in contrast to just being fed information, like they are in traditional classes.

Mrs M had this to say about the correlation between student engagement and the flipped classroom:

*Yes, definitely or umh ah I can't say definitely but umh it seemed like it because I did a correlation between class attendance during the flipped classroom and the final mark and there was a strong positive relationship and for me it makes everything seem to say students to be more engaged in class and it had an impact on their final mark.*

Mrs M observed that students' marks had actually improved since she started using the flipped classroom, showing that the class discussion became meaningful when students reported for class prepared.

Mr E's experience of student engagement and its correlation with the flipped classroom is comparable to that of Mrs M. He explained that, in his case, the following happened in his classes:

*In my class, say in my normal class, I would give a lecture and there would be very little response from the students, might get a question from 1 or 2 really confused students, but otherwise they are very quiet. But in a flipped classroom completely the opposite happens, because then I would give them material before they come to class and then they would come prepared in class and would actually want to prove to me that they are prepared by engaging in discussions and answering questions.*

It is evident from the responses by Mr E and Mrs M that distributing material before class is beneficial, because students do not come to class as empty vessels waiting to receive – instead, they come with knowledge they want to share.

In relation to Mr T's view that students learn better if they are permitted to freely study the content the way they believe is best for them, Hardman (2005b:259), with reference to activity theory, argues that people use certain tools/instruments to change the world, but end up being changed themselves in the process. This interpretation aligns with Mr T's assumption that, if students are given autonomy to learn as they wish, and using the tools they enjoy using, they will end up, indirectly, engaging more with the content than they had initially anticipated doing. This means that the more students enjoy using the tools, the more they also work through the content multiple times, resulting in more engagement and understanding of the content. Mr T and Mrs M shared the same experience, namely, that it is constructive to give students work before they come to class, so that they come to class already knowing what will be taught. And because they will have worked through the content before class, they come to class with questions that they have already prepared, thus, prepared for interactive discussions during the contact time. One of the main tenets of the flipped classroom is the use of technological tools to deliver content outside the classroom. In this way, traditional class time is preserved for delivering content and applying the content that had been learned outside the classroom (Little, 2015:265). This means that the flipped classroom gives students the opportunity to work through the content before they come to class, thereby making class time an interactive learning sphere, which is evidence of how students engaged with the content.

#### 4.1.3 Resources used in the implementation of the flipped classroom

Anderson (2007:7) states that certain Web 2.0 resources and tools are used in the implementation of the flipped classroom. Using Web 2.0 is exactly what the flipped classroom is about: the use of interactive collaborative tools for teaching and learning. These resources are meant for the delivery of content material outside the classroom. Regarding in-class activities. Mr T had this to say about the resources he used in his flipped classroom:

*In a nutshell, I broke down the use of resources into three major phases, before class, in class and towards the end of the class. So before class I made little screen capture videos, with some animations include characters jumping around and pointing at things. I would make slides and record a narration behind the slides where I would be explaining whatever is on the slides. I tried to design the whole pre-reading activity in terms of videos that they can watch, and if they don't understand something they can always rewind and listen again. I made sure the videos are downloadable from their cell phones, maybe their accessible to their smartphones so I use software to crop it in terms of the size but quality remains. I also used quizzes to give them the fundamentals of what the unit is about. In class I was redesigning, in terms of more collaborative, more peer learning and more interactive discussions and more classroom debate. I used Blackboard as a platform to post all these resources and learning material, which they had to go through before class. Towards the end of the class I had what I called exit tickets, where at the end of the lecture I would pose a higher level application type of question which they needed to apply the theory to their own life and reflect on what has been discussed and what they saw on the video. The study guide we also used because the case studies were in the guide, so students would be told which case study to go through for in class discussion.*

It seems Mr T made use of various resources for the sake of accessibility of learning materials; he also used various techniques to ensure that the students engaged as much as possible with the content material. More effort was directed at the pre-reading

phase, because this is the part where the core of student engagement is essential – where they need to grasp and understand the content.

Mrs M, on the other hand, pointed out that she did not have to use technology that much in her implementation of the flipped classroom. This is what she had to say when she was asked about the resources she used:

*Ehhh, I mainly use the textbook and ehhm, questions, third, aaah, aaaah, I was wanting to say hard copy material, because the one thing I found is that more than 60% of my students reside off-campus. So I did make use of videos, quizzes and all that but I didn't solemnly rely on them because I know there is different definitions of the flipped classroom. Some or most of them had a technical, online element and is better that way but mine also had that but I also ask them to prepare a certain part and I think it was reading, watching, watching videos, so it was mainly blackboard and prescribed textbook. I would give them simple and most basic questions to do and then build on that in the next class, so that we don't waste time on the simple things, basic things and then when we get to class we focuses on the more difficult questions.*

Using technology in the implementation of the flipped classroom seems to be the ideal, though Mrs M was conscious of the fact that most of her students lived off-campus and would have difficulty accessing material online.

Mr E, like Mrs M, believed that flipping the classroom and disseminating information and study material should not be limited to or solely focused on using technology. He made use of other means to ensure that the students engaged with the content. He had this to say when he was asked about the resources he used:

*I gave them question papers, sets of about 30 questions that are possible questions that I can ask out of the chapter and then there is the textbook to go through and study each week. They read through the textbook themselves and they can now get additional information also from the articles, other books and compare when answering the questions, and then they come to class and we have a 2 hour discussion were we go through the questions and everybody gets the chance to air their input and we finalise the answer. Soo there wasn't really*

*the resources like computers, and anything that needed internet access, unless if they wanted additional info.*

Mr E used the resources that were at the disposal of the students, like Mrs M, but he did not explain why he did that. I assume it was a matter of preference, and what each lecturer sees fit for their module. He did not, however, rule out the possibility of using technology, because he later informed me that,

*I used Blackboard minimally to communicate and maybe post questions and stuff, but not so much that they have to answer the questions there, it was not needed that the technology be there but it can also be used here and there.*

I believe that, in the era we live, we cannot avoid using technology. Though Mr E did not use it much in his flipped classes, it came into play some way or another.

“In Activity Theory, the relationship between subject (human doer) and object (the thing being done) forms the core of an activity” (Hasan & Kazlauskas, 2014:9). In activity theory, the primary unit of analysis is the framework of the activity. Briefly, this refers to a number of individuals, or a community, who share a joint object (or issue space) and who make use of devices to act on that object, thereby changing it. A circle depicts the object, indicating that the space is subject to modification, and lacks stability, making it problematic to pin down. Connections in this framework are driven by rules, which both bear and compel conduct (Hardman, 2005a:381).

Thus, with reference to the participants’ responses, using technology, in any form, is part of a complete activity. In this study, all three participants pointed out that they used technological tools in their implementation of the flipped classroom. According to activity theory, using tools acts as the link between the students, lecturers and the activity that they are engaged in (Hasan & Kazlauskas, 2014:9). Using technology cannot be ruled out completely, as the use of technology is within the framework of a comprehensive activity. The object in this regard is the flipped classroom, which activity theory points out is represented by a circle, meaning that it can change all the time. Hence, we see the differentiated ways in which participants chose to “flip” their lessons. There is no ideal way to implement the flipped classroom – each individual can flip in the way they prefer, as long as the outcome of student engagement is achieved.

The activity system also incorporates the use of rules that compel conduct (Bligh & Flood, 2017:130). We saw from all three participants that, for flipped classroom to yield the anticipated student engagement outcome, there are rules that students need to abide by. Content is not just given to students for them to use if they feel the need. Each lecturer had to give instructions on what had to be done with the content. This is what participants had to say about instructions that accompanied the work given to students:

*I used Blackboard as a platform to post all these resources and learning material, which they had to go through before class. (Mr T)*

*I also ask them to prepare a certain part and I think it was reading, watching, watching videos, so it was mainly Blackboard and prescribed textbook. I would give them simple and most basic questions to do and then build on that in the next class. (Mrs M)*

*They read through the textbook themselves and they can now get additional information also from the articles, other books and compare when answering the questions, and then they come to class and we have a two hour discussion (Mr. E).*

It is evident that content or learning material is not just given to students, but that the lecturers make students aware that they need to work through the material in preparation for the next class, so that the students can engage in meaningful discussion.

Literature reports that there are two key components in student engagement, the first is,

*the amount of time and effort students spend on academic activities and other activities that lead to the experiences and outcomes that constitute student success. The second is the ways in which institutions allocate resources and organise learning opportunities and services to induce students to participate in and benefit from such activities (Kuh et al., 2007:9).*

The way the participants “flipped” their classes echoes the view of Kuh et al. (2005) in the second key component of student engagement. The lecturers provided means to allocate useful resources to students, at the same time organising learning opportunities that persuaded students to participate in learning activities and benefit from them.

#### **4.1.4 Students’ responses to the flipped classroom**

Scientifically, for every action there is a reaction. Therefore, it is not surprising that the implementation of the flipped classroom triggered some response in the recipients, in this case, students, during its initial inception. In order for teaching and learning to be effective, the students’ opinions need to be considered. Mr T had this to say about the way his students responded to the flipped classroom:

*From the students, I think they took two to three weeks to really get how we are doing things in my module. I think a lot of them were still used to come to class and they gonna be taught everything that they need to know. So I would say initially, they were kind of like, what is going on and I could see them kind of chatting with one another, so some of the students picked up quite easily and they ran with it and the other students, especially those who missed the first two classes and the introduction, they were like, “what are we doing, what are we supposed to do”. But after two or three weeks it became common practice, so everybody knew there was a video, there is a quiz and what needs to be done before they come to class, after that there was more application and the response from students was quite positive.*

Because the approach was new to students at the rural campus involved in the study, it was expected that students would be confused and take time to adapt to how things work.

Mrs M reported that she could not really provide a single answer about how the students responded, besides reasons like students just being part of the flipped classroom by virtue of doing the module and not having a say or a choice on whether you want to be part of the class or not. She shared her thoughts on the matter:

*They had mixed reactions to be honest, I felt it was not worthwhile to do a full “flip” in introductory courses, because with the students and its on the literature as well and there is a lot of perceived lack of support when it comes to flipped classroom. They really need support because the students are responsible for their own learning and that’s it. Because when I tried a full flip, I sit with overwhelmed students and because they didn’t prepare and I had to threaten them with unprepared tests to use in class, I am going to take homework, but you know it’s a mix in reaction some of them loved it and saw all the benefits, and others were just not for it, and this is the guys that didn’t prepare for the classroom and there is always that risk that they don’t prepare for class and they fall behind.*

Lack of motivation seemed to have played a role in degree of success of the flipped class. It seems that the students did not understand what needed to be done, or they were not properly oriented on this teaching and learning approach, hence, they were overwhelmed and resistant to doing what needed to be done.

Mr E also met some resilience when it came to students transitioning to this mode of teaching and learning. He described his experience as follows:

*Well in the first class I gave them the less difficult stuff and told them that they have to go and study, immediately they were like ‘huh?, what is going on here? because they are so used to the normal kind of teaching, somebody standing in front and you must just sit there and listen kind of thing and suddenly they have to do the work on their own, so there was slight resistance but as soon as the first class discussion happened, they now went and did the work as instructed. In the second semester when I returned to using the traditional way of teaching, they actually came to me and asked what happened to the way they used to be taught. Students even went as far as asking their other lecturers if they can use the approach that Mr E uses to teach because it helps them understand the work better.*

The experiences shared by the lecturers are consistent with the findings of other studies. Siegle (2014:52), for example, found that one of the shortcomings of the flipped classroom is that home pre-class activities were not completed, because

students lacked motivation, and students who lack motivation are always at risk of falling behind, due to their failure to do the necessary preparation prior to attending class. One of the objectives of this study was to explore the attitudes of students towards the flipped classroom and its perceived impact on successful implementation. Understanding the attitudes as well as the “why” of students’ responses will help me to formulate recommendations to cushion the blow that negative attitudes may have on effective teaching and learning.

One of the components of activity theory is division of labour. This means that members of the community each get to play an important part in the achievement of outcomes (Hardman, 2005b:382). If students are made aware from the onset that they also have a responsibility towards their learning, it could curb the extent to which they resist using innovative teaching and learning means.

#### **4.1.5 Facilitating participation in a flipped classroom**

The flipped classroom demands regular communication or interaction between students and lecturers. This interaction, as explained by participant lecturers and presented above, involved giving either study material or instructions on what to do before class and, again, what is expected during class time. So, it was interesting to hear from the participant lecturers how they facilitated students’ participation during all these phases. Mr T had this to say:

*During the pre-class phase one of the techniques I used was that I would use the Blackboard platform to create a quiz. So how it works is that you link the video with the quiz. They can either watch the video on Blackboard or they can download and watch it later. The trick with the quiz was that they could only open it if they watch the video, so in essence you cannot complete the quiz if you have not watched the video.*

Mr T prevented students from just simply copying answers from others by ensuring that they could only complete the quiz once they had played and watched the video. This procedure compelled them to engage with the content (watch the video) before actually completing the quiz. So, by the time they answered the quiz, they actually had knowledge of the content they were being assessed on.

Mrs M opted for surprise tests, because students naturally study when they know they are going to write a test. This is what she had to say:

*Aahhh, I would threaten them with unprepared tests, I told them that you have to do your homework all the time, because you will never know when I am going to take it in for marking or make you write test.*

Unlike Mr T's approach, Mrs M's approach seemed more challenging, because there was no way she could measure if the students actually did the homework. Some students may just be good at remembering facts, and would answer questions based on what they remembered from previous lessons in that particular unit.

Mr E's facilitation method was similar to that of Mr T, though executed differently. He explained,

*I give the students question sets two to three weeks ahead, already then they can go and make notes. They will make either a diagram or sketch diagram or that kind of thing, they can also draw a mind map or they can write out the answer if they feel they already know the full answer. Whatever they did they need to make a copy and hand in before the class starts. I would then mark this, I did not mark it for the correctness, but I marked the planning thereof and gave them points for the effort as motivation.*

Brame (2013) explains that pre-class activities completed by students in a flipped classroom setup serve as evidence that they did, indeed, go through the work. It not only ensures that they are prepared for class, but also assists the students and the instructor to see just how much of the content they understand. Brame continues that pre-class online quizzes give the instructor the opportunity to practice just-in-time teaching, which means that the instructor can prepare the focus areas of the contact time to suit the activities or content that students seemed to struggle with. Automatically graded quizzes also help students immediately see where they struggled and need help.

Even though university students are expected to take some responsibility for their work, there also seems to be a need for lecturers to give them a "push", so that the work is ultimately done. What is common about the participant lecturers' responses is

that each of them tried to make sure that the students came to class prepared for what they were going to discuss during the contact time allocated.

In activity theory, a subject alludes to a person or group of people (collective) who are the most prominent actors in the activity (Holen et al., 2017:28). Students engage in independent learning, where most of the knowledge is gained from individual students, peers have collaboratively their individual understanding amongst themselves (Robinson, 2012:96). This means that students get the opportunity to go through the work in their own time and at a pace that is comfortable for them. This accommodation could be advantageous to them, because they use the best learning styles for them, and which help them understand what they are studying better.

#### **4.1.6 Traditional lecture time in the flipped classroom**

Traditional class time or face-to-face lectures do not necessarily fall away when the the flipped classroom approach is introduced. This time also plays a role in the implementation of the flipped classroom approach, especially when it comes to factoring in student engagement. This is how Mr T made use of his lecture class time:

*We have one 2-hour contact session per week, typically I would stand in front of the class and go through the unit very briefly by making use of slides. But this time around because I assumed they already have fundamental knowledge from completing the pre-class activities, I could immediately jump to the application, so we do revision questions, we engage in class debates. With debates I would pose a question and divide the students into groups, were one group will be for the theory and the other one against it, and they needed to convince each other of the merits. I used groups a lot because I saw that some students struggled with articulation, where they know the answer but cannot say it, so they discuss among themselves and then one member gives the answer.*

Mr T mentioned that, initially, he had implemented the flipped classroom in phases: pre-class, during class and post-class activities. These stages seemed to be structured in a way that constructively builds on student knowledge, from fundamentals to higher-order thinking and skills (e.g., debates). In this way he built up

student knowledge, and expanded the extent to which they engaged with the content, thereby enhancing student engagement.

Mrs M did not go into much detail about the way she spent class time, but I gathered that she also reserved time to explore some of the content in depth, as she had mentioned that she used the flipped classroom for more difficult content. This is what she had to say:

*If you do a full flip then the traditional lecture basically falls away because the students are responsible for reading the material, watching the video but in my class that was not the case, because they are struggling with the counting, I did building elements with the traditional lecture. This I did to eliminate the perceived lack of support just to guide them get familiar with the language of accounting.*

Mrs M used the lecture time to be in contact with the students face-to-face, so that they did not feel alone when they had to do the pre-class activities. She offered them support in that class time by, first, dealing with the basics and making sure the students understood the terminology of accounting, and then she moved on to the more difficult content.

Mr E, like Mr T, favoured reserving class time for discussion. He gives students questions to prepare before class, he gives them time to read in class and then proceeds to asking students to share their answers. He explained how he uses his class time as follows:

*We have got our reading class and a 2 hour discussion class and so, to help the students because I know most of the students do not have English as their first language and some of our textbooks are written in very high English, so we make the reading class the first class, so that they can ask when they don't understand. Remember I gave them question sets before class, so during the reading class they get time to complete the questions they could not answer at home, and I am there to help them, during the discussion class we then go through the questions together as a class.*

It is interesting that the issue of language was mentioned regularly by the participant lecturers. This means that language has a role in ensuring that students understand the content better and it could, thus, influence the level at which students engage with the content.

According to Jonassen and Roher-Murphy (1999:68), activity theory offers a distinct focal point for the analysis of how learning occurs and the results of planning instruction in a certain way. It does not focus on how much information is given, instead, its focus is on the exercises that individuals engage in, the nature of the tools they use in the exercises, the social and other relevant connections among the collaborators in those exercises, the objectives and the intentions behind it and, eventually, the results of those activities.

From the analysis above it is evident that the participant lecturers' teaching activity was not merely to bombard students with information, as is the case with their study guides or textbooks, and then require students to write a test. The aim was to make sure that the students work through the information thoroughly, understand the information, and are, eventually, able to apply it. Activity theory, according to Jonassen and Roher-Murphy (1999), also touches on the requirement that, for an activity to be successful, there needs to be careful planning on how it will be executed. All three participants had a plan of action to effect the flipped classroom – it is not the kind of approach that the lecturer can wake up and say, "TODAY I am going to flip my class". All the participants had a plan prior to execution, and they had decided on the content, tools and the timing for the execution. They did this planning because they wanted their students to gain a better understanding of the information they had been given. Kuh et al. (2007:9) allude to the view that one of the elements of student engagement is the various ways that institutions provide the necessary resources, learning opportunities and services that will persuade students to participate in activities that will benefit them in their studies. From the information I received from the participant lecturers, it is apparent that student engagement was achieved after students were given work to do at home in their own time. After acquiring knowledge at home, students went to class, where the lecturer clarified the content further; eventually, they apply the accumulated knowledge to that if they really understood it. This approach ensures that students come to class well prepared for classroom activities, and it is an

effective way to increase class time for student-centred, active learning (Nanclares & Rodriguez, 2016:2).

#### **4.1.7 Learning environment conducive to a flipped classroom**

The flipped classroom as a teaching and learning approach is not merely an exercise that involves going to class and teaching students. From the information that the participants gave, it is clear a great deal of effort goes into implementing it successfully. The lecturer has to be prepared, and the tools that are to be used must be effective. Most importantly, the students need to be properly guided. When asked what they believe constitutes a conducive learning environment, Mr T had this to say:

*I think the main thing is to be able to use techniques which are applicable to larger classrooms, the smaller classes are ideal because interaction becomes easier. With the larger classes the lecturer will have to be quite creative for it to be a success. Classroom technology becomes important too, it needs to be working at all times, for if I want to show videos or case studies or things like that. And the tools you use need to be applicable to the content you are teaching.*

I believe Mr T considers technology to be important because of the way he decided to execute his flipped classroom. If the technology had failed him, he would not have reached his goal for using the approach.

Mr M shared similar sentiments as Mr T:

*The infrastructure must be proper, lecturer needs to be familiar with the use of technology and there is also a need to consider off-campus students, who may not have internet access.*

Seemingly, technology plays a vital role, even if a lecturer does not rely on it entirely to effect the flipped classroom.

Mr E expressed a great deal of concern about using technology:

*I think firstly it is important that everybody hears everybody! So classroom technology has to be fully functional, especially the mic. Facilitation with small*

*classes is better, but with bigger classes, I usually call my tutors to help facilitate discussions. The trick is having ways to help manage the class during discussions.*

The flipped classroom does not have a manual for its proper implementation – it depends purely on the discretion of the individual using it, though there are those elements that form a sort of “package” when lecturers use it. As literature points out, the flipped classroom makes it possible to extend learning beyond the classroom through technological advances. Direct instruction still maintains its significance, because it is then used for thorough discussions, question-and-answer sessions and assessment (Unruh et al., 2016:40) – this is apparent in all the participant lecturers’ flipped classrooms. Some lecturers did not rely heavily on technology in their execution of the flipped classroom, though they used technology to some degree – even if only to send communication on what needed to be done. The tools component of activity theory is said to be the means by which the subject (students) acts upon the object (flipped classroom) (Hardman, 2005b:380), i.e., the interaction between the two components. Different tools are utilised in the flipped classroom as a means to promote communication and to deliver content to students and facilitate their learning process.

#### **4.1.8 Benefits of the flipped classroom**

Presenting a flipped classroom may seem to involve much more work than traditional teaching methods. It appears to have more expectations on the part of the lecturer as well as expectations of the students. Nevertheless, effort and creativity that is invested in the flipped classroom approach should yield benefits every time. Mr T shared the following benefits with me:

*One of the things that changed after we started using the flipped classroom is students started talking to one another about the content of the module more often, so they were more keen after class, still being in that collaborative mind-set... the in-class discussions encouraged higher-order thinking, where students actually apply the content unlike traditionally where the only time when we check if they know the content is when they write a test or exam.*

Mrs M believed that the flipped classroom gave her students an opportunity to interact and learn from each other. She explained,

*The students actually enjoy active participation, like to discuss things among themselves, which is an element of student engagement actually.*

Mr E believed that the flipped classroom benefited students, not only in his module, but for their entire course schedule. He confessed that he also benefits from it, as it improves his work every year. He said,

*For the students it's for long-term memory, they do so much in the other courses that they forget some of the work along the way, but with this way of teaching they explained that they are able to retain the information longer. For me as a lecturer it also reduces the time that I take to prepare, because now I don't have to constantly update that kind of thing, I can just update the questions. The other bonus is that they may come up with answers which do not appear in the textbook, so I would just add that to my memos so that when I mark I consider those answers as well.*

One significant benefit that is evident from the responses of the lecturer participants is that students continue to work amongst themselves after class or outside the classroom. As literature about activity theory points out, students engage in independent learning, where most of the knowledge they gain is from the collaborations of individual students and peers (Robinson, 2012:96). Mr T and Mrs S mentioned that their students enjoyed interacting with each other and engaging in discussions of the work they had covered in class. This is another level of student engagement, because content discussion is not only preserved for a certain period, or scheduled for a certain time when the lecturer is present in the class – it goes beyond that. Students get a chance to converse in the language they prefer, at a comfortable place, in their own time.

Axelson and Flick (2011:41) state that the definition of student engagement can be reduced to the involvement that students have in their learning process. Furthermore, they argue that, if the time students devote to effective education practices serves as a measurement, institutions need to take cognisance of the responsibility they have to

ensure that they create and sustain high levels of student engagement in their teaching and learning practices. This definition by Axelson and Flick is in line with what the lecturers do: they facilitate the flipped classroom in ways that make students keen to talk about the work outside class. The way in which the flipped classroom is structured makes it easier for students to realise it is more than in-class endeavour.

#### **4.1.9 Challenges confronting the flipped classroom**

The flipped classroom is not without challenges. It may appear to be an ideal teaching and learning approach, which helps students to sail smoothly through their courses, but it does have its hiccups. There is a good and a bad side to everything, and as much as the participant lecturers succeeded with implementation, they also encountered problems. Nevertheless, they were not discouraged from doing the best that they could to help the students acquire knowledge.

Mr T seemed to have done thorough preparations before he introduced the flipped classroom, which rendered him better prepared for it. He expressed his experience as follows:

*Not really, I think it took some effort obviously to get the idea to kind of start off, especially with the design of the videos and that, so there really was no real big challenge. Most of the things I had already anticipated was the technological backbone of the organisation, I thought about how we make it accessible to cell phones. Sometimes students were not able to download the content because the labs are most of the time full. Also students had to be familiar with the way in which I teach the module.*

I believe the main reason Mr T did not encounter many challenges is that he prepared thoroughly. Thorough preparation usually factors in the “what ifs”, so that, when they arise, they do not seem like a problem anymore because, they had already been anticipated.

Mrs M's major challenge was getting students to prepare. Students were used to the traditional way of teaching, which made them reluctant to participate in the new teaching and learning approach she used in her module. She stated that,

*Just getting the students to prepare, just prepare and ensure that they are ready to hear what you are going to teach them. They need to prepare, they need to do traditional on that which they are struggling with. The shortage of textbooks was also a challenge.*

Getting students to prepare will always be a looming shortcoming, which is why being creative is such an important aspect of the implementation of the flipped classroom.

Mr E had trouble getting his students to do what needed to be done. He shared his experience as follows:

*Like usually you have those students that for some reason did not do the work, some would say they were sick and you can see that they don't know anything about what we are talking about and it becomes difficult to include them in the discussions, but it was honestly occasional. And even it works out fantastically with the strikes, because they get the questions a long time before, that way they can still do the work at home.*

Wingate (2007:394) mentions that, when students enrol at higher education institutions, they need to be made aware of the role that they need to play in their learning. They need to understand that they are expected to be independent and take full responsibility for their learning, which basically means that they need to engage actively and critically with knowledge, instead of being just passive recipients of information. Therefore, I believe that, if students are informed from the very beginning of their responsibilities at university; then, when teaching approaches that foster independent learning are introduced, students are not reluctant and do not struggle to participate.

## **4.2 CHAPTER SUMMARY**

In conclusion, this chapter concludes that the main reason for using the flipped classroom is to enhance the level at which students engage with the content of the module. The class time, which participant lecturers deem to be insufficient to cover delivery and discussion of content, is used effectively to induce higher-order thinking and skills through in-class discussions and activities that allow students to be active participants in the learning process. A definite correlation between the flipped

classroom and student engagement was evident in all participants' classes, because students were able to actively participate in the activities prepared for class. Resources used for the flipped classroom varied according to the preference of the lecturer. The lecturer needs to plan properly for a flipped classroom and then decide on the resources that will work best for the lecturer as well as the students. In the initial stages of the flipped classroom, students showed some resistance, which can be attributed to their lack of understanding of this new teaching and learning approach, which requires them to study independently, whereas their expectation was that they would go to class and be taught. This means that students will have to be prepared appropriately before the inception of the flipped classroom approach, so that students are aware of what is expected of them, and why.

Traditional lecture time is still applicable in the flipped classroom; the difference is that it is no longer about the delivery of content, but is more activity oriented. The time is used for in-depth discussion of the content, which enhances higher-order thinking skills. Facilitation of in-class activities also requires proper prior planning, to ensure that discipline is maintained in the class and the goal of having fruitful discussions and activities is reached. An environment conducive to the flipped classroom involves making sure that all the resources that are to be used, either outside or inside the class, are fully functional and convenient, especially for students.

A benefit of the flipped classroom that was observed by participant lecturers was evidence of students continuing to work outside the classroom, which signified independent learning. Class time was used more effectively, during which students were encouraged to be active and participate in their own learning. Among the challenges encountered were student reluctance to participate, students coming to class unprepared and, sometimes, technical glitches.

All the above signify that the flipped classroom needs proper planning and commitment in order for its full benefits to be experienced. The students also need to be prepared in time, before its implementation, so that they understand what the flipped classroom is about.

## **CHAPTER 5: SUMMARY, DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 INTRODUCTION**

This chapter will, firstly, give an overview of the study, and then present a brief discussion of the major findings with regard to each of the research objectives posed in Section 1.4. The major findings will be deduced and linked with a larger body of literature on how the flipped classroom can enrich the extent to which students engage with the content of their studies, and associated with the theoretical framework, to make sense of the findings. Later in the chapter, conclusions will be derived from the major findings. After the conclusion, recommendations will be formulated, based on the major findings.

Scholars agree that student engagement is necessary for the overall success of students in higher education (Axelson & Flick, 2011: 41; Kuh et al., 2007:9; Robinson, 2012:98). These scholars are in agreement that student engagement is fundamental to the successful attainment of learning outcomes and the ability to retain students in higher education institutions. They, furthermore, concur that the rationale for the progressive need to improve student engagement practices in higher education institutions, is not only for students to get good marks, but to enrich their overall experience of learning and to establish efficient and innovative learning communities for both staff and students. According to Coates (2007:122), the term student engagement is quite a broad construct, so this study focused on the aspect of student engagement that refers to the level at which students engage with and spend time on their academic content.

The flipped classroom is defined by Little (2015:265) as inverting the classroom in a sense that traditional class time is reserved for thorough and in-depth discussion of content, while, outside the classroom, students engage in independent learning. Crews and Butterfield (2014:44) and Akin (2016:101) reiterate that the flipped classroom offers students the opportunity to work through the content in their own time and in a way that their intellects permit. The class time is then used efficiently to practise and apply the content in the presence of the lecturer, and to engage in

supportive collaboration with their peers. The authors agree that this teaching and learning approach ensures that learning continues outside the classroom, in the absence of the lecturer or facilitator. Crews and Butterfield (2014:46) report that this student-oriented approach to learning is evidence of a constructivist education system, which, especially if it is strategically combined with adequate training, gives students the opportunity to continuously interact with their educational content.

The aim of the study was to establish how the flipped classroom can be used to enhance student engagement in a first-year class.

The objectives were as follows:

- To describe the rationale for using the flipped classroom;
- To review the nature of a learning environment that is conducive to a flipped classroom;
- To explore the benefits and challenges associated with the flipped classroom; and
- To identify the most suitable resources for effective delivery of a flipped classroom.

## **5.2 SUMMARY OF THE STUDY**

The first chapter provided the structure of the study and briefly outlined the major components of the study. The second chapter comprised an explanation of the theoretical framework chosen for the study (activity theory), and a literature review. The literature review explained a number of concepts, among which student engagement, online learning and the flipped classroom. The study was a qualitative study, thus, Chapter 3 deliberated on the interpretive paradigm and its tenets, case study as research design, data collection technique, sampling, thematic analysis as a data analysis strategy, trustworthiness and ethical considerations of the study. Chapter 4 dealt with the analysis of data through thematic analysis. Data was analysed, and the themes that emerged were discussed. The last chapter of the study will provide a brief discussion of the major findings of the study in relation to the research questions, as well as other interesting findings.

### **5.3 DISCUSSION OF MAJOR FINDINGS**

As indicated in the introduction, this section will discuss the main findings. In doing so, the section will be guided by the research objectives.

#### **5.3.1 Rationale for using the flipped classroom**

In a quest for Universities to adopt innovative teaching and learning methods in their classrooms and still maintain face-to-face contact with the students, there has to be transition into the use of ICT in the classroom. The use of ICT in the classroom in this digital age, should be incorporated in a way that will not confuse or overwhelm students, but still maintain its significance. The findings of this study indicate that one of the key reasons participant lecturers adopted the flipped classroom was to intensify teaching and learning in a meaningful way that would contribute to improving knowledge acquisition. Even at a rural university like the one used in the study, lecturers attest that students attended class well prepared, knowledgeable about the content that was due for discussion that day and, furthermore, prepared to engage in meaningful conversations with the lecturer and their peers. This addresses a concern by Osonkule (2006:73) that lecturers in South Africa face the challenge of positively influencing the quality of learning offered at institutions of learning, in particular, to influence students to engage in continuous learning through incorporation and internalisation of relevant material, and delivering the content through various methods. Therefore, the desire of lecturers to use a wide-range of teaching and learning methods responds to a call for interventions in the delivery of quality education at higher education institutions.

Class time was found to have been efficiently secured for student-centred teaching and learning, which benefits students, because they are not mere passive recipients of information, but are actively involved in the learning process. A study by Akin (2016:106) corroborates these reports by participant lecturers. Akin's research found that, in a flipped classroom, students report learning more productively and effectively during class time, because they are not passively just receiving information. Most of the class time is spent on giving them the chance to receive an active education, in the presence of the lecturer, rather than a theoretical session of information

dissemination. Balzotti and McCool (2016:75) found that students reported having an appreciation for the new productive space in which classroom conversations could take place, and they reported in reflection after class that the whole experience was “enjoyable”.

### **5.3.2 The nature of a learning environment conducive to a flipped classroom**

The study found that a conducive learning environment is required for the smooth implementation of the flipped classroom. Omodan, Kolawole and Fakunle (2017) agree that school and classroom climate significantly enhances students’ academic performance.

We can deduce that technology either serves as a mode of communication, or can be used to disseminate course material during the pre-class phase. Mr T indicated that he does not really rely on technology that much for the pre-class phase; however, the functionality of technology becomes crucial for in-class activities where they conduct discussions and the debate questions have to be displayed for all the students to see. This finding corroborates the findings of Omodan and Odunlami (2017) and Omodan and Tsotetsi (2018) that providing adequate educational materials, motivation and smooth relationships among the classroom practitioners are significant for students’ success and overall productivity. My argument is that students must become aware of what is happening at a particular time during the class.

### **5.3.3 Resources used to implement the flipped classroom**

Resources play a major role in the implementation of the flipped classroom. All the participant lecturers indicated that they used certain resources to create a channel of communication between themselves and the students. These resources also played a significant role in the dissemination of study material and material needed for the pre-class phase of the flipped class, where students were either given activities to do, questions to answer or reading material that would assist them to prepare for in-class activities. The type of resources used differed from lecture to lecture, according to the way each lecturer conceptualised their approach to the flipped classroom.

Bergman and Sams (2012:35) advise that using technology is not compulsory for flipping a classroom; rather, technology should be used if it is appropriate to do so – it is important to ask students, peers and mentors about their preference. They continue that using technology helps intensify interaction between lecturers and students. Technology must, however, not replace the classroom with online instruction, but it should create a meaningful merger of online and face-to-face instruction, to create a “blended” classroom that offers the best of both teaching and learning approaches.

This study also found that resources are not limited to online videos, podcasts, discussion boards, etc. Resources should be chosen on the basis that it can foster student engagement in a way that will allow students to understand the content better and be able to apply it in a real-world context. Results of a study done by Crews and Butterfield (2014:45) illustrates that students in a flipped classroom do not need dramatic administration or radical technical change to yield positive course characteristics. There should, instead, be minor changes that lead to the improvement of learner experiences. It is advisable, during the planning phase of the flipped classroom, to consult students about what will help them engage more with the course material and help them understand it better. Participant lecturers all agreed that the type of resources they used was considerate of the type of students they teach, the infrastructure available, and the type of content that needed to be taught.

#### **5.3.4 Facilitating participation in a flipped classroom**

Facilitating participation in a flipped classroom requires careful consideration of the different phases students are going through. Data offered by participant lecturers reveals that, for each phase, there needs to be a strategy that ensures that students are not left behind, and are active throughout the process. The pre-class phase seems to be the most crucial, because it offsets the critical component, that of student engagement, which lecturers aim to achieve in their classes. A study by Borman (2014), corroborates the above finding. Borman reports that students’ responses show that they appreciated the opportunity they were given to digest the content in their own time, before class, as long as it was completed before the next class. Similarly, Gaughan (2014:232) reports that students engaged more regularly with the primary source material than they had done before the class was flipped. Students mentioned

that they found going to class more pleasant, and they enjoyed contributing to the class discussions and expanding their knowledge (Gaughan, 2014:232).

### **5.3.5 Benefits of the flipped classroom**

According to the findings reported in the previous chapter, a situation that benefited both lecturer and students resulted when the flipped classroom was implemented. Participant lecturers agreed that they were satisfied with the evidence of positive, independent learning. Students did not have to wait until class time to discuss the content, but could continue engaging with the content amongst themselves, outside the classroom. Roehl, Reddy and Shannon (2013:45) found that one of the benefits of the flipped classroom is that it offers students the opportunity to interact freely with the course content, in a learning style they are comfortable with. The structural difference between the flipped classroom and traditional teaching model is that students become aware of and take up a bigger part in their own learning. McCarthy (2016) reiterates that the key benefit of this model is improved comprehension and engagement with the course content, and stronger student-to-student and staff-to-student interaction in class.

### **5.3.6 Challenges facing the flipped classroom**

The common concern of participant lecturers, which indicates a limitation to achieving maximum student engagement, was the reluctance of students to prepare for class. It is difficult to interact with these students and include them in the class discussion if they have not prepared. Their lack of preparation may put other students at a disadvantage, because these students who do not prepare timeously for in-class activities fail to keep up with the content. A study by Blair, Maharaj, Primus (2016:1480) found that engagement with content through practise, problem-solving and peer collaboration is a hallmark of the flipped classroom, subsequent to independent learning. Furthermore, if a student-centred environment is to be accentuated by active learning, then there is a need to encourage students to attend class and participate. Therefore, without buy-in and a willingness to participate by

students, the expected student engagement outcomes will be difficult to accomplish (Roehl et al., 2016:48).

Another pressing challenge is that, if students do not complete the pre-class activities, then the critical in-class activities, which aim to foster student engagement, will suffer (Green, 2015:181). Class attendance by students should, therefore, be marked as a crucial component of the flipped classroom, because it is during this time that in-depth learning is enhanced.

### **5.3.7 Correlation between the flipped classroom and student engagement**

A definite correlation between the flipped classroom and student engagement was realised from the findings of the participant lecturers' responses. Findings relating to this construct reveal that lecturers believe that students learn best when they are given the freedom to study in a manner that suits them, within their own personal spaces. Students were also perceived to come to class better prepared for classroom activities, because they had received study material before class and had had time to engage with it thoroughly. This ensures that active learning takes place in the allocated contact session – more than theory is shared with the students, and students share in building their own knowledge. Students in a study conducted by Ivala, Thiart and Gachago (2015:352) confirm this finding. They found that students found the use of the flipped classroom in curriculum delivery more favourable than traditional lectures with regard to level of enjoyment, problem-solving, routine preparation for lectures and interactive in-class activities, and the challenge of having to find their own answers to homework questions. Logan (2015:7) reports: "What we can learn from this flipped classroom approach is the powerful active teaching in the classroom". Furthermore, a significant feature of the application of the flipped classroom is a heightened level of responsibility: students found themselves progressively taking charge of their own learning.

## **5.4 CONTRIBUTION OF THE STUDY**

The findings in this study are appropriate at a time like this, during the emergence of the 4th industrial revolution, in which technology will play a vital role in almost

everything that we do. There will, thus, be a need in the education sector to advance teaching and learning methods, towards more innovative ways that will reflect the transition to the 4th industrial revolution. Findings in this study confirm that of previous studies on the implementation of the flipped classroom. The adoption of activity theory as a theoretical framework raises questions about the ideal way to enhance student engagement using the flipped classroom approach. According to activity theory, the object (which, in the case of this study, is the flipped classroom) is illustrated by a circle in the activity system. This is where the element of fostering student engagement can be phased in, since this represents an area where adjustments can be made to improve the way the flipped classroom is implemented.

During this study's data collection stage, I was confronted by the challenge of persuading lecturers to participate in the study. Few lecturers at this rural campus used the flipped classroom – some did not even know what it is. This finding demonstrates the need for higher education institutions to start developing staff on alternative, innovative teaching and learning trends. I believe that, when academic staff of this rural campus, as well as those of other rural campuses, read this study, they will understand that there is no secret formula for using the flipped classroom. Their reluctance to apply the approach may be due to a fear of using technology, however, findings of this study indicate that technology can be used minimally, according to the way the activities are structured. The views shared by the participant lecturers in this study will provide a sense of clarity and relief to those who have been hesitant to try new methods of teaching.

## **5.5 CONCLUSIONS**

The findings of this study suggest that the potential to enhance student engagement through the flipped classroom is good. Participant lecturers opted to use the flipped classroom because of a need to use the allocated lecture time effectively. The motivation for using innovative teaching and learning methods was brought about by the need for higher education institutions to produce students who will be able to compete at global levels and make valuable contributions as 21<sup>st</sup> century students (Miles & Foggett, 2016:3). The rationale of the participant lecturers to use the flipped

classroom was predominantly to ensure that students engage with the course content and are able to apply it in real-life situations.

The nature of the flipped classroom seems to align itself with the definition of student engagement suggested by Axelson and Flick (2011: 41), who believe that the definition of student engagement can be narrowed down to the way students are involved in their learning process. They argue that, if engagement is measured according to the time that students devote to effective educational practices, then there should be a natural urge to determine what can be done to bring about more ways that will foster students to engage with the content of their academic work. The flipped classroom was found to foster student engagement through independent learning in its pre-class phase, during which students are expected study or read through course material thoroughly in preparation for interactive activities in class.

The type of resources used in the flipped classroom differ according to lecturer preference. The use of technology played a significant role, especially with regard to communication between the lecturer and the students. The initial response of students to this “new” teaching and learning approach indicated reluctance regarding adaptation, though, with persistence and through the patience of participant lecturers, students eventually warmed up and started participating. Proper facilitation of pre-class activities and dissemination of information led to fruitful class discussions and active participation by students.

Traditional lecture time is transformed into a stimulating, interactive environment between the lecturer, students and peers, instead of a lecture-centred, one way impartation of information by the lecturer. The nature of a definitive conducive environment for a flipped classroom could not be deduced, instead, it was established from participant lecturers that whatever a lecturer does needs to cater for the student community that they serve. Cognisance should be taken of factors, such as time frames, types of activities, the technology availability and how it is used, and access to resources. Resources should be easily accessible by the students, and planned activities should align with the resources to be used.

Benefits of the flipped classroom centred mostly on the ability of students to engage in independent learning and being part of the learning process. Student collaboration

and peer learning were also identified by the participant lecturers. Challenges were inevitable. Issues such as student resistance, failure of technology and lack of student participation were some of the hurdles that hampered optimal student engagement in the flipped classroom.

The model in Figure 5.1 gives a visual depiction of a subject-object system, interceded by interlinking items, division of labour and rules. It is used to conceptualise the level of activity within the system, or to analyse a single system or connections between several items. The analysis usually focuses on inconsistencies and relationships that unfold between elements of the system, which may support or challenge each other. Inconsistencies are interpreted as drivers of change: they emerge as a result of challenges that people come across and need to address, and fluctuating levels of success, thus, altering the associated elements of a collective system (Bligh & Flood, 2017:130).

The relationship between the subject (students and lecturers) and object (flipped classroom) is mediated by mediating artefacts (various technological and non-technological tools, which facilitate interactions between subjects), rules (for instance, instructions given by the lecturer to students on what is expected of them in each phase of the flipped classroom), community (entities involved in the execution of the flipped classroom at any stage, e.g., students, lecturers, facilitators, tutors and the learning management system), and division of labour (activities/structure, as outlined in the planning of the flipped classroom by the lecturer). The main focus in an activity system is the outcome (measured by subjects to determine if the desired outcome has been reached). This area is illustrated by a circle, because this is where alterations are made, based on perceptions of whether the outcome had been achieved. If the outcome had not been achieved, subjects can review the flow of the activity and make the necessary changes in order to achieve the desired outcome. This area is crucial for attaining student engagement, because the lecturer needs to address challenges that may have impacted on the smooth running of the flipped classroom, and may have disengaged students.

Figure 5.1 depicts an activity system, adapted from Hardman (2005b:360), to summarise the flow of the entities involved in this study.

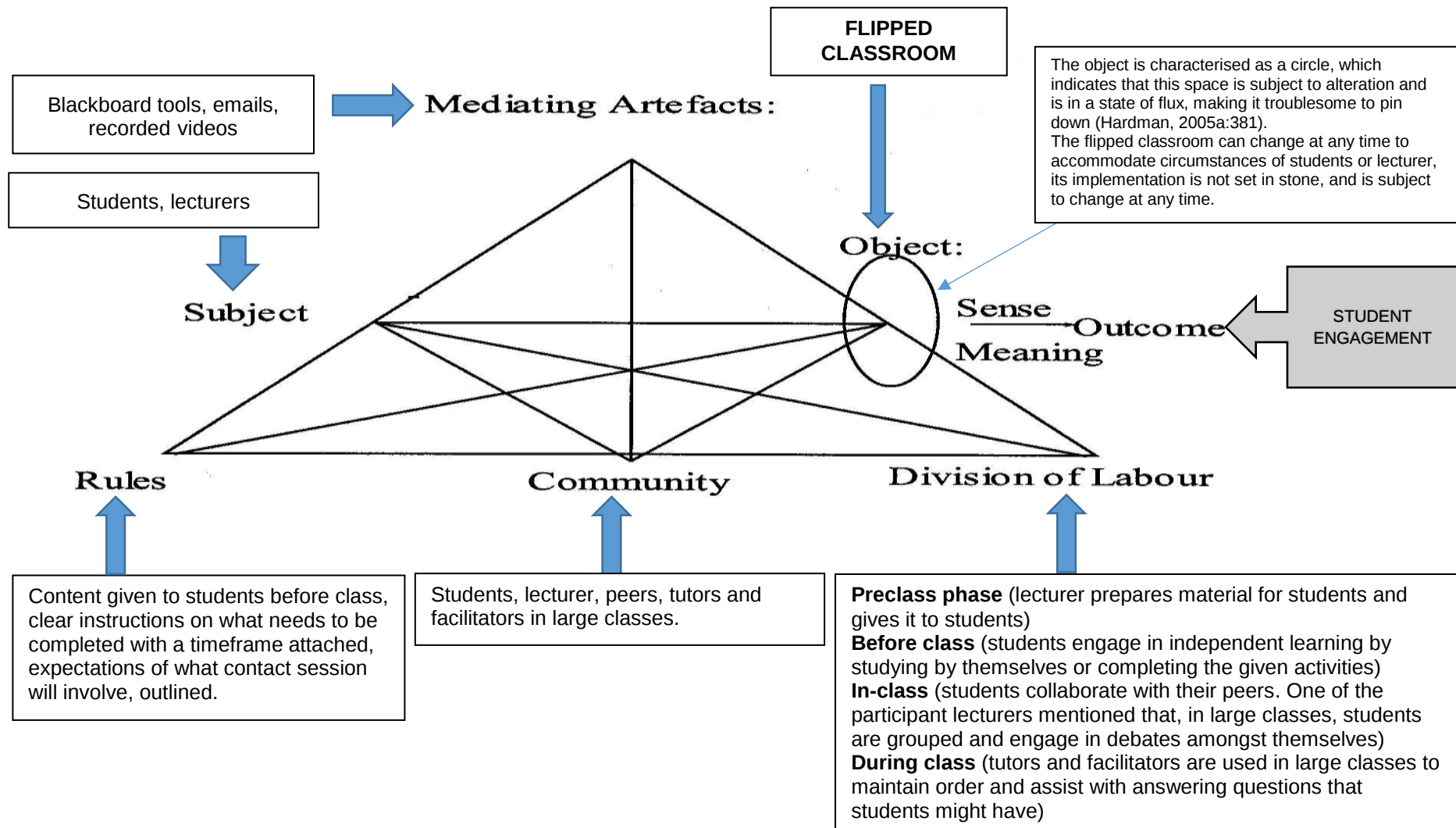


Figure 5.1: Activity system, adapted from Hardman (2505a:360)

## **5.6 RECOMMENDATIONS**

### **5.6.1 Staff development**

In my quest to collect data at the rural campus under study, I was faced with the challenge of finding lecturers who actually use the flipped classroom in their courses. Most of the lecturers did not even know what the flipped classroom is. I recommend that universities educate and develop their academic staff members on innovative alternatives to face-to-face teaching and learning. They should conduct workshops that will provide academics with the expertise to use teaching and learning methods that involve students and the learning process, and not just feed them facts. We live in a digital age, and we cannot shy away from using technology. In the 4<sup>th</sup> industrial revolution, technology should be exploited and experimented with in order to bring about best practices for students.

### **5.6.2 Review of policies**

Institutions should revise their policies to incorporate the use of alternative methods of teaching and learning, so that, then when situations such as protests and unplanned interruptions to teaching and learning arise, there would not be a state of panic. If a term or a semester is institutionally dedicated to explicitly using these alternative methods under normal circumstances, then, at least, challenges would be addressed timeously and practices improved. Then, students and lecturers would not be frustrated when they find themselves having to continue with education while physically separated.

### **5.6.3. Student access to technology**

Another recommendation is that institutions employ a bottom-up approach when it comes to the technology infrastructure. The infrastructure should be conducive to teaching and learning, user friendly and easily accessible for students. The idea to zero-rate applications and websites (i.e. make applications that students use for learning not consume data at all) that students use only arose during the crisis of the nation-wide lockdown, and giving students data only came into play in the lockdown. I

believe applications and websites that students use for teaching should be available and free to access all the time, as it will assist students who live off-campus and do not have access to the university's Wi-Fi facility. If they have access to the internet when they are off-campus, they do not have to wait until they are on campus to complete their work.

### **5.6.3 Student training**

One of the findings of the study relates to the hesitance of students to participate in the flipped classroom, which could be attributed to students lacking clarity on what needs to be done, when, how and, in particular, why it is being done. Training for students is essential when a new teaching and learning approach is introduced, to prevent students being left behind because they were "lost" at the beginning. Training will also save tuition time, as the lecturer will not have to keep repeating content to accommodate those who fall behind.

## **5.7 RECOMMENDATIONS FOR FURTHER RESEARCH**

A recommendation for further research is to determine why lecturers are reluctant to use innovative teaching and learning methods. There should also be a probe into how students who are not comfortable with technology can be accommodated, without having to replace a teaching and learning method completely. Another field that could be explored is the effect of peer learning and collaboration on helping students cope in a flipped classroom, and how can this work to the advantage of the lecturer, by facilitating classes without the need for tutors and facilitators. A comparative study could be undertaken to investigate differences between students' and lecturers' views, and how these differences can be consolidated to bring about best practices regarding teaching and learning, to the benefit of both parties. With time and effort, much more can be done to offer students the best possible learning experience.

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## APPENDIX A



Faculty of Education

05-Dec-2018

Dear Ms Hadio Mosia

**Ethics Clearance: Enhancing student engagement of a first-year class through the flipped classroom approach**

Principal Investigator: Ms Hadio Mosia

Department: School of Education Department (Bloemfontein Campus)

### APPLICATION APPROVED

With reference to your application for ethical clearance with the Faculty of Education, I am pleased to inform you on behalf of the Ethics Board of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2018/1609**

This ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours faithfully

Prof. MM Mokhele Makgalwa  
Chairperson: Ethics Committee

Education Ethics Committee

Office of the Dean: Education

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## APPENDIX B



**If you agree to participate in the study please complete the attached the consent form**

**Study title:** *Enhancing student engagement of a first-year class through the flipped classroom approach*

### CONSENT TO PARTICIPATE IN THIS STUDY

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

I have read (or had explained to me) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable). I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I agree to the recording of the *insert specific data collection method*.

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

Full Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name(s) of Researcher(s): \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_



## **APPENDIX C**

**Topic: Enhancing student engagement of a first-year class through the flipped classroom approach.**

Interview schedule

1. What was your rationale in using the flipped classroom?
2. Do you think that there is any correlation between student engagement and the use of the flipped classroom approach?
3. What kind of resources did you use in the implementation of the flipped classroom?
4. How were these resources used?
5. How did you choose these resources?
6. Were the resources readily available?
7. Was any training required in using the resources?
8. What was the initial response from your students in using the flipped classroom?
9. How did you facilitate participation in the flipped classroom?
10. The flipped classroom is a combination of technology and human intervention. Apart from yourself and the students, were there any other stakeholders involved in the implementation of the flipped classroom?
11. So what happens with the traditional lecture time that students are used to, when using the flipped classroom?
12. What would you say is a conducive learning environment for a flipped classroom?
13. Are there any benefits of the flipped class attached to the student community?
14. Were there any challenges encountered from your side as the lecturer in the implementation?

## APPENDIX D

### Declaration

8 July 2020

Hester Sophia Human  
PO Box 4  
Otjiwarongo  
Namibia

Student: Hadio Rose Motaung

Thesis: Enhancing student engagement of a first-year class through the flipped classroom approach

I confirm that I edited this thesis, checked the references, and made recommendations for changes to the text.



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## APPENDIX E

# Dissertation

by Hadio Motaung

Submission date: 26-Jun-2020 01:16AM (UTC+0200)

Submission ID: 1095944951

File name: Final\_dissertation..docx (834.54K)

Word count: 28147

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## Dissertation

### ORIGINALITY REPORT

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