UNIVERSITY OF KWAZULU-NATAL

AN EVALUATION OF THE USE OF ONLINE RESOURCES IN THE TEACHING AND LEARNING OF CURRICULUM CONTEXT AND CHANGE MODULE: A CASE STUDY AT A HIGHER EDUCATION INSTITUTION IN SOUTH AFRICA

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ABSTRACT

Internationally governments have recognised the pertinent role education holds in achieving economic growth and competitiveness. Information and communication technology (ICT) have become a catalyst for educational transformation in the last century, and higher education institutions have developed a strong incline towards this move. It is within this context that tertiary institutions have expanded their teaching and learning pedagogies by providing greater access to computers and internet facilities. Implementation of innovative teaching methods is important in higher education courses to involve and motivate the newer tech-savvy generation of students. However, many lecturers have been hesitant to welcome this change due to inadequate salary structures and insufficient training and expertise in using online resources as a pedagogical approach in higher education.

The purpose of this study evaluated the use of online resources in the teaching and learning of the Curriculum Context and Change module at a university in Durban, South Africa. The institution at which this study took place utilizes modern technologies that can support the use of online resources in the various areas of disciplines. Despite these technological advancements many facilitators have experienced serious challenges in effectively using online resources as a tool for teaching. Therefore this study sought to develop an understanding of the facilitator's and students' experiences into the benefits and challenges encountered by implementing online resources in their current practise. This supported the need to draw implications and possible recommendations for applying online teaching and learning in similar contexts at higher education.

The study adopted a qualitative research design and followed a case study methodology. It applied qualitative data generation methods inclusive of semi-structured individual interviews, focus group interviews, and lecture observations, document/online learning space analysis and an online reflection. The purposive sampling method was selected to include thirty five students and one facilitator of the Curriculum Context and Change module. Participants were also selected on the basis of convenience sampling. Eleven students participated in the focus group interview, and of these, five volunteered to share their experiences in the individual interviews. The study followed guided analysis based on the theoretical frameworks of Activity Theory and the Spider Web Curriculum to support the interpretations and analysis articulated thereof.

The findings revealed that there were potentially more benefits than challenges experienced in the use of online resources in the teaching and learning of the module. The most prominent features of implementing the use of online resources were greater participation of students; work and study were combined to save time and ensure completion of tasks; peer involvement;

immense interaction between students themselves, and between the facilitator and students; independent learning led to richer experience; informed practise as educators; more accessibility and saving costs; and achievement of learning outcomes of the module. Challenges experienced in the utilization of online teaching and learning resources were of a technical nature. In some instances students were diverting from the online learning activities to social networking sites thereby shifting their attention from the tasks at hand. Although the research identified possible problems that can incur in an online learning platform, they were minimal in comparison to the benefits because the facilitator was careful to use hard-ware resources (HW) and soft-ware (SW) resources in co-ordination with ideological-ware (IW) resources. The study therefore proposes that since the potential benefits significantly outweighed the challenges, the use of online resources is highly recommended in teaching and learning at higher education if they are supported by concrete IW resources.

DEDICATION

To my Lord and Saviour Jesus Christ

None of this would have been possible without You

I wish to express my sincere gratitude and thanksgiving to the Father, Son and Holy Spirit. To You belong all the praise, glory and honour, now and always. Thank You for the love and support throughout this process. I have achieved this only because of the wisdom and knowledge You have imparted unto me. I believe You have purposely sent the right people into my life to make this achievement possible. Undoubtedly, it was You who ordered my steps and equipped me with supernatural strength and power to persevere through the tough times. Above all, my gratitude extends to You dear Lord for reminding me to obtain a humble, yet discerning spirit at all times. Words are indeed too few to articulate how valuable You are to me.

Proverbs 2: 6-7 "For the Lord gives wisdom, from His mouth come knowledge and understanding; He stores up sound wisdom for the upright; He is a shield to those who walk uprightly."

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DECLARATION

I, Ramona Budden, declare that this dissertation is my own original work, and where the work of other scholars / researchers has been used, they have been duly acknowledged. I declare that this thesis has not been previously submitted for any degree in any university.

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RESEARCHER **DATE**

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SUPERVISOR **DATE**

2013

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CHAPTER ONE
INTRODUCTION

1.1 INTRODUCTION

Internationally, governments have recognised the pertinent role education holds in achieving economic growth and competitiveness. Information and communication technology (ICT) have become a catalyst for educational transformation in the last century, and higher education institutions have developed a strong incline towards this move (Bonk, 2001). It is within this context that tertiary institutions have expanded their teaching and learning pedagogies by providing greater access to computers and internet facilities. Access to the internet has revolutionised the process of teaching and learning into new hemispheres of online education (Darries, 2004). Implementation of innovative teaching methods is important in higher education courses to involve and motivate the newer tech-savvy era of students (Burke, Snyder & Rager, 2009). Online education includes a range of online resources used to facilitate the process of online learning such as search engines, electronic libraries, e-journals, online class tools, discussion forums, student/instructor profiles and online assessment (Bonk, 2001)

Despite the technological advancements that have influenced teaching pedagogies at universities, many facilitators have experienced serious challenges when attempting to effectively use online resources as a tool for teaching. Due to time constraints, lecturers' struggle to learn the new vocabulary, policies and structures for course content associated with online learning facilities (Khoza, 2011). A lack of pedagogical tools for an online support system has contributed to the inadequate use of online resources, thereby discouraging facilitators and students in efficiently applying online learning (Bonk, 2006). In addition, higher education institutions cannot afford to pay educational technology lecturers their desired salaries (Khoza, 2011). Given the challenges that threaten the sufficient use of online resources in teaching and learning, higher education institutions have welcomed the move of a tech-savvy generation geared for online learning.

1.2 BACKGROUND

Initially online learning programs were created to accommodate the learning needs of distance education students; defined as learning experiences separated by space or time (Bolliger & Wasilik, 2009). This relationship has further been extended to combine online learning with face-to-face instruction, often referred to as 'blended learning' (Yuen, 2011). Universities all over the world have adopted this trend of a blended approach, thereby creating greater accessibility for

students and facilitators to accustom themselves with. As a consequence of the developments of technology in education, the nature of learning and the acquisition of knowledge are changing due to the teaching and learning tools that have influenced this process (Tutkun, 2011).

1.2.1 RESEARCH PROBLEM

The field of education has experienced rapid transformation with the development of information and communication technologies (ICT) during the 21st century. Internationally, governments have recognised the pertinent role online teaching and learning holds in creating better accessibility and learning opportunities for students (Tutkun, 2011). The South African government has welcomed this change by instituting a policy on transforming teaching and learning through ICT developments (Department of Education and Training, 2004). Despite this move many lecturers have been limited in their response to this initiative. This is due to insufficient salary structures supporting educational technologists, time constraints in learning new vocabulary, policies and structures for course content, and a lack of pedagogical tools and online support (Bonk, 2006; Khoza, 2011).

These challenges suggest that as much as universities are interested in the utilisation of online teaching and learning resources, they should first conduct studies that can guide the utilisation of these resources before they can cause a lot of damage. In light of these, the researcher sought to develop an understanding and analysis about using online teaching and learning in the Curriculum Context and Change module to support facilitators in revising their pedagogical practises in an online avenue. Therefore, this study hopes to inform similar contexts to implement teaching and learning strategies that can meet the needs of a digitally inclined generation of students. Perhaps universities can find ways in which to create better salary measures for facilitators with the money that can be saved from using an online teaching and learning platform.

1.3 OBJECTIVES OF THE STUDY

- Identify and explain what online resources are being used by facilitators and students in the Curriculum Context and Change module.
- Explain how facilitators and students use online resources in the teaching and learning of Curriculum Context and Change module.
- Explore the reasons why the uses of online resources are being implemented in the Curriculum Context and Change module in this manner.

1.4 RESEARCH QUESTIONS

1. What online resources are being used by facilitators and students in the teaching and learning of Curriculum Context and Change module?
2. How do facilitators and students use online resources in the teaching and learning of Curriculum Context and Change module?
3. Why do facilitators and students use online resources the way they do in the Curriculum Context and Change module?

1.4.1 CONCEPTS

- ***Curriculum Context and Change Module***

This is a module undertaken at a higher education institution through certain modules that are related to: Curriculum planning, designing, developing, practising, changing, assessing and implementing. The module is taken either on a full-time basis (one year) or part-time (two years). The module deals with curriculum issues as they are central to an educational system. These relate to teaching methodologies, learning material that constitutes a curriculum, the economic, social and political imperatives that inform curriculum developments, changes in education, paradigms of viewing curriculum, and the ideology surrounding education.

- ***Online learning***

Online learning may be defined as “a structured learning activity that utilises technology with internet-based tools and resources as the delivery method for instruction, assessment, and communication” (Michigan Department of Education, 2006). Rutishauser and Chappelle (2006) extend this definition to incorporate the interaction between the computer and student to advanced interaction between student and instructor, mediated by computer technologies.

- ***Information and Communications Technology (ICT)***

Information and communications technology (ICT) is used as a pedagogical tool in teaching and learning at higher education institutions, to accommodate the needs of technologically inclined students (Mostert & Quinn, 2009). ICT includes computer-based and online tools and resources that are used to generate online learning.

1.5 RESEARCH PARADIGM

The interpretive paradigm was selected to underpin the assumptions of the study (outlined in the ‘purpose of the study’). In this paradigm the aim of educational research is to understand the meaning behind human behaviour, which is part of the social and cultural context in which they occur (Kim, 2003). A researcher employing an interpretive approach is concerned with understanding the meanings derived from empirical observations. Symbolically the role of the

researcher is to understand, explain and demystify social reality through multiple interpretations that vary, whereby results are created and not found (Mack, 2010). Studies in this field are distinctive and cannot be generalised which can be applied to a case study style of research (Christiansen, Bertram & Land, 2010). Subsequently the epistemology associated with this paradigm describes knowledge as achieved through personal experience in a particular situation (Mack, 2010).

The interpretive paradigm is relevant for the study at hand because it investigated the experiences of lecturers and students that differed from one another, but most certainly added their own unique response to the study.

1.6 LITERATURE REVIEW

The field of education has experienced rapid transformation with the development of information and communication technologies (ICT) during the 21st century. Deemed as the era of 'knowledge revolution', all members of society have been influenced by this wave of electronic literacy, informatics and communication technologies, whilst attaining the necessary knowledge and skills to use these efficiently (Tutkun, 2011). Online education can be described as the interaction between the computer and student, to advanced interaction between the student and facilitator, mediated by computer technology (Rutishauser-Chappelle, 2007). Curran (2004) elaborates on this definition by suggesting the involvement of learning materials through the internet or other computer networks (p.1). Symbolically the internet, a charismatic feature of the information age, has not only catapulted technology to a higher level of accessibility, but has become cheaper and faster; fostering new pedagogies of teaching and learning (Bates, Hardy & Mckain, 2008). Globally, governments have recognised the stringent position education holds in achieving economic growth and competitiveness (Bennet, Agostinho, Lockyer & Harper, 2006). Through policies and forums, governments have become instrumental in their stance towards innovation of teaching strategies that encourages online instruction (Bennett *et al*, 2006). Consequently higher education institutions have succumbed to pedagogical changes in teaching and learning, by embracing the advancement of online education (Yuen, 2011).

Despite the pedagogical advancement to online learning, institutions of higher education have been fraught with problems relating to this assimilation. According to Khoza (2011) universities cannot afford to pay suitable educational technology lecturers their desired salaries. Bonk (2006) also confirms this problem in his research study. In addition problems relating to time constraints in learning new vocabulary, policies and structures for course content emerged in the literature (Khoza, 2011). Lack of pedagogical tools and online support surfaced in the data, discouraging lecturers to accustom themselves with efficiently applying online learning (Bonk, 2006 & Khoza,

2011). These challenges suggest that as much as universities are interested in the utilisation of online teaching and learning resources they should first conduct studies that can guide the implementation of these resources before they can cause damage.

Initially, online learning programs were instituted to accommodate the learning needs of distance education students; defined as learning experiences separated by space or time (Bolliger & Wasilik, 2009). This relationship has further been extended to combine online learning with face-to-face instruction, often referred to as 'blended learning' (Yuen, 2011). Universities all over the world have adopted this trend of a blended approach, thereby creating greater accessibility for students. The purpose of this study is not to investigate a blended learning approach or tackle the dichotomies of distance education, but to consider it in providing a context for examining the use of online resources in teaching and learning at higher education, particularly in the area of curriculum studies.

1.6.1 What online resources are used by facilitators and students in teaching and learning?

There is a vast amount of literature that seeks to describe and evaluate the use of online resources in teaching and learning within higher education institutions. Perpetual developments and changes in information technologies have become globally accepted as the most starling feature of the information age (Tutkun, 2011). Access to the internet has revolutionised the process of teaching and learning into new hemispheres of online education (Darries, 2004). Implementation of innovative teaching methods is important in higher education courses to involve and motivate the newer tech-savvy era of students (Burke, Snyder & Rager, 2009). According to Curran (2004), it is an imperative upon university instructors to conform to the learning styles and attention span of web connected learners, by not only delivering relevant education but also employing effective strategies integral to the learning environment. These pedagogies include a range of online resources described by Bonk (2001), such as online class tool that are syllabus posting, online lecture notes, e-learning databases, self-testing, quizzes, problem questions or problems, downloading file tools, classroom materials, and case questions. Bonk (2001) further categorises collaboration and sharing tools into instructor collaboration, discussion forums, real-time chats, interactive feedback, student/instructor profiles, test-making collaboration and online tasks. In addition other web resources commonly accessed are search engines, electronic libraries, related soft-ware, journal links, book recommendations and web link tools (Sahin, Balta & Ercan, 2010).

The delivery platform for online courses is an important consideration in determining the teaching and learning experience. A web-based or courseware system, such as the internet, is used to

develop online courses with online features identified above (Bonk, 2001). As stated earlier the internet has become a significant source of information in universities internationally. It is a relatively accessible source of information retrieval for support within higher education (Darries, 2004). This accessibility has led to the benefit of internet usage in almost any location and at any time (Sahin *et al*, 2010). Instructors and students are stimulated by the need to become computer literate in the endeavour of increasing knowledge of communications technologies (Tutkun, 2011). This may enhance their skills of conducting research on the internet and to effectively use online resources for their educational interests. A significant study undertaken by Tutkun (2011) involving internet access and use concludes that the level of knowledge retrieved by students from the internet is high. More than 82% of the participants in the study confirm this report, and further acknowledge the internet as an indispensible part of daily life.

Through the internet, search engines are open access sites that are increasingly used as resources for students to gather information for their projects (Sahin *et al*, 2010). Through internet programs, search engines such as Google have created greater accessibility to widespread information that instructors and students frequently use (Amory, 2006). In a research explored by Adegbore (2011), 95% of students at a private university were frequent users of search engines. It provides a quick and easy gateway to educational information that students require for assignments, projects, tests, presentation and other course work. While search engines have gained favourable attention among students of higher education, they have also become an extremely useful teaching tool for instructors (Bennett, Agostinho, Lockyer & Harper, 2006).

In a comprehensive study concerning online learning experiences, obstacles and preferences of college instructors Bonk (2001) identifies the resources, tools, and activities adopted in web-based teaching efforts. The research involved 222 participants of whom 85% were engaged in posting syllabi online. Over 70% of the respondents used file uploading and downloading, while online lecture notes were utilised by 69%. The study also found certain collaborative tools, such as discussion forums, were a common area of interest. Instructors were further involved in other online activities such as online simulations, data analyses and tools for providing feedback to students. Adegbore (2011) extends the platform for online resources to include a host of what he terms as ‘e-resources’; a concept commonly used in other literature in the field. E-resources are journals, data archives, research reports, instructional audio tapes, electronic databases, theses, books and maps. Research indicates that e-journals are the most used among the variety of electronic resources. Examples of e-journals are Springer Link, Eric and JSTOR. Bonk (2001) discovered that 74% of the participants in the study expressed links to e-journals in their teaching.

Discussion forums and blogs emerged as a growing trend in the literature surrounding the use of online resources (Farmer, Yue & Brooks, 2008). These online resources are noted for soliciting communication between the lecturer and student, and between fellow students. Discussion forums are viewed as a panacea for educational pedagogy in online learning (Corich, Kinshuk & Hunt, 2004). It enables online course participants to collaborate, debate, share ideas and discuss course material (Harris & Sandor, 2007). The principles of discussion forum are synonymous with Vygotsky's theory of social activity which highly regards the interactions between people, thus encouraging collaboration among learners. Relatively speaking, blogs are used to archive and publish course work by instructors that students retrieve (Downes, 2004). Students use blogs to link with other students. Blog posts are short and informal; often characterised by a personal style of a particular course. Instructors use this method of teaching to organise class discussions and seminars to provide summaries of readings.

Within the last decade, social media has exploded into an unprecedented wave of communication, with levels of interaction continually rising (Leitch, 2011). Social media refers to the use of web-based and mobile technologies to turn communication into interactive dialogue (Wagner, 2011). Social networking systems such as Facebook and Twitter have not only provided greater access of interaction between family and friends, but have become a transformative pedagogical tool in many higher education institutions (Leitch, 2011). According to Leitch (2011) a study undertaken at Deakin University revealed a staggering 7525 students registered on the institutions Facebook page in 2011. The findings suggest that students were interested in using social soft-ware within their learning environment as it produced levels of motivation, affective learning, and a positive classroom atmosphere. Through a Deakin Studies Online (DSO) program students could access online discussion forums through soft-ware such as the DSO Blackboard and WebCT, to communicate with the lecturer and other students (Leitch, 2011).

Students aspire to the influences of the 'modern' world that are governed by technological innovations such as Facebook and Twitter (Wagner, 2011). It therefore becomes an imperative upon universities to succumb to these methods of interaction to ensure student participation. In a study concerning social networking between an athletic training instructor and athletic training students, Wagner (2011) suggests that Twitter and Facebook have become a necessity in connecting with students. The study showed that Twitter has been used to convey students' comments on athletic skills developed during training to inform others, initiate quizzes, post tweets on professional literature and to provide a reflection in a daily journal through tweets on time spent in their clinical settings.

Given the substantial benefits Facebook and Twitter have to offer, universities have experienced difficulties in efficiently utilising them. Tertiary environments tend to create their own versions of each of these tools instead of using ones that are commonly used; consequently, universities replace the convenience of using tools that students are familiar with (Leitch, 2011). This leads to students unsuccessfully accessing these sites. As learning technologies become more accessible, students may tend to feel isolated due to lack of personal contact with the facilitator and fellow students. Problems relating to online contact time as per schedule, lack of internet facility at home, and technical difficulties experienced with online support can become discouraging (Leitch, 2011). This could result in students not logging onto a university's Facebook or Twitter.

In recent years the use of videos in teaching at higher education institutions has become popular. The mannerism of educating at this level is such that 'screen literacy', 'visuality' and 'fluency' captures the attention of students (Copyright Clearance Centre and Intelligent Television, 2009). Higher education instructors have to ensure the pursuit of effective strategies of teaching that match the demands of a tech-driven generation to enhance the learning situation. Developments in technology, such as the YouTube video-sharing web-site, have explored new channels of online instruction that has achieved a sense of classroom community and better learning outcomes. In a study outlined by Burke, Snyder and Rager (2009), almost half of the respondents involved in the research revealed the use of YouTube in their courses. The respondents indicated their delight in viewing real-life examples and visual demonstrations of the topics and concepts covered in class, believed to foster critical thinking and informative discussions. Despite the positive aspiration towards the use of YouTube in online learning, some negative aspects were outlined by the participants in the study. These relate to time constraints in finding appropriate videos, diagnosis in connection problems to the site, and the credibility and validity of some of the YouTube videos. In as much as video resources are desired in online teaching, it is not sufficiently integrated into the pedagogical practises of instructors (Copyright Clearance Centre and Intelligent Television, 2009).

1.7 THEORETICAL FRAMEWORK

The theoretical framework of a research study relates to the philosophical basis on which the research takes place, and forms the link between the theoretical aspects and practical component of the study conducted (Sinclair, 2007). Thus, at the point of departure to any research study, it is imperative to consider the relevant theory underpinning the knowledge base of the phenomenon to be investigated. A theoretical framework also highlights the main research question (hypothesis) of a study, line of inquiry and methodology determining the research

(Ocholla & Le Roux, 2011). The purpose of this study explored the use of online resources in the teaching and learning of Curriculum Context and Change module using the theoretical framework of Cultural Historical Activity Theory (CHAT) or Activity Theory (AT) in providing an analysis. CHAT has been employed as a theoretical framework in the design and development of technology-enhanced courses (Amory, 2006), relative for the study at hand. Online learning has become an important aspect of teaching and learning within higher education institutions, however this process of implementation has not been an easy one. Challenges relating to online support structures, adaptation to new technologies, lack of training in the field, and insufficient provision of finances have become an ever-pressing need for universities to overcome (Bonk & Kim, 2006). Therefore, CHAT has been used to investigate the experiences of instructors and students in using online resources and their implementation of this in teaching and learning.

Activity theory is a conceptual design framework for community-based learning activities, and is built on the work of Russian psychologist Lev Vygotsky. Activity theory has been expanded into Cultural Historical Activity Theory, developed by Leont'ev (1981) (Nardi, 1996). The object of activity theory is to understand the unity of consciousness and activity that incorporates strong ideas of intentionality, history, mediation, collaboration and development (Nardi, 1996).

Central to the tenets of activity theory is the principle of tool mediation which describes human activity as driven towards an overall goal (object) and oriented by the use of tool (e.g. instruments or devices) (Wang, 2008). The initial relationship between subject-object-tool derived by Vygotsky (1933/1978) (Leont'ev, 1978 cited in Amory, 2006) has been expanded to accommodate rules, community and division of labour, designed by Engestrom (1987) (Karasavvidis, 2008). Wang (2008) confirms this ideology by way of a hierarchical structure of an activity system which includes the five major components of subject, object, tools, rules and roles. Karasavvidis (2008) acknowledges her activity system involves the community and distribution of labour. The subject is a participant or a group of participants engaged in the activity and the object refers to the goal to be achieved (Wang, 2008). Ryder (2008) poignantly expresses these sentiments by stating that an activity takes place when a human agent (subject) is motivated toward the solution of a problem or purpose (object), and is mediated by tools (artifacts) in accordance with others.

According to Amory (2006) pivotal to the idea of CHAT is that all activities are social and cultural in nature, whereby actors transform an object. Objects are cultural entities that symbolise social transformational practises (Stetsenko, 2008). The division of labour mediates between the community and the object. The present study has been conducted based on these elements identified in activity theory. The subject in this research is represented by the facilitator and

students of higher education, as the unit of analysis. The object refers to the use of online resources in the teaching and learning of the Curriculum Context and Change module. The tools included online resources such as internet, discussion forums, search engines, lecture notes, instructor/student profiles, e-journals/databases, quizzes, and any other tools that may arise from the findings. The community refers to the institution of higher education, other tutors, and students. The division of labour included the Curriculum academic department, technical teams to look into online support and faculty administrators. Rules are based on the expectation of the Curriculum Context and Change module.

It is possible to use activity theory for the purpose of this study because cultural historical activity theory has been instrumental in soft-ware development environments (Amory, 2006), online communities, learning technologies and e-learning (Amory, 2006). In addition it is highly useful in evaluating teaching and learning activities. The ideology surrounding CHAT is relevant for this research in discovering what resources participants utilise, which then relates to how and why they use it. This also sheds light on to the challenges that lecturers and students face when using online resources.

In a study addressing the gradual rather than radical assimilation to information and communication technologies (ICT) in higher education, Kirkup and Kirkwood (2005) identify activity theory as a perspective in determining how ICT tools are used in particular higher education settings. The study surveyed tutors who were early and late adopters of web technology. As e-learning gained momentum by 2003, 72% of courses entailed the use of online resources, whereas in earlier years only a fragment of students and lecturers had access to the internet. Despite the acceleration towards online learning, only 26% of students submitted assignments electronically, below the expectation. Thus, Kirkup and Kirkwood (2005) believe that activity theory provides an analytical framework for examining activities, problems and interaction, as experienced in their research.

Amory (2006) conveys that the design and development of an interactive technological learning environment needs to be aligned with CHAT to support contemporary educational practises. This is as a result of the perception that technology represents a mechanical input-output relation between an individual and computer; however Nardi (1996) contends that a richer, meaningful depiction can be provided through the lens of activity theory. Thus, learning is not about describing acquisition or participation, but rather about teaching and learning environments conducive to collaborative practises of humanity that transform them.

According to Van den Akker, de Boer, Folmer, Kuiper, Letschert, Nieveen and Thijs (2009) other important issues to be considered with regards to the use of online teaching and learning resources are aims and objectives; content; assessment; learning activities; teacher role; time; location; materials and resources as well as grouping (called the curricular spider web).

1.8 RESEARCH DESIGN AND METHODOLOGY

1.8.1Qualitative Field of Research

Darko-Ampem (2004) claims the research design is a logical sequence that relates empirical data to a study's initial research questions and conclusion. The research being investigated aims to achieve an in-depth knowledge and understanding of online resources used by facilitators and students in the teaching and learning of the Curriculum Context and Change module within the qualitative framework. Qualitative research is concerned with developing explanations of social phenomena that inform understanding about the world in which we inhabit and why things exist the way they are (Hancock, 2002). Research in this field involves the opinions, experiences and feelings of individuals producing subjective data, relative to the ideology of the interpretive paradigm. This study adopts a case study approach to conduct research.

1.8.2 Case Study

As a form of qualitative research a case study has been chosen as one of the methodologies in conducting research. Case studies are implemented when the researcher intends to support their argument by a thorough analysis of a person, a group of persons, an organisation or a specific project (Darko-Ampem, 2004). In most case studies the researcher selects a small geographical area as the subjects of the study. Therefore, this study has focused on one facilitator and thirty-five students of the Curriculum Context and Change module at a higher education institution in South Africa. From an interpretive perspective, case studies aim towards a deeper understanding of how participants relate and interact with each other in a context-specific situation and the meaning that arises from the phenomena under study (Maree, 2007). This is synonymous with Activity Theory which believes there should be interaction among participants involved in an activity in order to achieve desired outcomes. Tellis (1997) confirms this ideology by contending that case studies should be linked to a theoretical framework (Cited in Zainal, 2007).

Application of the case study methodology has been used in many areas of discipline such as sociology, law, medicine and education (Zainal, 2007). In the field of education evaluative applications were investigated to determine the use and effectiveness of educational programmes and initiatives (Zainal, 2007). Similarly the present study undertaken determined the extent to which students of the Curriculum Context and Change module use online resources to

achieve the objectives and aims of the modules in relation to the students' need to learn. This represents the case under study.

Triangulation is a pivotal tool in ensuring the validity of a case study research (Johansson, 2003). This study uses an online questionnaire, observation and semi-structured interviews to determine and validate the case study at hand. By comparing this study to the concerns expressed in the literature review (such as the lack of assimilation to online resources as a teaching methodology, untrained and inexperienced facilitators, and poor online technical support experienced in previous years) it was possible to determine whether the educational institution, facilitator and students have progressed in this current study.

Although case studies are often criticised for their lack of generalisable findings beyond the sample group, the detailed qualitative accounts help to explore or describe the data in real-life environments (Zainal, 2007). It may also be used to explain the complexities of real-life situations that might not be achieved through surveys or experiments (Zainal, 2007). Thus case studies convey the process and outcome of a phenomenon through the case under investigation.

1.8.3 Context and Sampling

Teddlie (2007) contends that the representative selection of people, places, or things from which data is gathered is called a sample. The context in which this study takes place is specifically a higher education institution in Durban. The researcher has selected the purposive sampling method, frequently used in qualitative studies. Purposive sampling involves selecting individuals or institutions to answer the research questions of a study, based on a specific purpose (Teddlie, 2007). The participants in this study included one facilitator who tutors the Curriculum Context and Change module and thirty-five students. The researcher has chosen this specific group of people with the full assumption that the results of the research cannot be generalised to the wider population. However, the research has tried to generate solutions for this specific group and the research acknowledges that the transferability of the results is possible to similar groups or context.

However, convenience sampling has also been used to select five of the most accessible students for one-on-one semi-structured interview from the thirty five, and eleven for the focus group semi-structured interview.

1.9 VALIDITY, RELIABILITY AND TRUSTWORTHINESS ISSUES

"Validity is the extent to which any researcher's tool measures what is supposed to measure and reliability is the extent to which the instrument, when used more than once, will produce the same

results or answers in the research" (Holloway & Wheelers, 1996, p.162). In a research study there are several types of validity that may be sought to determine the truthfulness of the research. These include internal validity, external validity, and content validity and construct validity (Tariq, 2009). Internal validity is a measure of how accurate the research is, and how it may produce a causal relationship between the variables being studied. This type of validity is often employed in experimental research (Changing minds, 2012). External validity refers to the extent to which the results of a study can be generalised beyond the sample, to other people and settings (Tariq, 2009). In content validity there is adequate coverage of the subject being studied, also widely used in experimental design (Changing minds, 2012). It is considered a subjective form of measurement because it relies on people's perception for measuring constructs that would be otherwise difficult to measure. It is objective when rigorous statistical tests are undertaken (Tariq, 2009). Construct validity occurs when the theoretical constructs of cause and effect accurately represent the realistic situations they intend to model (Christiansen *et al,* 2010). It is important to examine different types of validity to enhance the truthfulness of a research; however measurement is not an issue in a qualitative research, descriptive of this study. Since a case study style of research has been implemented in this study, the aim is to describe and not to measure (Christiansen *et al,* 2010).

Concerning the reliability of a study, according to Golafshani (2003) the concept of 'reliability' is often misleading in qualitative research since the quality of the study lies in generating an understanding, which is often difficult to measure. Instead, to ensure a degree of reliability an examination of trustworthiness is imperative. Consequently the trustworthiness of a research study becomes central when considering issues of validity and reliability. In describing trustworthiness in qualitative studies the concepts of credibility, neutrality, confirmability, dependability, applicability, and transferability can supplant issues of reliability and validity in evaluating the quality of the research (Golafshani, 2003).

Triangulation is a process indicative of using multiple data collection methods, data sources or theories to ascertain the validity of the findings evident in qualitative studies (Darko-Ampem, 2004). The use of three data collection tools has informed the process of triangulation to establish a sense of validity to ensure trustworthiness in this research study.

1.10 METHODS OF DATA GENERATION

The research adopts three techniques in data collection/production, namely document analysis, observation and semi-structured interviews.

1.10.1 Document Analysis

Document analysis is valuable for collecting qualitative data (Blundell, 1998). Cohen, Manion and Morrison (2007) argue that documents are integral sources of information to a research study. In identifying online resources used in the teaching and learning of the Curriculum Context and Change module, the documents analysed included student and facilitator files, the module outline, prescribed book for the module, articles for the module and assignments. Some documents are private in nature like diaries, thus the researcher considered the ethical implications (Cohen *et al*, 2007). However in this study the researcher did not use a private diary. The researcher believed that all data collection procedures should be transparent to ensure validity of the findings.

1.10.2 Online Questionnaire

A questionnaire is a list of questions which respondents in a study answer (Christiansen *et al*, 2010). This may contain open-ended or close-ended questions. The research at hand has entailed a semi-structured questionnaire available online. A semi-structured questionnaire leaves space on the questionnaire for respondents to answer in as much detail as they may want to.

An online questionnaire can revolve around various subjects or areas. The primary object of an online questionnaire is to derive information from a participant regarding their experience, views and suggestions. An online questionnaire contains specific questions based on the objective of the research that may have open-ended, close-ended or multiple-choice questions (Sample questionnaire, 2012). This study has required the thirty-five students to fill in the online questionnaire as it relates to their use of online resources in the teaching and learning of Curriculum Context and Change module. This helped the researcher to evaluate the results and determine students' experience of the course.

1.10.3 Observation

Observation involves the researcher physically present at the place of research to observe what is actually taking place (Cohen *et al*, 2007). The researcher can report on things he/she has witnessed and record these, instead of relying on what other people may have told her. In this way, first-hand information can be obtained that would otherwise be unclear or absent during interviews.

The researcher used unstructured observation which suggests a free description of what is being of observed (Christiansen *et al*, 2010). It is sometimes very difficult to capture everything being observed so the researcher may choose to focus on a few key aspects. In this study the

researcher concentrated on what online resources are being used and how facilitators and students use them in the Curriculum Context and Change module.

1.10.4 Semi-structured Interviews

Interviews represent a systematic way of talking and listening to people in order to collect data used for research purposes (Kajornboon, 2005). The study at hand has employed at least one semi-structured style of interviewing with one facilitator and eleven students in a focus group. From the thirty-five students, five have been selected for at least one one-on-one interview. The facilitator has been interviewed three times, on a one-to-one basis. This assisted the researcher in determining the facilitator and students' experience in using online resources in the Curriculum Context and Change module.

Semi-structured interviews are non-standardised and are commonly used in qualitative analysis (Kajornboon, 2005). It is often preceded by observation, informal and unstructured interviewing of the topic of interest which in turn creates relevant semi-structured questions (Cohen, 2006). Consequently the interviewer and participants engage in a formal interview using an interview guide developed by the researcher. The interview guide contains a list of questions and topics that are addressed during the conversation in a particular order (Cohen, 2006). The interviewer is not restricted by the interview guide and may choose to deviate to follow topical trajectories (Cohen, 2006). Semi-structured interviews inculcate an atmosphere for respondents to feel free in expressing their views in their own terms that can provide reliable, comparable qualitative data. (Focus group and one-on-one semi-structured interview).

1.11 DATA PRODUCTION / GENERATION

The participants have been asked of preferable methods to be used and of convenient times of interviews so that there will be no inconvenience of their teaching and learning time.

1.12 DATA ANALYSIS

This study implemented guided analysis because units of analysis will arise from both the theory (Activity Theory) and the data. Guided analysis is relevant in relating theories from the literature to important issues that arise from the data generated from a study (Kohlbacher, 2006). Concepts have been grouped, related and categorised (Rice & Ezzy, 2000). Themes that emerged from the data and theory have been identified and related to the literature. Emerging theories and existent literature will enhance the internal validity and the theoretical level of theory in a case study research (Kohlbacher, 2006). Data indicating the identified themes have been reported.

1.13 ETHICAL ISSUES

According to Section 9(3) of the Bill of Rights (Devenish, 1999) no person may be discriminated against, therefore the researcher has ensured that the rights of the facilitator and students have not been violated throughout the research process (Devenish, 1999). Permission was obtained from the university at which the research has been conducted. Prospective participants were given a letter of consent to sign containing details of the study, with the option of participating and/or withdrawing at any stage of the research. Participants' anonymity and confidentiality have been guaranteed. These guiding principles are taken from Rand Afrikaans University (2002).

1.14 LIMITATIONS OF THE STUDY

During interviews there may be untrue responses from participants who are attempting to please the interviewer. The same can be experienced during observations whereby participants are aware of being observed that might convey untrue responses. Due to time constraints and the availability of students for interviewing (without infringing on their learning and personal agendas), only five students were selected for one-to-one interviews.

1.15 STRUCTURE AND DIRECTION OF THE STUDY

This research report is divided into six chapters. The first chapter articulates an introduction to the study. It addresses the background and motivation of the study briefly; the key research questions that direct the study; objectives; and the research paradigm. It further outlines important concepts; a brief account of the literature concerning online education; the theoretical framework that informs the study; the research design and methodology; validity, reliability and trustworthiness issues; and methods of data generation. Finally, it provides the ethical issues that have been upheld; the structure and direction of the study; and the conclusion.

Chapter two reviews the related literature concerning E-learning and the use of online tools in higher education. The chapter highlights the different types of online resources used for teaching and learning in higher education. It further provides a review of online learning contexts in tertiary institutions in developed and developing countries globally. Also findings from the literature and the implications they have for this study in terms of online teaching and learning are discussed. Finally the conclusion captures the entire chapter briefly.

Chapter three highlights the theoretical framework that influenced the study. It outlines the interpretive research paradigm employed in this study; the background to the learning theories; and the theories of learning – activity theory and the spider web curriculum. The theories suggest how learning should take place in the digital age. These theories were chosen on the basis for their contribution to online contexts. Activity theory highlights its model with the components of

subject, object, tool, division of labour, rules, community and learning outcomes. The spider web curriculum proposes the ten principles of learning such as rationale, aims and objectives, content, learning activities, teacher role, materials and resources, grouping, location, time and assessment.

Chapter four discusses the research design and methodology utilised for data representation. This study is qualitative in nature and follows a case study methodology. The data generation methods of semi-structured individual and focus group interviews, observations, document analysis/learning space analysis, and an online reflection have been discussed in conjunction with the advantages and disadvantages of each. Measures of trustworthiness, validity, reliability, and credibility of the data, along with the analysis procedures, ethical considerations and conclusion have been projected.

Chapter five presents the findings of the study. Analysis and interpretation of the data from interviews, observations, document/learning space analysis and the online reflections are involved in this process. Guided analysis is used to support the data. Themes were generated, along with categories which informed the data. The theoretical framework and literature review was used to corroborate the findings.

Chapter six concludes the entire study by recapturing the methodology used to answer the research questions, explain the significance of the study, and provide a summary of the findings. It makes plausible recommendations based on the findings. Interestingly, as a consequence of the findings the researcher developed an online/e-learning framework used to support the study which is presented in the form of a recommendation. The literature review and theoretical base are further used to enhance the findings. Finally the conclusion presents a holistic description on the findings from the data generation methods, by suggesting the potential benefits the use of online resources has for facilitators and students in similar contexts.

1.16 CONCLUSION

This chapter has provided a summation of components of the entire study. It has voiced an outline and background of the research, provided a motivation of the study, framed the objectives and highlighted the key research questions. Further, it has highlighted the theoretical framework, provided a brief account of the literature review, influenced the research design and methodology, and included data analysis. It has also captured the ethical issues that have been considered in regard to the study, as well as the possible limitations in conducting the study, and conclusion that summarise the chapter. The following chapter presents the review of related

literature on experiences of other higher education context's use of online resources in teaching and learning, both at national and international level.

CHAPTER TWO
LITERATURE REVIEW

2.1 INTRODUCTION

The context of this chapter provides a review of the related literature concerning the use of online resources in teaching and learning at higher education institutions. A review of past studies relating to the issues and trends to the online teaching-learning process were explored along the following parameters: studies with direct relevance to the topic, that is, those that include what online resources are used by facilitators and students at tertiary level education; how these are used; and why they are being implemented. The literature extends to include studies examining the practise and challenges experienced by facilitators and students in using online resources within the field of curriculum and other areas of discipline studied at universities and colleges, which could be used to inform the Curriculum Context and Change module. Subsequently studies of an empirical nature from various methodological traditions (including descriptive studies, surveys, interpretive studies, ethnographic studies, qualitative and case studies, and literature reviews) have been examined for the purpose of this research.

2.2.1 TECHNOLOGICAL DEVELOPMENTS THAT AFFECT EDUCATION

In the last two decades, a reasonably transparent understanding has emerged about the nature of the learning environment which can prepare students of higher education for this present era. This relates to a constructivist pedagogical philosophy mitigating a student-centred approach to teaching in which learning is personal and social (Philips, 2009). It is within this context that the technological developments that have arisen in this generation not only have the potential to change the way students' access and maintain knowledge, but also to transform the traditional modes of delivering education (Boezerooij, 2006). Symbolically, the youth of this modern period have assimilated well with technology. From a very young age they have experimented with technological devices and many have the internet at their fingertips, positioning it as an indispensible part of their daily lives.

One of the fundamental educative concepts of the 21st century is learning for knowledge (Tutkun, 2011). Central to this ideology is the acquisition of technology that is common ground to millions of people across the globe. Significantly, it has become relevant for all members of society to use electronic literacy, informatics and communication technologies by acquiring the knowledge and skills to use these efficiently. According to Poe and Stassen (2002) technology allows students to become more active in constructing their own knowledge, given the familiarity in using technologies such as the computer and the internet in retrieving information. Society's stride into this century has also been classified as the 'information age' in which information and

communication technologies underpin human activities (Darries, 2004). The teaching and learning atmosphere is envisaged as one in which information is organised in such a way that it permeates effective learning (Tutkun, 2011). This process can be articulated using some essential stimulants (such as methods, equipment and sources) to attain educational goals. Since knowledge can be obtained at a fast pace, the use of technological advancements in education is inevitable. It is for this reason that institutions at the tertiary level are obliged to capitalise on these developments as it indicates a move towards improving the quality of education and minimising the problems that exist. Knowledge-based societies within the global digital sphere need more flexibility in their educational structures to adapt easily to new methods of learning and teaching, and new intellectual and social needs. In light of this statement Amory (2006) suggests that, now more than ever, governments should assume a strategic position in ensuring pedagogical developments align towards the computer age. Therefore, it is imperative to view the role government has in bringing about online learning in education through technological innovations.

2.2.2 THE ROLE OF GOVERNMENT IN ADVOCATING A TECH-SAVVY GENERATION

Experts in education concur that change in higher education in the areas of curricula and pedagogy is fraught with insurmountable disputes, tension and challenges (Friedman & Deek, 2003). Educationists of traditional methodology are so engulfed in their ways that the very thought of pedagogical change brings instant resentment, whilst there are those who are radical enough to readily implement new methodologies but are confronted with the problem of insufficient resources to enable the change (Khoza, 2011). Beyond the disparities that exist, institutions of tertiary education have acclimated well to change when considering the pressures of the marketplace, particularly so, in that governments have responded to a global transition of examining pedagogical practises (Shapiro, Haahr, Bayer & Boekholt, 2007). The relationship between government and higher education is pivotal as this defines the scope and room to manoeuvre new policy initiatives in education to reach the desired policy objectives (Boezerooij, 2006). Never has this been more articulate in the kind of graduates and citizens envisaged in the information age. In South Africa, the government explicitly states in an e-Education policy document that, *"Every South African manager, teacher and learner in the general and further education and training bands will be ICT capable (that is, use ICTs confidently and creatively to help develop skills and knowledge they need as life long learners to achieve personal goals and to be full participants in the global community) by 2013* (Department of Education South Africa, 2004: p, 17). Emphatically, governments worldwide have ambitiously sanctioned the change to incorporate Information and Communications Technology (ICT) into the education system. From developed countries such as America and the United Kingdom, and developing countries like South Africa and India, online learning through technological innovations have assumed a

prestigious position in the teaching-learning process (Mayes, Morrison, Mellar, Bullen & Oliver, 2009).

Despite the progression in the last 20 years, universities and colleges are still overcome with problems relating to finance, training, language barriers, lack of experts in the profession and insufficient resources and pedagogical tools (Khoza, 2011). This is a major concern for governments as they grapple with contingency plans to maintain policy developments in education. It is imperative to consider the influence the South African government has on instituting ICT at higher education, since this resides within the context of this research (Czernierwicz, Ravjee & Mlitwa, 2006). This could better facilitate understanding as to why the Curriculum Context and Change employs online learning as a major driver in teaching and learning. The discussion also includes the experience of other countries' governments in advocating e-learning as a strategy for change in higher education.

Improving efficiency and dealing with the equity needs of a nation can present serious challenges for institutions of higher education. South Africa parallels this view, fuelled by immense pressure to meet the social prerogatives and skills needs' of a democratically transformed society (Kistan, 2002). Tantamount to this is the problem of accommodating students from diverse backgrounds at higher education institutions, thus widening the gap in the knowledge and skills required for certain areas of learning such as mathematics and science (Paras, 2001). In addition, the burden of large class sizes, a multilingual society of which 11 languages are official, and problems relating to curriculum design need urgent attention. However, Tella and Adu (2009) advocate that ICT has the potential to overcome historical problems of isolation, impediments to socio economic development and barriers of access to information and knowledge. One of the greatest challenges faced by the country is to ensure a demographic representation among graduates in response to a long legacy of an apartheid regime that marginalised specific race groups (Scott, 2004). It is not the requirement of this research to investigate the specific discriminatory factors that influenced a change of government in 1994, but rather to consider briefly the plight of the country that has brought about change in education. Within this framework, the South African government has endeavoured to improve in its policy on education and delivery performance. Concerning policy goals, the idea is to produce ICT managers, educators and students by 2013 (Department of Education, 2004). Policy support for ICTs in South Africa in reconstructing education and contributing towards broad post-apartheid developments is outlined in the 1997 White Paper 3 on Higher Education, the 2001 National Plan for Higher Education, the 2003 Draft White Paper on e-Education, and the 2004 ICT Charter (Czerniewicz, Ravjee & Mlitwa, 2006). This suggests the crucial position ICT holds in improving education, and institutions of tertiary

education are highly instrumental in constructing globalisation as a discourse needed to mould the nature of broad post-apartheid change (Ravjee, 2007).

Educational technology (ET) involves the systematic identification of the goals of education, a realisation of the diverse cohort of student needs, the environment in which learning will take place, and the provisional requirements needed to sustain these (National Focus Group, 2006). The challenge exists in designing appropriate systems that will mitigate teaching and learning systems that can achieve the identified goals (Smith & Jones, 2005). Relatively, 2005 marked a significant year in the United Kingdom (UK) government's endeavour to use transformation as a policy driver (Mayes *et al*, 2006). The Cabinet Office published its first *Transformational Government Enabled by Technology Strategy* to transform the business of government that filtered to all areas of policy and practise (Mayes *et al*, 2006). The then Department for Education and Skills came to the forefront in implementing a process entitled 'Towards a Unified e-Learning Strategy' initiative that transferred on to higher education quickly. The fundamental aspect of appropriating e-learning through technological innovations included the realisation about the potential e-learning has in bringing about changes in higher education institutions that meet the needs of students (Jara, 2007). Identifying the transformational influence technology has through e-learning in higher education in the UK and other countries, helps to provide a perspective as to why the university in this research has adopted an e-learning approach to teaching and learning of the Curriculum Context and Change course. Significantly, since South Africa has faced global pressure to respond to a technology-mediated world (Czerniewicz, 2006), this is relative in perhaps shedding light on why certain universities in South Africa have not responded to the call and why others have embraced the potential of e-learning.

In Wales e-learning was cemented in the policy objectives of the National Assembly outlined in the 2001 publication 'The Learning Country' (Smith & Jones, 2004). Consequently a number of publications and reports governing e-learning in education were introduced. The premise surrounding the support for e-learning stems from a view that technology-enhanced learning should become a normal part of the mainstream provision in all aspects of life, work and study by current and future generations (Smith & Jones, 2004). By 2015 it is envisioned that e-learning will be embedded in higher education institutions across Wales. The policies and strategies devised aim to create the optimum learning experience based on robust technology to improve learning, teaching, assessment and the curriculum (Jara, 2007). Given the myriad of policy endeavours needed to incorporate e-learning in all aspects of teaching and learning at higher education in Wale, the findings suggest the stringent position it occupies in improving education in a competitive world.

Although this research is focused primarily on a university in Kwa-Zulu Natal within the specific course of Curriculum Context and Change, the review of related literature and the findings discussed later, will assist in ironing out some of the problems that hinder South African universities from sufficiently implementing ICTs in higher education. According to Czerniewicz *et al* (2006) there is no overarching policy outlined for the use of ICT in higher education in South Africa. Consequently tertiary institutions such as the North West University and the Walter Sisulu University of Science and Technology, amongst others, reflected no concrete Information Technology (IT) policy or IT-related teaching and learning material that could enhance the process of e-learning in South Africa.

The introduction of educational technology (ET) in India can be traced to the early 1970s. The Ministry of Education used ET to solve problems in education and improve learning through mass media and television programmes (National Focus Group, 2006). Since then India has made substantial use of ICTs which include, open soft-ware, satellite technology, human-computer interfaces and digital libraries. Government-supported initiatives towards the use of ICT in education include: the National Programme on Technology Enhanced Learning that centres on internet and television technologies, IIT-Bombay has started the program of CDEEP (Centre for Distance Engineering Education Programme) through the implementation of real time interactive satellite technology, and One Laptop Per Child (OLPC) in Maharashtra (Hattangdi & Ghosh, 2008). Despite concerted efforts by the Indian government such as these, research findings indicate that the overall state of higher education in India is dismal (Hattangdi & Ghosh, 2008). In 2007 only 9% of students in education enrolled for tertiary education. This can be rooted to the highest rates of illiteracy in the world (Rajpal, Singh, Bhardwaj & Mittal, 2008). Given the enormous challenges India has experienced in accommodating the needs of a rapidly growing population, the government and all stakeholders believe that e-learning has the potential to make a substantive change in education. Consequently a number of distance education programmes are available to compensate for colleges and universities that have tight enrolment requirements, such as the reputable Indira Gandhi National Open University under the Distance Education Council (DEC).

2.2.3 THE IMPACT OF TECHNOLOGY: A DIGITAL DIVIDE?

Undoubtedly the current generation of young people have been immersed with a host of digital technologies from an early age - ranging from computers, the internet, web 2.0, social networking and cell phones (Czerniewicz & Brown, 2010; Donelly & McSweeney, 2009; Oblinger, 2003). It is perceived that they think, learn and behave differently, as compared to previous generations, and this experience has led them to possess divergent expectations about learning and life (Jones & Shao, 2011). This assimilation has inculcated a dependence and expectation of various

technologies that can relate information with a touch of a button (Oblinger, 2003). Consequently, this has produced a digital divide (Prensky, 2001). Drawing from these assumptions and epistemologies, several competing terms have emerged to identify, understand and explain the current plethora of students' higher education encounters. Several scholars have been prompted to distinguish between the impact of technology upon learning across many generations, since the 1980s. The researcher found it relevant to discuss these as they could have important implications for the findings of this study, and better inform the Curriculum Context and Change discipline.

To begin with, Howe and Strauss (1991) differentiate between 'Generation X' (born between 1961 and 1981) and the 'Millenial Generation' (born between 1982 and 2000). According to them the new generation of millennial students were hopeful, able to collaborate with others and are driven towards achieving goals by following the rules. Further, millennial students are characterised by their adaptation to new technologies, stemming from a broad historical perspective in biology and culture. Tapscott (1998) coined the term 'Net Generation' which implied that young people were groomed in a frenzy of digital media, the computer and the internet. A significant debate in Tapscott's (1998) theory believed that change in attitudes and tendencies to learning was a consequence of emerging technologies. In addition, he argued that institutions of higher education would have to somehow conform to technically advanced students which would challenge existing ways of teaching and learning (Tapscott, 2009).

Prensky (2001) distinguished between 'Digital Natives' and 'Digital Immigrants'. This rationale contended that digital natives were unique from previous generations called digital immigrants, those born prior to the digital communication era. He discovered that digital natives communicated through a digital language via the medium of computers and the internet. Consequently they developed new attitudes and approaches to learning because of perpetual developments in technology (Prensky, 2001). In contrast, digital immigrants had to learn how to use the different technologies rather than viewing them as 'innate' or natural tools. Prensky (2001) identified that lecturers were digital immigrants, and this broadened the gap between their digital native students, which incurred enormous problems for higher education. Coinciding with Prensky's (2001) theory, Khoza (2011) concluded in his study that lecturers were digital immigrants because they lack the 'pedagogical tools; ongoing monitoring; WBTL guidelines and advice structures... to ensure the successful use of WBTL technologies' (p. 157) in a teaching and learning environment. Another important revelation of his study was that higher education institutions needed to be more supportive in terms of training students from undergraduate courses in order to overcome the shortage of Education Technology lecturers in South Africa.

‘Generation Y’ came about in China, and was a development on the Generation X. In a blend of economic boom and digital phenomena the premise surrounding Generation Y suggests that students exhibit unique generational characteristics related to these (Zhao & Liu, 2008). As a result students in this era are able to collaborate, network and have an appetite for change. They are able to use a host of digital devices such as personal computers, iPods and mobile phones to communicate (Zhao & Liu, 2008).

These divergent concepts impact the ideology of digital divide because they contain issues of inclusion that imply exclusion where users of the resources are divided according to different names (Castells, 2009). Underwood (2007) posits that the names given to users are based on competing factors such as the medium language of communication, which is predominantly English; accessibility to the internet; and the knowledge and skills applied to using the internet (amidst others).

Prensky (2001) argued that the new generation of students had peculiar ways of thinking because of their assimilation with developing technologies throughout their lives. Prensky (2001) also went to extremes by blatantly claiming that the brains of Digital Natives were physically different to those of prior generations because of the impact of evolving technologies. These controversial statements have caused Jones and Shao (2011) to question the presumptions made by Prensky (2001), by critically reflecting on the studies carried out in various countries. Jones and Shao (2011) posit that students’ acclimation to technology cannot be absorbed universally because, contrary to Prensky (2001) who suggests that students learning preferences is a result of technology, other studies have indicated that students immersion to the digital field did not imply a preference for increased use of technology in educational environments. Further, they are convinced that it is difficult to generalise about the current generation of students (digital natives) due to the conflicting variations of interests, lifestyles, age, gender, socio-economic background, and academic preference (Brown & Czerniewicz, 2008; Selwyn, 2008). Also, the premise surrounding the Net Generation and Digital Natives identifies students as advanced users of technology but Jones and Shao (2011) challenge this ideology because some students make use of them, particularly due to course requirements.

The digital divide has stemmed from the competing terms that have surfaced over many years since the 1980s. This generational divide is said to have been found in education between teachers and students (Prensky, 2001), but this claim has been disputed and holds little depth (Kennedy, Krause, Judd, Churchwood & Gray, 2008). Under intense investigation these claims about digital divide (Net generation, Digital Immigrants, Digital Natives) have dissolved but in other avenues of financial constraints and demographic issues, digital divide have emerged.

Disparities exist between the accessibility of technology across different countries. This is further exacerbated by gender, class and ethnicity (Selwyn, 2008). Yet Jones and Shao (2008) still affirm that the arguments surrounding the Net Generation and Digital Natives inculcating a digital divide are insufficient to support the claims thereof.

At this point it is also critical to consider the argument of Khoza (2011) who advocates that these terms are highly debatable because they conveniently overshadow the e-learning signals from the spider web in association with learning outcomes. A learning outcome is a statement of what a learner is expected to know, understand or be able to do at the end of a learning activity/period (Donnelly & Fitzmaurice, 2005, p.16). Khoza's (2011) theory postulates that for effective learning to take place, important learning signals (learning activities) must be selected in order to avoid noise (issues or activities that hinder students from learning). It also suggests that facilitators are responsible for helping students construct learning signals to provide better opportunities for learning. In order for the e-learning signals to be fully realised and applied it must be used in conjunction with hard-ware, soft-ware and ideological-ware resources. There is a lack of evidence to contend that either students or facilitators desperately require advanced web 2.0 resources in teaching and learning (Jones & Shoa, 2011), so these resources can only be included in the teaching and learning process if there are specified learning outcomes.

Khoza (2013) categorises online teaching and learning resources into Technology in Education (TIE), and Technology of Education (TOE). TIE is defined as any resource a person can see and touch. Conversely, TOE is demonstrated by any teaching and learning resource one cannot see or touch. Further TIE is split into hard-ware and soft-ware. Hard-ware (HW) resembles any tool or machine used to access the internet (e.g. Cellular phones, desktop computers, laptops). Soft-ware (SW) poses as any material that is made for the hard-ware to display or communicate learning (e.g. online PowerPoint slides) (Khoza, 2012). TOE encompasses teaching and learning strategies, research studies, theories of learning, amidst others, that is conducive to an online platform (Khoza, 2012). In this regard one cannot see or touch the TOE resources. This analysis suggests that hard-ware and soft-ware resources should only be used for learning if the specific learning outcomes have been outlined in conjunction with their use. Ideological-ware (IW) includes teaching/learning strategies, learning theories and teaching and learning activities. Tella and Adu (2009) concur with Khoza (2013) by further advocating that integration of technology with learning should be curriculum focused instead of technology driven to administer prospective curriculum reform. In this study the Curriculum Context and Change module adopts a blended learning approach, which means that face-to-face teaching and learning and web-based teaching and learning (WBTL) are used interchangeably to interrogate the course content. WBTL must incorporate all three resources for teaching and learning to be effective and, in essence to attain

the desired learning outcomes. However, Khoza (2012) cautions that facilitators should be aware to use more TOE because a reliance on TIE leads students to learn from the resources instead of with them. It is therefore important to consider TIE and TOE, to determine how these unfold in this study, and what impact it has on teaching and learning. The current debate according to the implementation of HW and SW resources strongly indicates that the usage sometimes produces a digital divide (Khoza, 2011) that has had a global impact.

2.2.4 THE EXPERIENCE OF DIGITAL IMMIGRANTS GLOBALLY

Germany

In a study conducted by Heinze (2008) regarding an I-literacy project in 2007 at the University of Augsburg, Germany, the purpose was to develop a platform to enable teaching of information literacy skills to students. The report suggested that students could use the internet research optimally, however were not information literate. Students were able to use technology but could not appropriately use it for learning. Ryberg, Dirckinck-Holmfield and Jones (2010) argue that there needs to be more intense pedagogical effort to develop students' literacy skills. Further, they assert that the young generation are well immersed with ICT skills in using social soft-ware that can be developed for formal learning purposes. The underlying dissention lies in administering the support and guidelines to initiate technical skills in an educational environment (Jones & Shao, 2011).

Norway

Traditional methods of communication via the internet have dominated the market for online technologies for many years (Brin & Page, 1998). However, in a study by Rønning and Grepperud (2006) in Norway it has emerged that the internet and email do not assume a stringent position in communication among students, and between students and teachers outside plenary sessions. The study also revealed that although frequent use of the internet and computer was high in Norway, disparities existed in employment status. Younger, unskilled employees who worked part-time had little access to the internet at their workplaces. Also, the availability of technology did not parallel its perceived increasing use (Rønning & Grepperud, 2006).

Austria

Nagler and Ebner (2009) examined a study in Austria that concentrated on the use of technology for learning and socialising. The evidence suggested exorbitant use of Wikipedia, YouTube and social networking sites, while social bookmarking, photo sharing and microblogging were not as favourable. More than 90% of the students involved on the study had internet access at their

residence, while 80% had laptops and desktop PCs. Not surprising, web 2.0 technologies were mainly used for personal interaction.

Chile

In Chile, Sánchez, Salinas, Contretas and Meyer (2010) described a research which explored the present relationship between students and technology. It surfaced that student' skills and abilities with technology did not correlate with the description of the 'digital natives' as portrayed in the literature by Prensky (2001). Although students used many applications simultaneously when using the computer, they were unable to multitask. In addition, ICT integration did not act as a substitute for the social activities that students were still engaged with. Significantly, face-to-face communication was highly regarded by students.

China

Wang, Lin and Mao (2003) undertook a study at a university in China to determine students' use of computer skills and information literacy. The research indicated a discrepancy between graduate and undergraduate students' computer skills. It was found that graduate students experienced a lower level of proficiency in this area. This was a consequence of the other universities or rural settings students came from, where there had been less contact with computers. Despite the government's attempt to encourage students' information literacy, implementation at institutional or department level was dismal. As a result, students could not take full advantage of the available digital resources due to poor information literacy.

South Africa

Brown and Czerniewicz (2008) published an immense study involving 3522 students as they related their use of ICT in six tertiary environments across five South African provinces. The results evidenced that the implementation of computers in facilitating teaching and learning was poor, despite the increasing developments in new technologies. ICT integration in higher education courses was not ubiquitously applied and students displayed low levels of interaction with technologies. Surprisingly the study also revealed that students did not frequently engage with social soft-ware tools, but widely embraced instant messaging and web searching.

In this study the researcher found it relevant to discuss the overarching state of the relationship between emerging technologies and higher education in various countries. This will help discover possible similarities, trends or disparities in the findings. In examining the empirical studies of different countries, interesting assumptions have surfaced. Firstly, the educational context in which students' exhibit learning is a predominant factor in determining the extent to which they can converse with different technologies (Jones & Shao, 2011). Although institutions of higher

education have succumbed to the pressure of widespread integration of ICT, there are still alarming concerns about the rationale governing this change. Much of the tension lies in the political pressure rather than the concrete evidence to support the immense changes such as the needs of education in proportion to the demographics of the country (Bennette, Maton & Kervin, 2008). Jones and Shao (2011) concur that a generalisation cannot be formalised about the current generation of students, as they posses a blend of 'interests, motives and behaviours, and that they never cohere into a single group or generation of students with common characteristics' (p. 12). It is also worthy to state that their responses to the accessible technologies may be different, between those, who from a young age have been ingrained with technological developments (digital natives), and others who are still 'babes' because they are learning to appropriately use the technologies (digital immigrants).).

2.2.5 HIGHER EDUCATION AND THE ONLINE WORLD

The last 800 years in the efforts of higher education suggest an embarkation of sustainability, adaptability and transformable capability (Donnelly & McSweeney, 2009). Currently there is an ever-pressing need to assimilate with the complexities of the digital age, which has become more taxing as educational institutions are overwhelmed by new technologies and a vast interconnectedness of nations and their societies (Darries, 2004). In light of this, educational structures have become more flexible in adopting new styles of teaching and learning in the face of intellectual and social needs that associate with the skills of a tech-driven generation (Donnelly & McSweeney, 2009).

Over the last two decades many higher education institutions have employed a substantive variation of online resources into their online learning programs and support processes (Boozerooij, 2006). With increasing advancements in technology, a wide spectrum of online resources has been developed for implementation of online teaching and learning. These may be classified into different categories by various experts in the field. Bonk (2001) classifies online resources into four categories, namely: online class tools (e.g. syllabus posting, self-testing, online lecture notes, uploading and downloading file tools, online student evaluations and courseware), collaboration and sharing tools (e.g. instructor collaboration, discussion forums, real-time chats, interactive feedback and annotation, student or instructor profiles, online task or activity collaboration), instructional activities (e.g. critical and creative thinking activities, data analysis, online scientific simulations), and web resources (e.g. search engines, articles and journal links, lecture notes, syllabi and online glossaries). Whilst Bonk (2001) indicates a classification of online resources into groups, Tutkun (2011) treats them separately in the context of her study relating to the use of academic articles. Whilst online tools have been outlined in different ways, they may be further differentiated through two approaches, namely asynchronous

and synchronous learning (Hrastinsie, 2008). *Synchronous learning* involves instruction and collaboration in 'real time' through the internet and includes tools such as live chat, audio and video conferencing, joint viewing of multimedia presentations and online slide shows, and data and application sharing. *Asynchronous learning* relates to the time-delayed capabilities of the internet and employs tools like the e-mail, threaded discussion, newsgroups and bulletin boards, and file attachments (Poe & Stassen, 2002).

Reviewing how different writers distinguish and implement online resources helps to determine which ones are most commonly used. According to Bonk (2001) 83% of the respondents in his study find search engines a highly useful tool for teaching and learning. Online articles and journal links were also perceived as common tools used by lecturers and students. The highest rated tool in Bonk's (2001) study was the posting of syllabi online, as students were able to access this at their own convenience and keep in touch with current work in the course. 60% of the respondents viewed discussion forums, chat rooms and other means for electronic collaboration as highly useful (Bonk, 2001). This suggests that the online tools are not only commonly used but that students and facilitators are familiarised with. In recent trends the Web 2.0 forms of authoring or content creation have been implemented in higher education to support student learning (Gray, Waycott, Clerehan, Hamilton, Richardson, Sheard & Thompson, 2009). Web 2.0 activities include blogging, audio/video podcasting, social networking, virtual worlds and wiki writing. These may be accessed through popular tools or sites such as Twitter, YouTube, Delicious, Facebook, Media Wiki and Word Press amongst others (Gray *et al*, 2009). The Web 2.0 applications afford universities and colleges the opportunity to exceed traditional modes of delivery to more learner focused environments (Sigala, 2007). These are fast becoming the every-day accessibility points for learner driven teaching because they are free, support collaboration and interaction, create ways for networking and enhance students' learning (Ivala & Gachago, 2012). In identifying the online tools that are frequently used to support higher education teaching and learning, it is relevant for the purpose of this study to provide a context by examining what online resources are used by the Curriculum Context and Change module. It is now possible to explore, in detail, the online resources that are mostly implemented for teaching and learning at various higher education institutions.

2.2.5.1 Discussion Forum

An online atmosphere for teaching and learning is significantly different from a face-to-face experience, although a growing trend towards blended learning (face-to-face and online learning combined) has rapidly embraced many institutions of higher education (Yuen, 2011). E-learning environments have created a habitat in which students and facilitators can maintain regular contact and endorse collaborative activities, without the necessity of a face-to-face encounter

(Harris & Sandor, 2007). An online delivery of learning instils greater flexibility for students to study almost anywhere and at any time (Dixson, Kuhlhorst & Reiff, 2006). It is within this rationale that online discussion forums are fast becoming an integral component of online learning, with which facilitators and students have familiarised themselves (Mazuro & Rao, 2011).

The online discussion forum refers to an asynchronous discussion space that allows the facilitator and students to exchange ideas through written text messages that can be viewed by all participants at all times (Nault, 2008). Discussions are thought of as threaded. This means that the relationship between a message and the responses posted in the forum is graphically represented on a screen in a manner that gives a purposeful structure to a discussion or activity (O' Leary, 2004). These can be recorded to allow students or the facilitator to revisit the discussions. Discussion or bulletin boards, as sometimes referred to, are mostly provided in Virtual Learning Environments (VLEs) such as Blackboard and Web CT (O' Leary, 2004). This can create informative discussions between the facilitator and students, by engaging with the content of a course. As a consequence of the unequivocal upward trend of the implementation of computer conferencing in higher education, there is a pressing need to create and disseminate innovative approaches to the medium of discussion forums that are pedagogically worthwhile (Harris & Sandor, 2007). The premise lies in the environment for collaborative learning between the facilitator and students, thereby encouraging engagement with learning material and initiatives that draw students into the online learning process (Nault, 2008). The perception of collaborative learning is synonymous with Vygotsky's Zone of Proximal Development that draws on cognitive development. It articulates the idea that learning is a social context which enables students to refine their thinking, construct new ideas from prior knowledge and achieve a deeper understanding (Markel, 2001). Mazuro and Rao (2011) propose that a tangible way to achieving a thorough understanding is through online collaborative learning dependent on discussion forum use. Harris and Sandor (2007) have developed an interactive model to represent the sentiments of Mazuro and Rao (2011), which indicates a visual representation of how a collaborative discussion takes place.

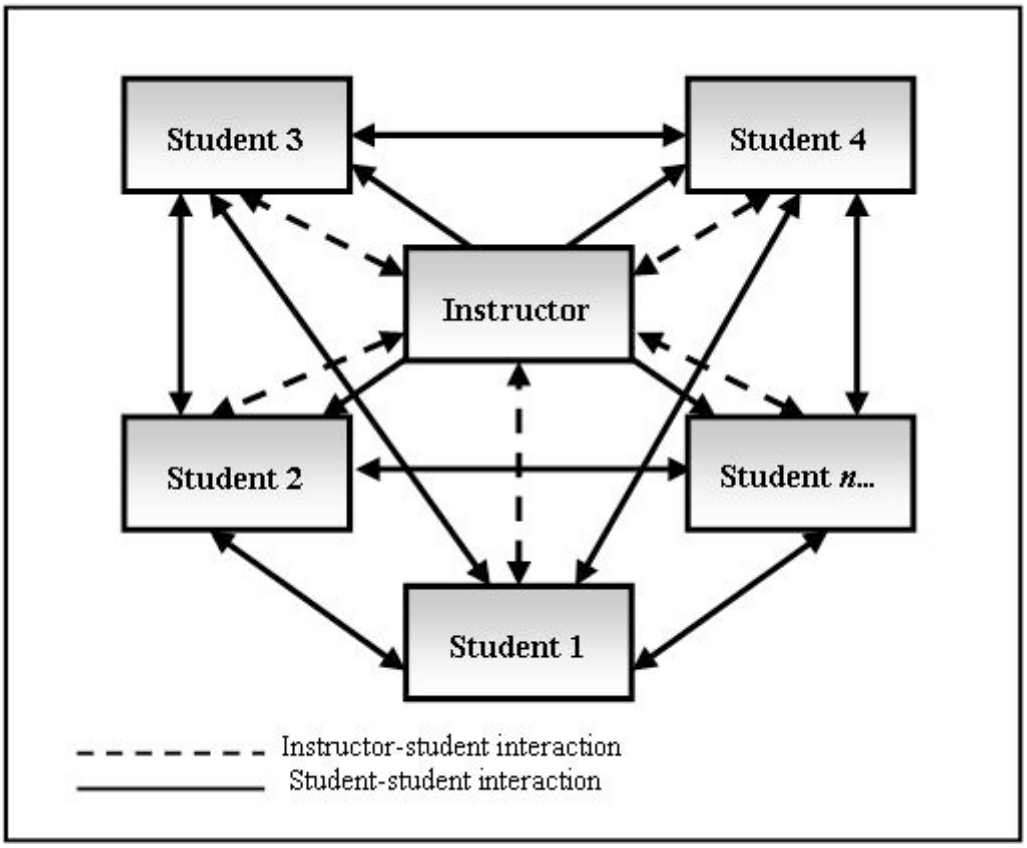

Figure 2.1: Peer learning in higher education *(Adapted from Harris & Sandor 2007, p. 384)*

According to Harris and Sandor (2007) figure 2.1 illustrates a didactic top-down approach with interactions between the facilitator and students that symbolise the learning process as one of collaboration. Peer learning is evident throughout the process; indicative of the arrows reaching between students. As students converse with one another a deeper learning experience can be achieved. Since interaction assumes a major part of the process, students gain a broader cognitive understanding and improves their interpersonal and social skills; congruent with the Vygotsky's theory. The facilitator is regarded as the provider of knowledge for consumption by the students. This position is instrumental in ensuring the discussion forum runs as efficiently as possible. However a huge burden accompanies this role, in having to be online regularly enough to field, guide and stimulate questions, postings and dialogue on course content. To be absent or offline for great lengths of time sheds a negative image of the facilitator as being unresponsive or uninterested which is detrimental to the participation of students. This has been a shortcoming and a concern in using discussion forums, leaving many facilitators and students unenthusiastic about using the tool (Harris & Sandor, 2007). Within this view it then becomes a prerequisite for course facilitators to be adequately prepared and available online to maximise the full potential of the discussion forum as an online learning resource. Yet Richards (2000) contends that the responsibility of the course instructor can be reduced by being able to answer common questions once through discussion forum than having to use email to reply to individual student queries.

Participation in online discussion forums invokes an atmosphere for active learning and responsibility through the expectation of regular participation (Farren, 2008). Participation in the virtual conference requires students become actively engaged with the course content whilst conversing with their peers as they negotiate the meanings of the course content (Markel, 2001). For example, the Northern Arizona University (NAU) has implemented online discussion forums since the early 1990s (Markel, 2001). NAU uses an online discussion tool called *Screen Porch* that has been integrated into online web courses and discussion augmentations for face-to-face courses. Screen Porch uses a graphic user interface and allows participants to use graphics and multimedia links. Weekly discussion topics are uploaded with the web course assigned readings for each week in which students are asked to respond to one or two open ended questions designed to generate a discussion about the topics. Participants have to respond to at least three other student postings which elicits a round of discussion amongst students. The purpose surrounding the ongoing use of discussion forum at the NAU suggests collaboration of students working together on projects, participation in discussions focused on course content and the ability to present group project products to other students in the class (Markel, 2001). This supports the views by Harris and Sandor (2007) and Nault (2008) regarding the value of discussion forums as a collaborative tool.

Markel (2001) argues that students construct knowledge through shared experiences that each student can achieve through the discussions. To negotiate and construct knowledge represents technology as a cognitive tool and not a one way road of communication. Cognitive tools and environments support cognitive learning strategies and critical thinking (Jonassen, 1998). Vygotsky's theory of social interaction fits genuinely with this assumption as students engage with one another, using language as a mediation tool of cognitive development (Farren, 2008). In concluding the study at NAU Markel (2001) vaguely questions the role of culture, accountability and the position of the socio-economic class, with no definitive answers. However, it is possible to consider these issues within the context of South Africa, given the long history of inequality and diverse heterogeneity. In South Africa the large class sizes, few teaching resources and an increasingly diverse range of students have forced higher education institutions to find new ways of teaching (Ravjee, 2007). O' Leary (2004) suggest that online discussion forums provide opportunities to manage the diverse cohort of students that enter tertiary education. It is therefore necessary to consider the online discussion forum as a tool for teaching and learning in this study since many of the students involved stem from previously marginalised race groups and this could help reduce the language barriers in learning that exist.

2.2.5.2 Search Engines

The amount of information available on the web is immeasurable and with the growing number of new users inexperienced in the plateau of web research, creates new challenges for information retrieval (Brin & Page, 1998). As a consequence of information explosion on the internet, high demands have been placed on search engines to provide better access of information to people (Wen, Nie & Zhang, 2001). The term 'search engine' is synonymous with the internet. Search engines are a fast and effective way of getting information that one may need from the web (Ngwuchukwu, 2012). In this regard, search engines are the primary arena in which people research information and make informed decisions.

Searching electronically can be a complex, multistage process where the required information develops throughout the course of the search (Teevan, Alvarado, Ackerman & Karger, 2004). Significantly search engines are designed to put a structure in place to handle the multitude of information available on the web, otherwise a person will be highly perplexed when confronted with the vast amount of material.

The internet affords the opportunity through which information can be sourced quickly and developments in technology have made this process more accessible than before (Nguwuchukwu, 2012). Search engine technology has had to scale incredibly to sustain the accelerated growth of the web. In 1994 one of the first web search engines, the World Wide Webworm (WWWW) had an index of 110 000 web pages and web accessible documents (Brin & Page, n. d). In current times it is estimated that the web contains at least a trillion web pages and counting (Sutter, 2011). This suggests that the search engine is a widely used online tool that tertiary institutions have recognised and have incorporated into their online learning programs to improve accessibility to learning materials (Nguwuchukwu, 2012), relevant for this study.

According to Pew Internet data (Purcell, Brenner & Rainie, 2012) in the last decade the search engine has been regarded as the most frequently used tool for online activities, rivalled only by email. In the United States of America, 73% of the population use search engines and statistics indicate that students of higher education are the most frequent users (Purcell *et al*, 2012). The education arena is the number one category for search, based on the percentage of web users generated through search engine referrals (Ingeniux Corporation, 2010). It is presumed that over 40% of all education web traffic is derived from search (Ingeniux Corporation, 2010). This serves as a recommendation to colleges and universities to implement search engines into their learning programmes to possibly achieve better results and thus encourage conversing between students and learning material.

According to Chakravarty and Randhawa (2006) search engines help researchers sift out academic documents pertinent to their field of study by using electronic searching resources that are user friendly, simple, and offer search velocity and broad coverage. Given the extensive use of search engines as a tool for online learning identified thus far, two academic search engines have been selected to further elaborate on the literature. These include Scirus and Google.

Scirus is an internet search tool created particularly for the retrieval of scientific information (Chakravarty & Randhawa, 2006). It has been developed specifically for scientists, researchers, and students to single-out the information required, such as patent information, peer-reviewed articles, author home pages and university web sites. Scirus offers a host of innovative features: more than 250 million science related pages, scientific technical and medical data on the web, latest reports, articles and journals that other search engines might omit, and unique functionalities designed for scientists and researchers (Chakravarty & Randhawa, 2006). This serves as a draw card for students who want to quickly access scientific material that is credible. A student has the option of a basic or advanced search, depending on the nature of the research. The Scirus search engine is implemented because it allows students to pinpoint information they need by: selecting the area of scientific research; narrow the search to a particular author, journal or article; restrict the results to a specified date range; find scientific conferences, abstracts, and patents; and refine, customise and save the searches made (Chakravarty & Randhawa, 2006). It is for these special features that students access Scirus and find the use of search engines worthwhile.

Amidst the myriad of search engines available on the web, Google possesses the lion's share of search traffic and is highly regarded as the foundation of any search engine marketing program (Ingeniux Corporation, 2010). Google represents a user friendly search engine based on free-text searching of the content of public web pages (Brophy & Bawden, 2005). Google is further extended into Google Scholar (access to non-copyright academic material), Google print (searching the digitised full text of printed books from publishers, book sellers or libraries), and Google ventures (Brophy & Bawden, 2005). Amongst these, Google Scholar serves as a valuable resource for scholarly literature with students of higher education (Chakravarty & Randhawa, 2006). Google Scholar offers the retrieval of information in many disciplines, fields of study and sources that include peer-reviewed papers, theses, books, abstracts and articles from professional societies, universities, academic publishers, preprint repositories and other scholarly organisations (Chakravarty & Randhawa, 2006). Articles are ranked by weighting the full text of each article, the author and the publication in which the article appears, and whether it has been cited by other scholarly literature.

Users of Google are able to restrict their search to PDF files, PowerPoint files, Word documents or Excel documents by adding a file type to the search query (Spencer, 2006). Yet users have expressed dissatisfaction with the performance of existing search engines, which frequently return several documents in response to a user query (Wen *et al*, 2001). These search engines attempt to 'understand' a user's question by suggesting similar questions that other people have asked for which the system has a correct answer (Brewer, 2005). However the queries outlined by users are somewhat different, both in form and intention, and these results in the user's discontent with the search engine. A contemporary search engine deals with over 3 billion documents, involving 10TB of data, and handles approximately 150 million queries daily (Brewer, 2005). In retrospect queries may be short, but there are more than 10 million different words in almost all languages (Brewer, 2005). The challenge then exists in tracking and ranking 10 million distinct words in 3 billion documents. Associated with this are the limited words students submit in queries and therefore thousands of hits are returned and ranking these can be problematic. The language of the target document is crucial as this depends upon whether a person can comprehend the search results (Lewandowski, 2008). Search engines consider language factors when the result sets for a certain query are the same, e.g. in the German and the English versions of Google in which the rankings may be different. Lewandowski (2008) suggests that language factors are imperative to determine the degree to which a person can be satisfied in retrieving the document anticipated. It is pertinent to consider the issue of language in this study as South African universities and colleges contain a diverse cohort of students who speak different languages (Hodgkinson-Williams, 2009), and this has an implication on their ability to successfully use a search engine.

Problems relating to the use of search engines also include 'search engine spam' where some web authors purposely manipulate their placement in the ranking order of various search engines, with the intention that their documents be retrieved first (Henzinger, Motwani & Silverstein, 2002). This relies on the notion that users of the web tend to analyse only the first page of search results, so usually the top 10 results are displayed on this page. Although problems exist in the implementation of search engines as a resource tool, Martzoukou (2008) contends that overall students of tertiary level are satisfied with the performance of search engines and themselves as information seekers. Martzoukou (2008) advises that in areas where students find difficulty in using a search engine, attention needs to be focused on developing information-seeking tactics and other strategies to better assist. This further requires a deeper analysis of the effectiveness of students' use of search engines for learning which this study hopes to give perspective on for informed practise as a learning aid.

2.2.5.3 Chat Room

A course that involves the use of online learning should offer as much support as possible by using resources that can assist students to achieve the objectives and complete assessment tasks successfully (Mishra, 2001). The role of the facilitator is instrumental in the provision of resources students can use to get relevant information about the concepts and skills to be taught. Makoe (2012) suggests that it is an imperative upon institutions of higher education to conform to the 'digital language' of the young generation (p.2) by using e-resources conducive to acquiring information. Online communication tools have been implemented in education for many years for the prime purpose in that they fulfil reasonable requirements for students to maintain contact with their peers and course facilitators (McConnell, 2006). E-learning tools such as the chat room create an atmosphere in which social and technical information can be accessed through interaction with the computer (Paparazzi & Williams, 2000). The emergence of technological and methodological developments creates new opportunities for research and teaching focused on online dialogue, information exchange, and facilitation of learning (Bonk, 2001). Collaborative learning tools have paved new ways for facilitators and students to interact using the synchronous tool of the online chat room.

Beyond a doubt, the internet has brought about an important dimension for teaching and learning (Bonk, 2001). Faculty and administrators must not only understand new technologies that arise, but must determine how best to implement them for student learning. Allowing students the opportunity to interact with each other is critical, especially where immediate feedback and interactivity is required (Wang, Newlin & Tucker, 2001). The chat tool enables students to interact by sending and receiving messages immediately (Paparazzi & Williams, 2000). The chat tool affords synchronous communication between online facilitators and students, and between students themselves.

In further relating a description of a chat room, Moodle (Modular Object-Oriented Dynamic Learning Environment) represents a popular chat tool that allows students to access a section of the Moodle area where one can chat, in real time, with other students and facilitators who are in the same Moodle area at that specific time (Student Moodle Guide, 2011; Mouyabi, 2010). After clicking on the chat window displayed on the Moodle screen, students can post their comments by selecting 'enter', and wait for other members to respond in the chat. As others in the chat room enter their comments, everyone will be able to view these simultaneously. This has several benefits for students as they are able to collaborate with each other irrespective of wherever they may be or whether they were available at the time; on condition that they have access to Moodle (Student Moodle Guide, 2011). Weber and Lieberman (2000) confirm that once students or instructors upload the transcripts of a chat session to a class web page, other students who may

have not been present at the time to participate in the chat may be able to view the chats that have taken place thereafter. Moodle represents a Virtual Learning Environment (VLE), and the fundamental purpose of a VLE is to promote learning and communication within the higher education community (Kear, 2007). As a consequence of the new ICT demands on flexibility, cost effectiveness, time saving and change, Moodle has developed an e-learning plateau that articulates the social shift in education; social constructivism; the system; tools and features within the new ICT era; social networking tools; and the ability of the system to perform (Mouyabi, 2010). In using Moodle students can determine how, what and when they access information.

Chat sessions help create a sense of virtual community by adding a personal and dynamic dimension to the course (Weber & Lieberman, 2000). Activities using the chat tool can be organised in a way that leads students to information about each other, even in matters beyond the context of the course. In Moodle students can personalise, transform and customise on demand in response to student and environmental variables (Mouyabi, 2010). This personal investment can foster a better interest in the course, which may result in more active participation and a greater sense of community between learners (Weber & Lieberman, 2000). Interestingly, students who possess a shy or introvert personality in a live course environment, may perhaps have the courage to 'speak out' in a setting where they do not have to face others; as in a chat room (Wang *et al,* 2001). According to Bonk (2001) the tool or system used in a learning environment must unite people for some common interest, e.g. sharing, problem solving or collaborating. Using the synchronous tool of chat leads to collaborative enquiry, dialogue, debate and personal reflection which can instil a feeling of togetherness (Bonk, 2001; Karen, 2007). When students are able to learn on their own or with peers, this supports the philosophy of social constructivism (Mouyabi, 2010). This theory indicates that students, and not just instructors, can contribute to their educational development. Social constructivism envisions the prominence of culture and context in understanding what occurs in society and constructing knowledge based on this understanding (Mouyabi, 2010). Accepting and accommodating new methodologies of teaching and learning represent a radical paradigm shift that aims to inculcate deep learning rather than providing instruction (Bezuidenhout & Alt, 2011). Consequently students are a major provider in their own learning; within themselves and amongst their peers (Bonk, 2001).

When chat sessions are managed appropriately in a workable environment, they can sustain a valuable online learning experience. Yet numerous course facilitators are not as enthusiastic to use synchronous chat and find it complex to manage (Weber & Lieberman, 2000). In a study conducted by Paparazzi and Williams (2000), results indicate that a chat room requires an investment of extra time on the part of instructors. This can be particularly problematic when facilitators need to be trained in hosting a chat session. From the students' perspective, using

the chat room was considered a waste of time. In addition only 46% of the students prepared for the chat session, whilst more than half of them could not sufficiently contribute to the chat discussion (Paparazzi & Williams, 2000). There were also unexpected problems of a technical nature that disconnected users from the chat room that could otherwise have been avoided

Communication tools have many advantages in a higher education setting, but the problems discussed thus far have been expected. Kear (2007) contends that when students are overwhelmed by the volume of messages in a chat session, this can be confusing. This leads to low participation and disengagement by students. The study by Kear (2007) relates to the effectiveness of VLE communication tools, and it has been found that students actually find it daunting to log on to chat rooms more than once a day. Further, in relation to the amount of students, chat room discussions can lose structure and depth. In as much as the chat room can be time consuming, it avoids the frustrating time lags of asynchronous communication tools, and therefore more suitable for group decision-making.

It is no surprise that chat rooms are fast becoming a common online tool that brings together students and facilitators within a course (Paparazzi & Williams, 2000). Positive outcomes of using an online chat tool include immense interaction between students and course instructors; a deeper interest in the subject material and matters beyond the scope of the course; and exposure of students to technology (Paparazzi & Williams, 2000). Yet even with the widespread advantages the chat tool has to offer, this cannot circumvent the areas of concern addressed in the literature that need to be reviewed. Kear (2007) suggests that facilitators first familiarise themselves with the technical aspects and procedures for chatting online. She further asserts that the objectives of the chat session should be stated in advance, and facilitators should ensure students understand the expectations and goals of the chat. The allocated time for the chat period should also be maintained to avoid a monotonous or frustrating experience (Weber & Lieberman, 2000). In addition, students tend to need positive affirmation, and in this regard facilitators need to be mindful of providing encouraging comments in the chat that can support their ideas and responses (Kear, 2000).

2.2.5.4 Web 2.0

The first generation of technologies that propelled more advanced levels of technology between people included the use of television, one-way video conferences, email, radio and discussions forums, amidst others (Saeed, Iahad & Gazem, 2012). However, limitations relating to effective interaction, collaboration and the dissatisfaction of a passive experience upon engagement with these technologies were some of areas of concern that required intervention. Consequently the introduction of the web 2.0 as a new platform for internet technologies, in recent years, has more

potential to further improve teaching and learning in higher education (Melville, Allan, Crampton, Fothergill, Godfrey, Harloe, Lydon, Machell, Morss, Russell, Stanton, Stone, Strang & Wiggins, 2009). The term 'Web 2.0' has been coined by Tim O' Reilly (2005) and since its inception has gained considerable momentum. Web 2.0 refers to the social use of the internet which allows people to collaborate; engage in formulating content; generate knowledge and share information online (Grosseck, 2009). This overcomes the challenges encountered with the web 1.0, but is not immune to problems within its own context. Yet the web 2.0 is able to provide a new dimension for teaching and learning within higher education.

The web 2.0 has a profound influence on behaviour; especially those of young people who have adapted quickly to its usage. They utilise web 2.0 tools with ease and have led them to develop a sense of community in which they are able to share and participate (Melville *et al*, 2009). Such tools include media sharing; instant messaging; chat and conversational arenas; online games and virtual worlds; social networking; blogging; wikis; and collaborative editing tools, amongst others (Conole & Alevizou, 2010). The multiplicity of tools and mediated routes for creativity and socialisation have not only suggested the crossing of borders between professionals but has soared to new heights for information organisation, knowledge creation and the facilitation of learning (Conole & Alevizou, 2010). Sigala (2007) points out that the invention of the web 2.0 possesses a groundswell of opportunity for universities to divert traditional delivery formats to a more learner-focused atmosphere, particularly through social media sites such a blogs, Facebook, podcasts, e-portfolios and so on. The premise lies in the ability for web 2.0 tools to provide a free web based opportunity to support collaboration, develop students' learning though customisation and personalisation and the freedom of networking. A notable difference between web 1.0 and web 2.0 is that the latter allows users to interact with other users or to change website content that is in stark contrast with web 1.0 that inculcated the passive viewing of information (van Jaarsveldt & Wessels, 2011). Further web 1.0 elicited a text or written information to users whereas web 2.0 allowed them to enter a dimension that utilised low cost collaboration tools (van Jaarsveldt & Wessels, 2011).

The general belief is that the current cohort of students entering universities are enthusiasts of web 2.0, however whether they are able to apply these skills in an educational environment or simply view them as entertainment tools is somewhat concerning (Popescu, 2010). In this regard, O' Reilly (2003) contends that there is'architecture of participation', a notion of cooperation, in which users of web 2.0 are able to connect what is learnt to social cognitive competences. In fact Khoza (2012) indicates that most of the teaching and learning resources are used for entertainment and education reasons. Mateas and Lewis (1999) contend that there should not be a definitive distinction between work and play, but rather to consider them interchangeably to

help the learning process. Dalsgaard (2006) affirms that social soft-ware tools can support a social constructivist method to e-learning by giving students personal tools and by interacting with social networks that can allow them to govern their own learning. The theory of social constructivism condones the negotiation and the co-construction of meaning with others (Bonk, 2006). Social constructivism embodies the concept of learning as a social process where the student is able to improve learning with the assistance of the facilitator who is at a higher level of development. In the present landscape of education there is a growing tendency of constructivist ideas in learning that has encouraged many facilitators to inculcate more authentic environments that can cater for the specific needs of students (Simoes & Gouveia, 2008).

According to Grosseck (2009) higher education institutions are already exploring web 2.0 technologies because students can find course information quickly and are able to connect a variety of information that disseminates new knowledge for others too. In the United Kingdom (UK) web 2.0 technologies are being deployed in many universities' activities (Melville *et al*, 2009). Although this has not thoroughly been infiltrated in teaching and learning as desired, Melville *et al*, (2009) argues that there is a working base in other areas of university business such as student support, administration, advertising and marketing. In further expanding the learning horizon within higher education, the UK has developed a blueprint (and begun the initial implementation) for the roll-out of web 2.0 technologies in its future educational initiatives. Whilst considering the UK as a more developed nation, advancing at increased speed to embrace a wider spectrum of web 2.0 technologies in higher education, South Africa, as a developing country, has also made significant progress towards this goal.

The South African government has capitalised on the use of ICT's in teaching and learning as a major cornerstone towards achievement of education objectives (Jaffer, Ng'ambi & Czerniewicz, 2007). Policies central to the use of ICT have been outlined in the endeavour of 'producing' capable managers, facilitators and students by the year 2013 (Jaffer, Ng'ambi & Czerniewicz, 2007). In South Africa all universities have access to ICT and have the largest information technology infrastructure on the African continent (van Jaarsveldt & Wessels, 2011). South African websites encounter highly educated users on a frequent basis, and technology has become an almost indispensable part of the daily lives for many of its citizens. Since 2007 internet usage has grown by 121% in the country with many people fully ingrained to web 2.0 tools such as YouTube, Twitter, Flickr and Facebook (van Jaarsveldt & Wessels, 2011). In research conducted by Hough and Neuland (2012) regarding the use of web 2.0 tools in two South African universities, namely the University of Stellenbosch (US) (full-time) and the University of South Africa (UNISA) (part-time), the findings indicate that all the undergraduate and graduate management modules, and academic programmes projected compulsory online

and web 2.0 usage. Although a variety of web 2.0 tools were accessed, it is interesting that all respondents elected to create online profiles on web 2.0 sites such as social networking and sharing sites. Students' profiles included details about their line of employment (mostly part-time students), field of study, their personal likes and dislikes, as well as photos. More than 80% of the students at UNISA exclaimed a positive attribute to the influence of web 2.0 tools on their studies, while 54% from US expressed the same sentiments (Hough & Neuland, 2012). Investigating why more students of UNISA experienced a positive inclination towards the use of web 2.0 than US do not typically answer the research questions of this study, but what is pertinent and relative are the online tools that have been identified and are being used by South African universities to impact teaching and learning in better ways.

Another important characteristic of web 2.0 on students' skills and knowledge of online assimilation is what they are able to learn for themselves from higher education to impart into the world of work. A current trend in information technology is business-to-business collaboration where business' functionality is supported by virtual applications like the web 2.0 (Rudman & Steenkamp, 2009). Since students are already familiar with internet usage, they impart their social computing tools into the workforce environment. This advocates a better experience in handling technological advancements.

What has transpired thus far from the literature suggests a broad overview of the potential use and possible difficulties experienced with web 2.0. It is therefore imperative, for the purpose of this study, to explore further specific web 2.0 tools that influence teaching and learning in higher education. The use of Facebook, Twitter and YouTube has been selected to elaborate on social networking tools that are currently used to serve online learning intentions.

Facebook

As technologies are being continually created or upgraded to support internet services of social networking in reaching more accessible heights of speed, convenience and cost effectiveness, higher education institutions have recognised that this can support their educational communication and collaboration (Roblyer, McDaniel, Web, Herman & Witty, 2010). Facebook is one of the most popular examples of communications technology that has been enthusiastically adopted by students, and has the power to become a valuable resource to all fields of education (Irwin, Ball, Desbrow & Leveritt, 2012). Facebook was originally designed for college students in the United States in early 2004 for the purpose of social networking (Petrović, Petrović, Jeremić, Milenković & Cirović, 2012). Despite a heated controversy over ownership rights, Mark Zuckerberg started Facebook, and today it has become a global phenomenon that has expanded into different educational settings (Petrović *et al*, 2012).

Immense development of ICTs has influenced pedagogical and technological processes. Social networking tools have not only become the new face of internet socialisation, but a recognised platform for educational means (Leitch, 2011). Research has shown that social network tools support educational activities by making interaction, collaboration, information sharing, active participation, and critical thinking a reality (Roblyer *et al*, 2010; Leitch, 2011; Irwin *et al,* 2012). Facebook is a website that affords users the environment to interact and collaborate within a virtual community. It has the ability to act as a web page, instant messenger, blog, email, and use third party applications for real time functionality (DiMicco & Millen, 2007). Facebook serves as an online site that enables people to create a public or private profile in order to connect and interact with others, irrespective of their geographical location (Irwin *et al*, 2012).

In this modern era of the 21st century, students are inclined towards authentic learning environments that can be supported by web 2.0 technologies (Petrović *et al*, 2012). The ideology lies in a robust teaching and learning context. Hence Facebook has become the social network of choice that tertiary education centres are quickly assimilating with. Faculty, who visualise teaching as a relationship with students, may view Facebook in a business-like manner to maintain that link. Consequently many institutions of higher education have bought this idea by creating their very own Facebook pages on which students can join and become active members (Roblyer *et al,* 2010). In a study conducted by Leitch (2011) relating to the use of social networking tools at tertiary level, results indicated that Deakin University in Australia had 7525 registered Facebook users, comprised of both current and past students. In a prior study carried out in 2008, undergraduate students were interested in using social soft-ware within a social sphere, but not the one proposed by the university (Leitch, 2011). In more simple terms, another version of Facebook was being projected to students. Once the Facebook webpage was introduced for Deakin University, many students came to the forefront in being apart of their online educational community. In the Faculty of Business and Law Units at the university, Facebook was used for a variety of teaching activities. This led to student engagement and informal feedback. Drawing from this study at Deakin University, Leitch (2011) contends that when facilitators and students are familiar with a social network for learning ideals, like Facebook, users are more likely to participate, rather than being estranged in an unfamiliar domain. Further, Leitch (2011) cautions universities in devising their own version of social networking sites that are irregular with the resources of the popular ones such as Facebook. Whilst it might be somewhat unique, the rationale for modifying a site for preference in a subject area could eradicate the confidence and convenience that students have in common social networking sites.

Over time, Facebook's momentum has increased, specifically for its ability to connect people, infuse collaboration, share information and strive towards cost effectiveness. For these reasons higher education institutions are determined to accommodate the needs of a tech-savvy generation. The literature thus far has portrayed that students' use of Facebook is two-fold, i.e. social and academic (Leitch, 2011; Liu, 2010; Roblyer *et al*, 2010). Experts in the field will confer that a realistic description suggests that the social position outweighs the educational one. In fact Wise, Skues and Williams (2011) contest the educational prestige Facebook assumes as a pedagogical tool. In their study examining the use of Facebook among first year psychology students, Wise *et al* (2011) blatantly point out that Facebook is presumptuously a distracting influence upon students' academic engagement. The results of the study convey that students spent more time on the site for social intentions relating to communication with friends, uploading photos and updating their 'wall'. The findings further reveal that efforts to encourage social engagement will not necessarily improve cognitive engagement congruent for learning (Wise *et al*, 2011).

The perceptions and reactions towards the use of Facebook as a learning tool in higher education are mixed. Problems relating to privacy and anxiety when conversing with professors has been voiced (Muñaz & Towner, 2009). Charnigo and Barnet-Ellis (2007) echo the sentiments of Wise *et al*, (2011) by disregarding the academic value Facebook may hold. Educators too have expressed dissatisfaction with using the site, particularly when they lack the relevant skills needed to teach using an online site. Given the prevalent challenges, the stark reality is that Facebook has a growing audience (Muñaz & Towner, 2009). In appropriating a meaningful online learning experience using Facebook, Khoza (2011) suggest that facilitators be given more time to learn the pedagogical tools through the support of the institution which has a responsibility to train them. Lui (2010) elaborates by encouraging instructors to understand student perceptions of social media, and thereafter design activities to suit this preference in a meaningful way. Given the demand for education and the exorbitant numbers of students entering higher education, Lui (2010) suggests that social media tools can ensure a better degree of communication with them. Also, higher education should invest in training of facilitators and technical support as to how best the implementation of Facebook as an online learning resource can be effective.

It is relevant to determine the merit of using Facebook as an online learning tool, and also to bear in mind the potential challenges that limit or prevent its use. Whatever the case, it has important pedagogical assumptions for the purpose of this study within the Curriculum Context and Change module. This may help to determine whether students are part of the social site for entertainment reasons only or perhaps have found a gateway for learning initiatives. Further it has the capacity to shed light on the facilitators experience with the social tool as teaching instrument.

YouTube

Institutions of higher education have employed the use of virtual learning environments and administer e-learning into their traditional modes of delivery subsequent to a blended learning approach (Evans, 2008). In contrast to traditional mechanisms, e-learning offers the benefit of allowing students to choose when, where and how they want to study. This entails the freedom students have to review information and acquire feedback. Innovative and engaging teaching in the direction of web 2.0 methodology is more than echoed by student needs in higher education (Popescu, 2010). A recent trend for developing technologies is the use of YouTube video-sharing website which has gained importance for in-class and online learning setups (Burke & Snyder, 2008). YouTube was initially established for social entertainment assumptions. It was developed in February 2005 and launched in November the same year (Lance & Kitchin, 2007). In its stage of infancy demand for the site grew radically in a period of 12 months, with more than a 100 million videos watched daily (Burke & Snyder, 2008). The current styles towards web 2.0 technologies indicate that video production and consumption rates are exponential (Copyright Clearance Centre, 2009). Billions of online videos are watched monthly, with more than 13 hours of video being uploaded every minute. Given the widespread attention YouTube has received globally, it has become the 4th largest website in the world (Copyright Clearance Centre, 2009).

The creative use of technology is not bound to what the mind can conceive. According to Liu (2010) YouTube is a convenient learning tool that can be used in a variety of ways. Users are able to upload, view and share video footage on www.YouTube.com and across the internet via other websites, mobile devices, email and blogs. This has catapulted YouTube as the most highly used resource for online video (Burke & Snyder, 2008). The ability to capture, edit and archive resources are within the capabilities of millions of people. Experts in the field of education agree that an essential component in promoting learning is when students are able to build content as an element of course requirements (Burke & Snyder, 2008). According to Burke and Snyder (2008) when students are able to create content they encompass a deeper understanding of the learning material. Students further develop insight and skills, and are immersed in online communities through content creation using YouTube. Simultaneously, exposure to experiential learning takes place not only through the content but also through the technology used. While the assumptions of this research do not dramatically focus on technology in itself, it still considers the importance of its influence upon the resources used for teaching and learning within colleges and universities.

The suggestion that YouTube is an efficient resource tool is less doubtful (Liu, 2010). On the condition of an internet connection, YouTube does not need a browser plug-in or a third party application to manage content, as with iTunes or podcasts. It is for this reason that YouTube is

regarded as a quick learning tool (Burke, Snyder & Rager, 2009). Although YouTube has been widely sought after for entertainment purposes, the educational aspects are perceived to assist facilitators with content delivery (Burke & Snyder, 2008). For instance, it can better showcase presentations and translate video caption to a different language to increase accessibility to other language students. This language feature is an important consideration for the South African context, considering the multilingual society students stem from. English is a second or foreign language for many South African higher education students. In many of the black schools, English, as a subject is taught, as a second language (Jaffer, Ng'ambi & Czerniewicz, 2007). Prior to 1994 black people in South Africa were marginalised which further created disparities in language. Consequently students from previously disadvantaged communities have to learn in their second or third language at a tertiary institution. Language and academic success are consistent with each other; therefore the academic language of the institution may be difficult to successfully comprehend in a second language (Jaffer, Ng'ambi & Czerniewicz, 2007). Perhaps it is relevant to consider the implementation of YouTube in South African universities and colleges as a tool for improving language proficiency, not just in English, but in others where barriers might exist. Since the role of ICT in higher education is envisaged and supported by the South African government, this could possibly lead to better academic engagement and the improvement of students' results (Czerniewicz, Ravjee & Mlitwa, 2006). Rudman and Steenkamp (2009) affirm that all South African higher education students are connected to the internet because of ICT facilities available at all institutions. In their study Rudman and Steenkamp (2009) contend that 76% of the respondents accessed web 2.0 sites at least once a week. This suggests the probability of using YouTube in the South African higher education context is possible, if used with the required skills and support. Relatively, Burke, Snyder and Rager (2009) recommend that YouTube be used as a teaching supplement because it can help students who are inclined to digital learning styles.

Thus far the attitude towards the use of YouTube as an instructional resource is considered valuable (Lance & Kitchin, 2007). Burke and Snyder (2008) propose that it is crucial for instructors to implement YouTube to assist students develop content that they find meaningful and engaging. When students converse with learning tools they can identify with, they learn marketable skills for future careers. Through YouTube, links can be integrated into PowerPoint presentations or documents, and online teaching platforms (Blackboard®, Moodle®) by cutting and posting the specific video URL shown on the YouTube site (Burke, Snyder & Rager, 2009). Faculties are using video to show documentaries, feature films, television news and entertainment programmes (Copyright Clearance Centre, 2009). Instructors are videotaping and posting lectures online through YouTube, thereby publically sharing and relating to a variety of topics within their domain of knowledge.

In a study orchestrated by Lance and Kitchin (2007) relating to the student cohort upon two Marketing Management related modules, namely Sports Management (SM) and Events Marketing Management (EMM), at London Metropolitan University, the use of YouTube was considered vital in suggesting an innovative approach to teaching concepts. Videos for the Innocent Drinks Company, McDonald's advertisement and Citroen motor car were used to illustrate how companies portray their ethical and sustainable business practises, and their stance on social responsibility. A Daily Mail Ski and Snowboard Show video was also used to illustrate how events incorporate features to enhance customers experience. This was used to support the EMM module. In the SM module YouTube videos were used to support historical and social contexts, and marketing communication campaigns. By introducing concepts through tools such as YouTube, Lance and Kitchin (2007) suggest it can stimulate students' interest. They claim that it is a valuable resource to large numbers of students and that is also re-usable, can present real-life problems and bring relevance to the module. However the study sheds light on areas of concern that could limit or hinder the use of video as a learning resource. Issues of quality and availability of video clips is a prevalent one. Lectures might find it time consuming in having to look for substitute video clips if the initial one is problematic. Hence Lance and Kitchin (2007) stress the importance that multimedia resources be more readily available in institutions of higher education. The cost factor also represents one of the fundamental reasons for institutions failing to do so. Liu (2010) gives consent to the issues raised by Lance and Kitchin (2007), and extends the discussion by pointing out that since responsibilities are divided into technical support and academic training and consultation, this expansion has curtailed huge amounts of financial and human resources.

Although there are challenges that arise to prevent or limit the use of YouTube facility as a learning resource, the literature thus far advocates for its potential use. The study by Lance and Kitchin (2007) not only suggest why YouTube as a resource was used, but also how it has been implemented to support students' understanding and development of marketing concepts. The Copyright Clearance Centre (2009) reveals that a range of high-quality and valuable audiovisual material are being digitised and made available online by cultural and educational institutions. Burke, Snyder and Rager (2007) maintain that YouTube as a pedagogical tool may in fact encourage synthesis of course content and sustain student engagement. Further they argue that if facilitators can be trained or skilled in using this type of technology, it can entail a more interactive learning experience.

Twitter

Technologies have been envisaged as the latest means to constructivism, in an effort to produce responsible students who are in charge of their own learning (Conole & Alevizou, 2010). Simultaneously, this leads to the development of the social dimensions of learning that cannot be ignored. It is vital to consider this since threads of constructivism have been used to influence the theoretical assumptions of this study. Dalsgaard (2006) adamantly conveys that social soft-ware tools can assist a social constructivist approach to e-learning by equipping students with personal tools and to immerse them in social networks. In this sense, web 2.0 environments inculcate an atmosphere of exploration and creativity, assuming independence for one's own learning through communication and collaboration. A more recent resource of web 2.0 technologies that has gained widespread momentum is the social networking service of Twitter. Twitter is a real-time information network that allows users to connect via micro-blogs referred to as tweets (Wagner, 2011).

The aim of Twitter is to *follow* others without being *followed* back, and all posts are made public. The short message postings, called tweets, consist of a maximum of 140 characters in length (Leitch, 2011). A tweet is a text-based message designed for mobile application to be used anytime and anywhere, conducive to messages being sent and received (Wagner, 2011). Twitter was introduced in the year 2006 as a side project for a podcasting service called Odeo. Currently Twitter has a total number of 554,750,000 active registered users, with 135,000 signing up everyday (Twitter Huffington Post, e Marketer, 2013). The average number of tweets per day is 58 million. The statistics not only suggest the immense favourability the social network has service has found, but according to Venable and Milligan (2012), Twitter has the potential to enhance learning and professional development through network building and new collaboration.

In South Africa, university students are the most frequent users of the internet because on the increased accessibility to computer facilities on all campuses (Rudman & Steenkamp, 2009). Wagner (2011) contends that Twitter creates a platform to connect with students outside of the classroom domain in a way that is unprecedented. The nature of web 2.0 technologies is such that learners have easy access to the expertise of others within authentic environments, where information is disseminated to all involved, with valuable feedback (Conole & Alevizou, 2010). For instance mobile apps and desktop applications create efficient access to Twitter accounts and provide incoming news feeds on various devices such as tablets, personal computers and smart-phones. In addition, multiple computer platforms and operating systems are responsive to Twitter technology (Venable & Milligan, 2012). This suggests that it is possible to incorporate Twitter into teaching and learning activities because it is user friendly, popular amongst students, and easily accessible.

Twitter caters for both asynchronous discussion forums and synchronous conferencing systems, and can therefore invoke new aspirations towards transforming online course discussions. Venable and Milligan (2012) indicate the process in which Twitter can be implemented in an online learning environment. A live chat commences when all participants are online at an agreed upon date and time, using a common hash tag (#) to show that their tweets are linked to a unified discussion. The hash tag allows the Twitter stream to be filtered so that just the participants' messages are included. One can follow or join the live conversation via a Twitter platform or management tool using the assigned hash tag to each tweet. Searching for and following hash tags creates an overall impression of all participants involved in the discussion. A topic is chosen beforehand with possible related questions that are posted in advance of the live chat, to prepare students. The chat moderator opens the live session by "welcoming participants, facilitating conversation and discussion, and monitoring the time" (Venable & Milligan, 2012; p. 5).

The process described above has been articulated in the study by Leitch (2011) at Deakin University, whereby Twitter was used as a means to support postgraduate students of Masters of Information Systems, Masters of Commerce and Masters of Business Administration. The purpose in selecting Twitter was to give students more information about current trends in information security and to motivate them in reflecting upon current events, and to serve as a reminder of forth coming assignment dates. This later filtered on to the Blackboard site (common online site for the university) to create awareness for those who wanted to be part of Twitter discussions and were initially unaware.

Venable and Milligan (2012) advise that Twitter chats are relevant for conducting class discussions and facilitating other means of student-instructor communication. However, as with shortcomings experienced with the implementation of any teaching and learning resource, there is the possibility that students may experience difficulty in accessing Twitter. In the study at Deakin University, one off-campus student did not have internet connectivity at home, and due to work restrictions could not access Twitter. Therefore the student could not be apart of the meaningful discussions that commenced. Nevertheless web 2.0 technologies are becoming increasingly available to more people through lowered costs and government intervention at higher education institutions to create greater accessibility. Leitch (2011) recommends that tertiary institutions affiliate themselves with these types of technologies, like Twitter, to accommodate the techno inspired generation of students swamping campuses with this new wave of learning. This suggests that it is relevant to consider the application of using Twitter to assist teaching and learning practises.

2.3 POTENTIAL USE AND POSSIBLE LIMITATIONS OF IMPLEMENTING AN ONLINE TEACHING AND LEARNING PLATFORM

Thus far it has been discussed at lengths the stringent position online learning has in creating more accessible opportunities for students at higher education as well as the challenges in allowing and implementing this approach. The researcher found it relevant to specify further, yet briefly, the advantages and disadvantages of acclimating to an online style of teaching and learning. This was done in order to develop a better understanding of the results of the research thereof.

2.3.1 Advantages of Online Teaching and Learning (Kim & Bonk, 2006; Board of European Students of Technology, 2007; Leitch, 2011).

- Allows flexible schedule of e-learning teaching.
- Leads to an improvement in the success of the student and better evaluation thereof.
- Participants can use their time efficiently and also save time.
- English language of students can be enhanced.
- Encourages environmental awareness by reducing a significant amount of paper used.
- Work and study time can be combined.
- Creates greater educational opportunities and better access to the workplace.
- A wider range of courses can be developed.
- Can be accessible anywhere, provided there is internet connectivity and a desktop computer.
- Induces a richer experience for individual education.
- Reduces costs and thereby creating more accessibility to lower income communities.

2.3.2 Disadvantages of Online Teaching and Learning (Kim & Bonk, 2006; Board of European Students of Technology, 2007; Leitch, 2011)

- Can incur poor team work which leads to isolation.
- Poor physical contact between students and facilitators.
- Insufficient training by tertiary institutions to facilitators can inculcate an injustice to teaching and learning.
- Students can be easily distracted by social networking sites.
- Shortage of equipment and computers can be a serious challenge.
- Can lead to plagiarism and cheating by students.
- Although multicultural interaction is envisaged, it can be difficult to handle.
- Language barriers can make communication difficult.

- Participants located in different time zones can pose serious problems for timing especially when meeting online for a lecture.
- Information exchange can be stopped prior academic time.

2.4 CONCLUSION

Undoubtedly, technology has been an agent of significant change that has fuelled our current knowledge system to the extent that the present generation of students are widely dependent on the resources of a computer and the internet (Tutkun, 2011). The literature has provided an account of the use of online resources in teaching and learning at higher education institutions, in the context of developing and developed countries internationally. The researcher also sought to withdraw from studies in Africa, and of essence South Africa, to inculcate a deeper understanding of the influence of an online learning platform. The findings and divergent ideologies that emerged from these studies provided a groundswell of information, in that the researcher was able to ascertain the impact of e-learning on tertiary institutions. This has sparked current interest blended with differing and contentious views held by various scholars in the field.

The literature revealed that the implementation of ICT as a mechanism for learning in the field of curriculum enables students to become competent, creative and productive users of online tools. However, this perception has been overshadowed by the insurmountable problems related to successful integration, particularly in Africa (Gajendran, 2007). Many facilitators still utilise a teacher-centred approach because they lack the IT skills necessary for teaching of their subjects (Tella & Adu, 2009). Further, Khoza (2011) reveals that there is insufficient support from tertiary institutions. Facilitators require training in terms of vocabulary, policies and structures of teaching in a web-based learning environment. Tantamount to these are the difficulties associated with accommodating students from diverse backgrounds, large class sizes and a multilingual society reflective of the diverse nature of South Africa's population.

Despite the challenges that prevail, the literature provides a holistic sanguine position of the potential e-learning holds in broadening the path to educational opportunities through distance programs and a blended learning approach. ICT implementation enhances the quality of teaching and reduces the costs for higher education, hence affording a feasible opportunity for students to obtain better access to teaching and learning (Curran, 2004). In supporting this, governments have acclimated to a global transition of examining pedagogical practises in higher education. Therefore integration of ICT into policies and frameworks has been sanctioned by governments in developed and developing countries.

While conducting the literature review the researcher was able to identify various concepts that propagate a sense of the 'digital divide'. However this is highly debatable because it surpasses issues of students' contextual factors, such as gender, class and ethnicity that must be taken into perspective when determining the kind of students that higher education encounters.

In a summation of what has been discussed, this chapter has critically reflected on the potential benefits and challenges of using online resources in teaching and learning at higher education institutions. This has been pre-empted by reports conducted and the literature reviews that surfaced. Technological developments have immensely challenged traditional ways of educating, to the extent that it has been entrenched in government policies regarding higher education. It is anticipated that this transformation has implications for the skills-sets of the future workplace by creating more accessibility through technological advancements in education (Glenn, D' Agostino & Johnson, 2008). This then becomes a priority for societies that still struggle to implement such changes. Globally, institutions of education are obliged to be prepared in their best endeavour to take advantage of these opportunities and to ensure that they maintain a degree of competitiveness.

CHAPTER THREE

THEORECTICAL FRAMEWORK/CONCEPTUAL FRAMEWORK

3.1 INTRODUCTION

An overview of the literature in the previous chapter concerning the use of online resources as a means for teaching and learning within higher education institutions indicated the potential use of online tools and the possible limitations that exist. Central to this chapter is the paradigm in which the research takes place and the theories of learning implemented to support this study. All research is based on some theoretical assumption to underpin the development of knowledge in a study. In order to conduct and evaluate any research, it is an imperative to understand what these assumptions are. Therefore this study takes place within an interpretive paradigm and is supported by the theoretical base of Cultural Historical Activity Theory (CHAT) or Activity Theory (AT) developed by Lev Vygotsky (1978); later expanded upon by Leontév (1981) and Engeström (1987). This chapter begins with a discussion on the interpretive paradigm and then extends to a background of earlier learning theories relative to technological developments in education. Next a brief analysis of other recent learning theories will be used to introduce activity theory. Consequently a comprehensive account of CHAT in conjunction with the purpose of this study will be highlighted thereafter.

3.2 RESEARCH PARADIGM

One of the most crucial aspects of a human social setting is to comprehend the context in which they inhabit (Krauss, 2005). Society is representative of culture, understandings, norms, social reality, beliefs, stereotypes, and worldviews as a prerogative to individuals' construction of meaning (Lofland & Lofland, 1996). A paradigm is envisioned as a set of basic beliefs that symbolise a worldview that explains, for its holder, the nature of the world and their place within it, and considers their relationships to that world and its components (Guba & Lincoln, 1994). Kuhn (1962), a founding expert in the field of paradigms, defines it as an integrated cluster of substantive concepts, problems and variables assimilated with relative methodological tools and approaches. Hartley and Davies (1978) postulate that a paradigm represents a more thorough conceptualisation of an idea or theory involving definitions, statements and an interconnectedness between these statements. A paradigm may warrant an expression through words, numbers or some type of visual display. Christiansen *et al* (2010) propose that within a paradigm it is relevant to determine the research questions as a prerequisite. This will then lead to what can be observed and investigated, how data will be generated, and how the findings will be interpreted. This can inculcate a broader perspective on the nature of reality in the field of study. Different research paradigms and models are established on varying philosophical foundations and conceptions of reality (Cohen, Manion & Morrison, 2000). Terre Blanche,

Durrheim and Painter (2006) explain that the research process entails three significant dimensions: ontology, epistemology, and methodology. *Ontology* means the nature of reality that is to be studied, and what can be known about it. *Epistemology* specifies the nature of the relationship between the researcher and what can be known. *Methodology* suggests how researchers undertake to study whatever they believe can be known. According to them a research paradigm is a representation of interrelated practise and thinking that determines the nature of enquiry in alignment with the three dimensions. Along these parameters, this study takes place within an interpretive paradigm and will now be discussed in the context of a Curriculum Context and Change module at a higher education institution in South Africa.

3.2.1 THE INTERPRETIVE PARADIGM

Every aspect of life can be traced to the way people behave in their day-to-day interactions. Interpretive researchers assert that reality is dependent on people's subjective experiences in the world. They argue that there is no single route or method to knowledge (Christiansen *et al*, 2010). This paradigm of research stemmed from the social sciences and has also become relevant for educational contexts, through which the interpretive goals determine how something works by describing and interpreting phenomena regarding domain processes, performances and innovations (Reeves, 2000). In this study the researcher will determine what online resources are used by facilitators and students, how they are implemented, and why it has been regarded as tool for teaching and learning in the Curriculum Context and Change module.

The interpretive framework is qualitative in nature and enables the researcher to visualise how events or phenomena are viewed differently from multiple perspectives in real life contexts (Mack, 2010). For interpretive researchers organisational and social realities are constructed as a mechanism of theorising, and this shapes and impacts the reality that is part of the social and cultural context in which it occurs (Kim, 2003). The philosophical base of society and culture in the interpretive paradigm is synonymous with the theory underlying this research, Activity Theory, which indicates that all activities are social and cultural in nature (Amory, 2006).

Interpretivist's underlying tenet is that research cannot be objectively observed from the outside but rather from the inside via the direct experiences of people (Mack, 2010). Contrary to this belief, Kim (2003) argues that the subjective and contextual nature of interpretive research results is a hindrance for researchers who aim to generalise the findings to other organisational environments. Hence the transferability of findings to other settings may be dismal, but not impossible. Yet Christainsen *et al*, (2010) contends that the principle of the interpretive paradigm is not to generalise the results, but specifically to make sense of people's experience through their personal interactions. This supports the ontological and epistemological assumptions that

indicate social reality is seen by multiple people, who interpret events differently, and that knowledge is achieved through personal experience. These forms of knowledge suggest that the best way to determine and understand the ways in which the facilitator and students use online resources is to view them within their context, i.e. Curriculum Context and Change lectures. More over the interpretive paradigm is underpinned by observation and interpretation; to observe is to collect information, while to interpret is to make meaning to the extent of judging or making inferences to divulge some abstract pattern (Kim, 2003). In this study the researcher will be available and present during lectures to make observations, and thereafter to conduct semi-structured interviews with participants as per agreed times. This will greatly assist the researcher in determining the facilitator's and students experience upon interaction within an online environment. The interpretive paradigm also renders the researcher as the primary data-gathering instrument, using constructed questions focused on understanding phenomena, through interviews and observation in their surroundings (Denzin & Lincoln, 2003).

3.3 BACKGROUND TO LEARNING THEORIES

Learning theories are conceptual frameworks that indicate how information is received, processed and retained during learning (Wells, 2007). Learning incorporates cognitive, environmental and emotional aspects for receiving, improving or developing a person's knowledge, values, skills and beliefs. The physical changes children have to undergo during their development as teenagers is reflective of the progression of their cognitive abilities'. Controversy over the birth of *learning* amongst people began as early as the existence of Greek philosophers Socrates (469-399 B.C), Plato (427-347 B.C) and Aristotle (384-322 B.C) (Darling-Hammond, Rosso, Austin, Orcutt & Martin, 2001). Aristotle believed that people used senses to search for truth and knowledge beyond ourselves that inspired a scientific route for achieving information. Conversely, Plato held the view that knowledge and truth can be discovered by self reflection. Socrates affirmed that specific knowledge could only be gained through reason, and believed that research is relative to a dialectic mode of discovering truth through conversations with people (Darling-Hammond *et al*, 2001).

Another portal for transferring knowledge to citizens was the powerful influence of the Roman Catholic Church. Parallel to Greek methodology, the Romans perceived education as vocational training rather than discovery of truth (Darling-Hammond *et al,* 2001). The Renaissance led to the development of individual inquiry and discovery. Pioneers of this era, Descartes (1596-1650), Locke (1632-1704), Rousseau (1712-1778) and Kant (1724-1804) celebrated the conceptual outlook of a child's development dependent on experience. At this period in time learning history reached one of its most crucial discoveries, recognition of the cognitive processes of the mind

(Darling-Hammond *et al,* 2001). Since then many of today's theoretical base for learning makes some reference to cognitive truths that have been established during the early 1600s and 1800s.

The dawn of the 1900s propelled the theory of behaviourism as a predominant paradigm for examining learning. The theory of behaviourism concentrates on the study of overt behaviours that can be measured and observed (Good & Brophy, 1990). The behavioural approach encompasses the learning approach as a change in behaviour in which instructors cordon the environment to produce the desired responses through behavioural objectives (Wikipedia, 2013). This analysis of learning was primarily developed by Skinner and included the work of people like Thorndike, Pavlov, Hull and Watson (Wikipedia, 2013). Behaviourism aligns within a post-positivist or positivist paradigm because of the intent to describe, control and predict how learning takes place (Christiansen *et al*, 2010). Research in this field believes there are patterns and a sense of order that one can discover; inconsistent with the values of modern learning strategies that rely on the experiences of students own learning process.

Three basic tenets surround the ideology behind behaviourism. Firstly, learning is reflective of change in behaviour. Secondly, the environment moulds and shapes behaviour. And thirdly, the principles of contiguity and reinforcement are pivotal to the learning process (Illeris, 2004). The learning platform is dominated by the competencies, knowledge and skills of the teacher, thus a teacher-centred pedagogy is envisaged. This support the epitome of behaviourism, i.e. learning is the acquisition of new behaviour through conditioning. Although modern learning theories are repulsive of the very nature of conditioning, the behaviourist learning theory has been relevant in guiding the development of sequenced and structured curricula (Mergel, 1998).

One of the pitfalls of the behaviourist theory was the inability to explain certain social behaviours. Hence the rise of cognitivism in the 1900s incorporated two key approaches; that the memory system is an active organised processor of information, and that previous knowledge holds an integral component on learning (Wikipedia, 2013). Cognitivists' prioritise brain-based learning as well as articulate on how the human memory works to simulate learning. In a cognitivist environment the educator structures the content of learning activities to build on intelligence and cognitive development. Hence, learning is captured in the image of a content-centred approach. This theory falls within the post positivist

Another view of learning that has made a mark in educational psychology is the theory of constructivism. Constructivists assert that students construct their own reality based upon ideas or concepts from past and present knowledge (Wells, 2007). As a result, the constructivist approach is significantly learner-centred because of the freedom and opportunity students have

in developing their own learning. Threads of constructivism may also be attributed to the work of Ulrick, Neiser, Goodman, Kant, Kuhn, Dewey and Harbemas, who concur that reality is a sequence of a process of social negotiation, whereby students construct mental structures that are congruent to external ones that exist on the environment (Mergel, 1998). The paradigm associated with constructivism is the interpretive, because researchers in this realm assert that people's actions cannot be predicted, but rather are influenced by how people make sense of their worlds in their own stride (Christiansen *et al*, 2010).

It is relevant to address theories of learning derived from previous generations to demonstrate how learning has evolved and progressed, and to appreciate the one identified in this study. The learning patterns and methodologies during that time were conducive to the environment inhabited. However it is more than sufficient to mention that during that era learning had not been influenced by technology to the extent at which it has been today. However, this does not to denounce or claim that earlier theories are unsupportive of technological advancements in education. In fact, present day researchers commend the role of reinforcement in the development of skills, and the influence of cognitive learning in driving forth intent, effort and reason (Darling-Hammond *et al,* 2001). They acknowledge the need for developmental stages that can be stimulated through social interaction and the structuring of experiences within the learner's ability of readiness. This suggests support towards former theories of learning, but the extent to which it can be successfully acclimated to technology is somewhat unclear (Siemens, 2004). Unwin (2007) cautions that technology used in the absence of a sound theoretical framework or pedagogy may not be very effective in reaching programme goals.

The current plethora of learning envisages a student-centred approach to education (Liu, 2010), contrary to traditional methods. There is an ever-pressing need for collaboration, interactivity and authenticity across a wide spectrum of student activities vocalised by educational institutions (Liu, 2010). The introduction of ICT in education encapsulated a theme of independent learning, in which students take charge of their own learning almost anywhere at any time through internet connectivity (Kirkup & Kirkwood, 2005). Just as theories of behaviourism, cognitivism and constructivism were created to theoretically describe learning activities at the time, so too have modern theories been developed to support the tech-stewards of the 21st century. Consequently the researcher has selected Activity Theory (AT) and Cultural Historical Activity Theory (CHAT) to guide this study. CHAT has been developed as a spin-off to AT, hence both will be used interchangeably during this study. Amory (2006) conveys that CHAT has been instrumental as a theoretical framework in the design of technology enhanced courses. AT signifies the ideas of collaboration, development, intentionality and mediation (Nardi, 1996). A fundamental aspect of AT is the principle of tool mediation that describes human activity driven towards an overall goal,

oriented by the use of tools (e.g. instruments and devices) (Wang, 2008). Such an environment creates space for tapping into relevant resources/tools that are beneficial to facilitators and students. Therefore AT has been chosen to underpin the theoretical framework for this study, in providing a deeper analysis.

3.4 ACTIVITY THEORY / CULTURAL HISTORICAL ACTIVITY THEORY

3.4.1 Historical Insight to the development of Activity Theory

As a Russian Jewish scholar Lev Vygotsky had been implored with the task of reformulating psychology from a Marxist philosophical platform, by the then Soviet Union of Russia (Hardman, 2008). The premise behind this approach can be traced to the conflicting and confusing views of other psychologists who could not reach consensus regarding the subject matter for psychological research and relevant methodologies for studying psychology as a science. Contrary to Vygotsky's ideology surrounding psychology, he did not agree with the mainstream direction toward transforming psychology into a scientific field by treating the organism and the environment as separate entities (Yamagata-Lynch, 2010). Instead he perceived that psychologists needed to align along a unified framework that echoed an objective study of human consciousness (Nardi, 1996). Consequently Vygotsky positioned his psychological awareness from a Marxist perspective, to exhibit the relationship between individuals and their social environment. Marx's political theory is central to collective exchanges and material production in examining the organism and the environment as a single unit of analysis, and this became a foothold for Vygotsky's interpretation of psychology. He believed that the relationship between a person's mental processes and their interaction with historical, cultural and institutional settings were paramount to their psychology (Yamagata-Lynch, 2010). Thus he introduced the concept of mediated action to iterate the semiotic process that allows human consciousness development through conversing with artefacts, tools and others within a social context. Significantly this process evolved into what become known as a theoretically relevant discourse for examining technological environments in this present era, namely, activity theory, and further developed into Cultural Historical Activity Theory (CHAT) (Tsai, Gaylen, Xie & LAffey, 2010). Although only a brief account of the historical birth of activity theory has been mentioned, it does offer some perspective as to how this theoretical framework can inform this study, particularly so that activities of collaboration, a sense of community and interaction have been identified in the use of online resources in the literature. This supports Vygotsky's view that mental processes and interaction, whether cultural, historic or institutional are important to a person's psychology. At this point the study will consider a deeper analysis of activity theory/CHAT.

3.4.2 Activity Theory in Essence

An activity comprises of the events that unfold and the consequence of such for participants that can qualitatively change them, their goals, reasons for participation, the environment and the activity itself (Kaptelinin, 2005). Human activity is a dynamic process that includes artefacts that pose as technical tools and signs that symbolise psychological tools available in the social context (Yamagata-Lynch, 2010). This process shapes and moulds the individual's consciousness within a changing environment. The activities that take place within this atmosphere indicate an organisation of information about mediated social activities that posit interconnectedness and indistinguishable relationships within the components of an activity system. (Nardi, 1996).

Learning is a process of determining connections between what is already known with new information (Darling-Hammond *et al*, 2001). They make assimilations based on an inclination of what they have experienced. What takes place at home or in the community is an indication of their learning values. Thus the role of activity theory in research provides a set of perspectives on human activity and the concepts assigned for describing that activity (Robertson, 2008). Karasavvidis (2008) argues that activity theory is an ideal tool for which a researcher can embrace and conceptualise what works and what does not work in an activity. Further Karasavvidis (2008) describes it as a theoretical tool for underpinning conflicts or contradictions that can be confronted within the components of an activity system. This suggests that it is possible to use activity theory for this study because it can help the researcher identify what online resources/tools are relevant for the Curriculum Context and Change module, and those that merely serve as entertainment options to substitute boredom (Wise *et al*, 2011). In a similar tone Engeström (2001) identifies the contradictions that linger in the activity system which can assist researchers/practitioners to focus their attention on challenges that limit students' learning potential, and the remedial action to bring transformation to the system. This not only condones Karasivvidis' (2008) view but also suggests that the inconsistencies that arise must be viewed in a light of exhibiting change and development. It is relevant for the researcher to understand this point because possible results or expectations could be anticipated and a deviation from this should not disappoint but assist the study in bringing about strategies that can facilitate implementation of appropriate online resources as a pedagogic guide.

Integral to the framework of activity theory is the principle of tool mediation that explains human activity driven towards an overall goal (object) which is mediated by the use of tools (e.g. instruments or devices) (Kirkup & Kirkwood, 2005). Similarly, Nardi (1996) supports this perception by advocating a strong notion of mediation in activity theory derived from human experience, influenced by the tools and systems employed to sustain teaching and learning.

Consequently, Nardi (1996) adamantly points out the room for change and growth through the utility of activity theory, because it is designed to cater for constructivist learning environments. A central assumption of mediation is that a child can attain more with guidance and help, than what he/she can achieve on their own (Hardman, 2008). The element of facilitation is located in Vygotsky's Zone of Proximal Development (ZPD) where mediation takes place (Daniels, 2001). The ZPD articulates the gap between what a student can accomplish with assistance and what he/she can gain on their own (Vygotsky, 1978). Although the ZPD is not the crux of theory underlining this study, it is valuable because form a CHAT perspective the ZPD is a conceptual tool for understanding the complexities associated with human activities, while individuals make sense of their worlds through interaction with their surroundings (Yamagat-Lynch, 2010).

Leontiev identified object-oriented activity as the unit of analysis in activity theory. Object-oriented activity includes the interaction among subject, object, mediating artefact, rules, community and the division of labour (Hardman, 2008).

3.4.3 Characterising Cultural Historical Activity Theory

A pivotal aspect guiding CHAT or AT is the premise that all activities, whether inter- or intra-psychological, are social and cultural in nature where *actors* transform an *object* (Leont'ev, 1978). *Objects* are regarded as cultural entities that denote communal social transformation practises and further grow during human activity (Hardman, 2008). The outcomes of any activity occur from *actors* interrogating *objects* by means of *tools* that mediate the interaction (Amory, 2006). Thus the rules mediate the relationships between *actors* and the *community,* whilst the *division of labour* mediates between the *community* and the *object,* and the *object* and the *community* between the *actors* and the *object* (Li & Bratt, 2004). Activities are captured in the image of individual and cooperative actions and the links and networks of such are affiliated with each other by the same overall *object* and motive (Kuutti, 1995). The activity system model accentuates elements of the particular context that must be considered when examining tool use within an environment e.g. the use of ICT tools in a specific higher education institution (Kirkup & Kirkwood, 2005). This ideology is synonymous with the assumptions of this study since it takes place in a university setting and endeavours to examine the tools that are being implemented. It is therefore relevant at this stage to provide a more epic analysis of the activity system model by examining each component involved. This will not only frame the activity system viable for this study, but also develop a better understanding of the tools that are and those that may not be useful to the Curriculum Context and Change module.

3.4.3.1 Subject

According to Li and Bratt (2004) the subject refers to the individual or group whose point of view becomes a reference for the unit of analysis. Kain and Wardle (2008) confirm this perception by adding that the subject (person or people) directly participates in the activity a researcher undertakes to investigate. Essentially the subject will divulge their particular beliefs, values and assumptions that bring a different history to the activity system, and it is within this spectrum a researcher determines how the subject is related to other components of the activity (Thuraisingam, Kaur, Yeo, Briguglio, Sanderson, Mahmud & Wallace, 2012). Given this understanding, this will help answer the second research question of this study, which relates to how participants (subject) use online tools (component) to facilitate their learning.

In a study conducted by Joyes (2006) underlying the training of tutors in the use of online learning activities, the subjects of the activity system comprised of the online tutor and the students. In another study investigating a socio-cultural approach into the integration of ICT into the classroom Tay (2011) identifies the subjects of the activity system as the school administrator, teachers, technical staff, students and administrative staff. Tay (2011) extends the discussion to explain that the school administrators include the principal and vice principals whose main purpose is to give direction and guidance for all staff and students. Educators assume the position of teaching students and converse with technology as a pedagogical approach. The technical staffs, directed by the ICT coordinators, assumes a vital role in the activity system as they set up the schools' wireless network, sort out technical glitches, and distribute desktop computers in the classrooms and computer laboratories. The administrative manager and operations manager lead support staff in dealing with issues relating to finance and the daily operation of the school. Lastly the students are immersed with learning in conventional ways that include the use of ICT tools (Tay, 2011). These positions each person or group in the school holds is symbolic of the role of the subjects as a component in the activity system. It indicates that each has their own particular duty to fulfil. Whether they possess a minimal or greater influence, each subject has an important role, in that they are dependent on each other to some extent, directly or indirectly, to ensure the successful integration of ICT into pedagogic practises. In viewing the activity systems of Tay (2011), Joyes (2006) and others helps the researcher in determining the subject/s in this study. Therefore the researcher has identified the facilitator and the students of the Curriculum Context and Change module as the subjects in the activity system of this study.

3.4.3.2 Tools (Resources)

As people converse with one another to strive towards achieving goals, they develop and implement tools to facilitate their activities (Kain & Wardle, 2008). The presumption is that tools

assist people in solving problems more effectively and because of this mechanism the tools employed can change the activity as desired. A tool can relate to anything that is used in the transformation process, including both material tools and tools for thinking (Kuutti, 1995). Kain and Wardle (2008) suggest that the tools that mediate the activity system can also include physical tools such as computer, texts, as well as non-physical tools such as language (written and oral) and skills. They further assert that the first experience in using a certain tool is used at a level of 'conscious action'. This means that the person must think about how to use the tool and the purpose for which it must serve. This is an important consideration in that students and facilitators will determine their own reasons for using online discussion forum of chat rooms in helping their learning, and not only as some instructive pedagogy. It also emphasises why the resource tool has been implemented; relating to the third research question of this study. Frequent use of that tool ensures that it becomes operationalised; a reflection of 'unconscious' development. The tool only reverts to the sphere of conscious action if there is a problem and the user is confronted with a new action to perform with that tool (Kain & Wardle, 2008).

According to Kuutti (1995) the function of the tool is one of mediation between the subject and object. Joyes (2006) confirms this view of Kuutti (1995) by elaborating that e-learning tools (e.g. an online discussion forum) leads to collaborative learning that can be represented in an activity system. In view of this perception this study implements activity theory as a framework for supporting the findings.

In the study briefly mentioned by Joyes (2006) earlier, the tools in the activity system included email, discussion forums and online video presentations to aid the understanding of students and motivate engagement. Other tools included diagnostic and pedagogic-related concepts and ways to help the tutor develop an empathy and understanding of the students in the greater context for learning. In the study tutors could use online discussion to give their analysis of teaching and learning, determine the needs of students and the views conveying the nature of support required (Joyes, 2006). Joyes (2006) contends that the nature of each activity component depends upon the context of learning. In explaining this Joyes' (2006) study uses the Learning Activity Analysis Tool (LAAT) on the e-Education training module to engage trainee tutors in a discourse around the nature of a group reading task with students. The activity uses online video clips and online video presentations relating to effective reading at Masters Level to facilitate learning. This suggests that online tools can be used in a learning activity to ensure a better degree of understanding and effectiveness. Joyes (2006) concludes the study by revealing that the different pedagogic approaches to online tutoring from teacher-driven to student-focused provides a channel for discussing the nature of effective support within each particular learning context.

Other studies also evidence an array of online tools integrated into their activity systems. Tay (2011) records the tools of word processing, presentation soft-ware, digital images, cloud computing, blogs, mobile storage, charging units and online websites in the activity system designed for the study. Kirkup and Kirkwood (2005) include digital files, paper documents, zip file applications, file sharing and the internet as online tools to interpret the impact of ICT upon teaching practises. Amory (2006) proposes soft-ware tools such as Google document and presentation, Mindmap, Weebly and Story Board to facilitate his activity system. Tools contain historical and cultural meaning, and the object is facilitated among the constraints denoted by the tools. Crucial to progression is that tools change over time and new ones are created and implemented with the development that takes place. Kirkup and Kirkwood (2005) caution that sometimes changes happening in higher education are inconsistent with teaching practises because they are not taking place where research attention is being directed. It is important for higher education institutions to understand this in order to establish the means to succumb to such changes to enable a more effective experience with teaching and learning. The argument thus far regarding the use of online resources in activity systems in the different studies suggest that this supports knowledge construction in a designed activity system (Amory, 2006).

In explaining the function and use of tools in an activity system of other studies lays the foundation for examining the tools that will be implemented in the activity system of this study. Consequently the tools include discussion forum, search engines, chatroom, and web 2.0 tools such as Facebook, Youtube and Twitter that the facilitator and students might use. Alternatively if any new tool participants might use beyond that expectation of the researcher will be included in the activity system.

3.4.3.3 Object

Activity theory is consumed by the disposition of rearing activities towards specific goals (Kain & Wardle, 2008). It provides a gestalt view for understanding how people in different communities evolve their actions into activities. This sense of diversity can be explained by the specific tools, knowledge and repertoires of tasks that people use to achieve objectives. The *object* refers to the problem area in which the activity takes place and is shaped and transformed into outcomes with the assistance of physical and symbolic external and internal mediating instruments, tools and signs (Engeström, 1993). Basically, the *object* is the goal of the activity. It has also been used interchangeably with the *motives* for participating in an activity, or a comparison with the material product that participants attempt to achieve through an activity (Yamagata-Lynch, 2010). Primarily the object is the reason why people opt to participate in an activity. Object-oriented activity involves mediation processes whereby people take part in the endeavour of acquiring

goals and utilise motives that directs them in implementing new artefacts or cultural tools to make the activity more robust (Yamagata-Lynch, 2010).

As mentioned earlier, the study elicited by Tay (2011) emphasised that the subjects of the activity system have to have one common objective i.e. the use of ICT for teaching and learning. Since the object and outcomes are used interchangeably, the outcomes of the study include all participants (subjects) working with a unified approach to bring ICT into the curriculum (Tay, 2011). A proper establishment of the objectives sets the subjects in a clear cut direction of having purpose and achieving goals.

Stetsenko (2008) brings an interesting perspective to the prism of objects in the activity system. The suggestion conveys that objects are cultural entities that embody communal social changes that further evolve during human activity. A portrayal of this concept is found in the work of Barab, Schatz and Scheckler (2004). In the initial development of an activity system in their study relating to a socio-technical interaction network (STIN) deigned to support a web-based community of in-service and pre-service mathematics and science teachers to improve their pedagogic methods, the activity system evolved as a consequence of the activities that took place. The first development of the activity system concentrated on the e-Inquiry Learning Forum and teachers' conceptions of inquiry as objects. This later evolved into the object containing STIN of the e-Inquiry Learning Forum. The premise governing the change of object comes from a need for members to not only use the STIN but also transform it by adding new information in the teaching and learning realm that can assist others (Barab *et al*, 2004). This indicates that even as people use the Inquiry Learning Forum (via workshops, email and other tools) for personal growth, inadvertently the entire STIN will be affected in which others can gain.

Other studies also convey an expression of the object component in their activity systems. Hardman (2008) investigated how teachers implement computers to mediate mathematics, and the use of technology in transforming teaching practises. The object of that activity system aims to develop and reinforce students' mathematical content knowledge. The perceived outcome should enable students to be mathematically literate (Hardman, 2008). Li and Bratt (2004) use the activity theory as a means for analysing asynchronous learning networks to gain better insight of their dynamics. The object of such an activity system incorporated knowledge/skills acquisition, project completion and problem-solving. Li and Bratt (2004) contend that the materialisation of the object being achieved is as a result of sufficient training in the early stages of designing asynchronous learning environments, technical support, clear guidelines for participants, evaluation criteria for grading, encourage cooperation and provide feedback. This is

an important aspect to consider, as the object cannot be achieved automatically but requires mediation between the other components of the activity system (Li & Bratt, 2004).

Now that the discussion so far has explored the position of object in the activity systems outlined in various studies, it is now a timely point to shed light on the object of this study. Therefore the object of this study is the content of the module, and the use of online resources to achieve the outcomes of the course.

3.4.3.4 The Community

People acquire their needs by working and learning with others to attain their specific goals (Kain & Wardle, 2008). Studies relating to activity theory are propelled beyond the scope of individual actions (Kain & Wardle, 2008). Activity theory rests on how people work together, how they use tools to achieve outcomes and how this involves a sense of *community*. Noteworthy at this point is that the word *community* will be used in direct reference to its position in the activity system unless otherwise stated. Thus far the elements of subject, tool and object have been tackled; it is now necessary to explore the function of community in the activity system. Engeström (1996) posits all human activity is contextualised within an interdependent system. According to Thuraisingam *et al* (2012) within the community role of the activity system the subjects (people) combine in a unified approach to achieve the object. The subject is an extension of a larger community joined by the work they have in common (Yamagata-Lynch, 2010). The community's interests give purpose to the activity by dividing the workload into specific duties within the reach of objectives (Kain & Wardle, 2008).

Joyes (2006) argues that within the community of an activity system a researcher should consider the nature of the learning platform, determine the learners' expectations in relation to the community, and establish how their roles can be supported. He affirms that this is wise to consider, particularly to underscore the online learning activity system. The same study also suggests that in conjunction with a learning tool designed to support the teaching and learning atmosphere, the elements of the activity system must be aligned accordingly to mediate a progressive learning experience (Joyes, 2006). Thuraisingam *et al* (2012) validates the claim made by Joyes (2006) and expands on it by further alerting to a relevant point concerning distance. They indicate that even though people who are part of the activity system may be physically separated, if they regularly converse with and over a common effort, they form a community and hence support the activity system. At this acclimation the study draws on an important consideration identified earlier in the literature review by Dixson, Kuhlhorst and Reiff (2006). They adamantly convey that because of the nature of an online environment, it is accessible almost anywhere at any time, provided internet connectivity is available. This

suggests that even if students are physically absent from a lecture they can still be a part of it by connecting online from wherever they are, thus contributing to the learning tasks and supporting the activity system.

Thuraisingam *et al* (2012) also bring to the forefront the set of norms and explicit or implicit roles a community imparts on its members. Cole and Engeström (1993) confirm this view held by Thuraisingham *et al* (2012) by stating that there is an element of *division of labour* within the community, accompanied with responsibilities, tasks and power perpetually being addressed (Cited in Hardman, 2008). Hardman (2008) articulates this by revealing that the community in her activity system of study included the teacher and students who work closely on a problem in a mathematics lesson. Simultaneously they are members of the school community, and teachers belong to trade unions and a community of mathematics educators. Significantly this shows that members of an activity system assume multiple roles perhaps in their field of expertise or surroundings, and bring these experiences to assist the activity system. This then condones the theory of constructivism that explains learning as built upon ideas and concepts of past and present knowledge used to help the current sphere of learning (Wells, 2007).

In a study undertaken by Jaradat, Qablan and Barham (2011) the framework for activity theory has been used to analyse the barriers to a virtual Management Information Stream (MIS) Curriculum in Jordanian Schools. The understanding in using activity theory will govern the intimate mechanisms that integrate MIS-Online Curriculum with its environment. The study provides an explicit account of each element of the activity system, but of specific importance at this point is the role of the community. The community includes teachers, school supervisors and educators of MIS-Online. Consequently the community impacted the effectiveness of the MIS-Online resource to determine students and teachers' performance. Jaradat *et al* (2011) argue that there are discrepancies that exist in the integration of MIS-Online Curriculum. This is reflective when a teacher has to progressively manage a class to reach the objective of students' knowledge, whilst battling behavioural problems and therefore becomes more consumed with classroom management. An articulation of this situation supports the ideology of Li and Bratt (2004) who contend that tensions exist between the subject, object and community. They concur that students need to get used to the learning context, especially when it is first introduced to them, before they can be actively involved as desired. Li and Bratt (2004) further assert that students have to overcome non-verbal communications such as facial expression, gestures, or tone that can be a hindrance to a learning place. As a measure of resolution Li and Bratt (2004) advise that encouragement and prompt feedback are vital. The issues of disruptive or confused students in a community is one that cannot be immediately avoided in a learning situation, and it is integral to ponder on the perspectives of Li and Bratt (2004), and Jaradat *et al* (2011) because

they bring a sense of reality of what can take place in a learning environment and also posit remedies to overcome such problems so that it does not utterly distort the assumptions of the activity system.

Other studies that contain elements of community in their activity systems include Tay's (2011) study as it pertains to parents, school administrators, teachers, the Ministry of Education, non-academic staff, Infocomm Development Authority (IDA), the National Research Foundation (NRF), institutes of higher learning (IHL), and industry partners. The community in Tay's (2011) study was rather extensive but nevertheless broadens the understanding of the groups of participants that can be expected within a community. On the other hand Thuraisingam *et al* (2012) records a minor composition of community that include the academic staff of the parent institution and the administrative staff. The deliberation in discussing the role and impact of the community in an activity system gives powerful insight to the researcher in determining the community of this current study. By reviewing how the role of community has evolved in other studies, it makes it possible to suggest the members of the community in this study. Therefore the researcher has considered the Academic Cluster of Curriculum Studies, technical support offered by the university, external examiners, and other scholars in the field of curriculum, conference presentations, peer students and the researcher.

3.4.3.5 Division of Labour

Activity theory represents a paradigm that affords the complexity of an activity system to be analysed in the context of its socio-cultural and historical tools that mingle with the various components (Engeström, 1996). The symbolic interaction between agency and structure between the micro and macro levels highlights the changes, challenges and transformations that take place in an activity system (Thuraisingam *et al*, 2012). Kain and Wardle (2008) identify this process as "dialectically structured" (p.2). The term 'dialectic' describes a relationship in which aspects of a process, transaction, or system are mutually dependent. Consequently activity theory helps a researcher concentrate on the dynamic interrelationships between the many components of an activity system (Thuraisingam *et al*, 2012). The activity system comprises of the subject/s; the mediational tools employed; social and contextual relationships; the roles; and the division of labour that govern their influence in achieving objectives. Of optimum relevance here is the role of division of labour.

The division of labour explains the distribution of tasks and roles between members of the community and the division of power and status (Murphy & Rodriguez-Manzanares, 2008). Hardman (2008) affirms this ideology by further alerting to a vertical and horizontal negotiation of responsibilities and power within the context of the activity. The horizontal aspect describes how

tasks are divided between community members and the vertical aspires to division amongst power and status (Li and Bratt, 2004). Amory (2006) elaborates the relationship of division of labour to the community. The premise is that the community is an implicit or explicit organisation of a community instrumental in rearing the transformation process of the objective into an outcome. It is important to comprehend these assumptions and characteristics of what constitutes the division of labour in an activity, so that each member understands and performs their tasks towards the expected outcome (Wang, 2008).

The link between division of labour and the community can also be explained through a reciprocal relationship between the division of labour and rules. According to Kain and Wardle (2008) an activity system is constrained by these. In higher education the labour is divided among participants. Students assume the task for completing assignments; instructors are responsible for grading assignments; and administrators have to ensure grades are transparent on students' transcripts (Kain & Wardle, 2008). The rules determine the agreement about how the activity will transpire. It is integral to consider how labour is divided in an activity system because this accounts for the influences that shape the activity in a broader context. This then extends to the theme of the types of human interaction identified earlier, and defines activity theory as a framework for describing how people work together (division of labour), using tools (e.g. chat room) to achieve outcomes (learning online) (Nardi, 1996).

So far, much of the debate surrounding the assumption of various components in the activity system has come from various studies, including that of Tay's (2011). It is therefore wise to continue drawing from his work to provide a more wholesome description of an entire activity system than to just pull loose threads from other studies. The division of labour in Tay's (2011) study allowed each participant to complement the process of ICT integration into the school curriculum by fulfilling their roles. Staff from the different departments developed their specific curriculum and combined the use of ICT into the teaching and learning frameworks. The task of teachers is inclined towards developing pedagogical approaches which required students to learn with and from computers. The technical teams' responsibility was multi-faceted as they were confronted with establishment of wireless network, storage and charging of the Tablet PCs, and the installation of projectors and interactive white boards in classrooms. This also extended to other technical and logistical support departments. The school was instrumental in setting up the prospective committee to look into and explore emerging technologies. Additional support from the Ministry of Education and the Infocomm Development Authority further enhanced the process of ICT integration. This thick description on the intense division of labour not only indicates the numerous community members involved but an exploration of the many responsibilities and tasks that strive in the direction of achieving the primary objective; integration of ICT into the

school curriculum. It also suggests that the tasks assigned to each member need to be clearly spelt out to ensure an effective demonstration in reality. Evidently the conception of collaboration was effectively deployed, as technical teams depended on logistical support, and the Ministry of Education and Infocomm Development Authority further backed up the initiatives of the school to bring a sense of reality to the perceived vision of ICT integration.

To correlate with the ideas derived from Tay's (2011) study regarding the division of labour, other studies have also been sourced to gain more perspective. Hardman (2008) describes the role of the educator as one to teach, and the task of students is one to learn in the activity system. The study examined the pedagogical approaches in four grade six classrooms with the idea to view how teachers teach and how students respond to learning as a consequence of teaching styles. In this context the division of labour was distributed between the educators and students. In Joyes' (2006) study of the division of labour includes the role of students, the tutor and the higher education institution. As part of the tutor's responsibilities, they have to use the Learning Activity Analysis Tool (LAAT) to inform their pedagogical style. This involves reading information in using the LAAT, create a new LAAT that must relate to the learning activity, share the LAAT with peers, and set activities that students can respond to. Students have the task of responding to the teaching method by learning and participating in the activities outlined by the tutor. For instance students are asked to read a book chapter and prepare a written report on this to share with others (Joyes, 2006).

The investigation in determining the role of division of labour in the activity system outlined by various studies in online educational environments, has the potential to inform the researcher's perspective of this study. Other studies correspond with the study at hand because they take place in an online teaching and learning context, and have chosen activity theory as a relative theoretical framework. Exploring how each activity system composed their division of labour to include tasks, responsibilities and powers makes it possible to determine the same avenue for this study. Therefore the researcher has identified the facilitator and students who comprise the division of labour. The facilitator is responsible for deciding on the pedagogical approach which aligns to the implementation of online tools designed to inform learning. Subsequently the university faculty of Curriculum Studies will influence the teaching styles adopted by the facilitator. The facilitator also has the task of setting assignments, devising learning activities, and prescribing readings that are relevant to the Curriculum Context and Change module. Students assume the position of learning with the guidance of the facilitator, and are required to complete and submit assignments that influence their progress of the course.

3.4.3.6 Rules

The global atmosphere in which we find ourselves located is a consequence of a process of mediation and not as a direct result of higher cognitive functions (Hardman, 2008). The subject, as defined by an activity system, uses mediation techniques to respond to the object of the activity. This represents the natural relationships that can be explained through an activity system. This further underscores Vygotsky's central assumption of activity theory; an individual's response is distinguished through their interaction with objects in the world which is mediated by cultural artefacts (Nardi, 1996). Interactions are influenced by the *rules* that regulate actions within an activity system (Li and Bratt, 2004). The component of rules in an activity system is crucial to mediation. Rules are explicit and implicit norms that stimulate actions and interactions within an activity system (Engeström, 1993). Thuraisingam *et al* (2012) substantiate this definition by adding a formal and informal analysis to the assumption of rules. They include norms, conventions, and social traditions that are instilled by the community to direct its members. Thuraisingam *et al* (2012) also posit rules as implicit or explicit, unwritten or tacit rules, for example, embedded habits and values. Barab, Barnett, Yamagata-Lynch, Squire and Keating (2002) imply formal rules as systematic, general or expected; informal to mean idiosyncratic adaptation; and technical as mandated and written. Kain and Wardle (2008) concur that rules symbolise a mutual agreement about how an activity will materialise in enabling the progression in an objective direction. Discussing the perception towards the element of rules by various researchers provides validity and evidence to sustain the argument in using activity theory to frame this study.

The components of an activity system do not operate in isolation but in a dynamic evolvement of interactions that outplay (Barab *et al*, 2002). Thuraisingam *et al* (2012) express this idea by iterating that although the subject is informed by the community towards aiming for a shared objective, there are norms (rules) whether implicitly or explicitly stated, that govern the entire functionality of the activity system. Kuutti (1995) uses an illustration of a soft-ware team programming a system for a client in a study to convey this ideology. Kuutti (1995) argues that in as much as the team comprises the community sharing the object, with a certain division of labour between the manager, subordinates, soft-ware developers and user representatives, the set of rules determine the role as a member of the community that is crucial to attaining the objective. The explicit rules in the activity system of Kuutti"s (1995) study pertain to laws, parent organisation and the team manager, whilst the implicit rules resemble the general working culture as the team work together. This can be seen as to how user representatives of the customer shall be treated (Kuutti, 1995).

In the study by Joyes (2006) the Learning Activity Analysis Tool (LAAT) was governed by certain rules. These relate to the use of time, online behaviours, measurement of outcomes and the criteria for rewards. This suggests that the component of rules cannot be avoided but are instead considered vital to the successful operation of an activity. The criteria for rewards indicate that students need to be aware of how their assessment tasks will be evaluated to assist them in adequately preparing. Joyes (2006) emphasises that a component change precedes a disequilibrium that requires a reconfiguration of the learning context. For instance an activity may be dependent on skills, and an imbalance created by any of the community members could lead to a focus on content instead. This will further negate a demand on new collaboration, new rules in accordance with division of labour, and adaptation to community expectations (Joyes, 2006). Kain and Wardle (2008) condone this understanding of rules projected by Joyes (2006). They expand on this by stating that rules change in a reciprocal response to changes that take place with other components. Rules bring a sense of stabilisation to the activity in the wake of internal conflicts that prohibit the change (Kain & Wardle, 2008).

Drawing from an earlier discussion on the use of Tay's (2011) study reflecting the implementation of activity theory as a theoretical framework, there were certain rules and conventional practises that were instilled to facilitate the integration of ICT into the school curriculum. The rules related to submission of students' work in conventional and digital formats; teaching pedagogies of subjects affiliated to the use of ICT in teaching and learning, as well as research in their domain of expertise; installation of PC Tablets in classrooms; and training of the parents belonging to the pioneer cohort in using the computer at school and home. This indicates the type of rules that can be expected when assimilating teaching and learning with the online platform. It also becomes questionable and observable whether the rules of the activity are being maintained or jeopardised in the reality of the situation. de Souza and Redmiles (2003) argue that within an activity system tensions can occur because a rule might lead, for example, a developer to perform a certain action but the developer is unwilling due to the effect of this action on the community. Due to the constant interaction between the components of an activity system under the constraints of change, an occasion of 'misfit with elements' between them and between different activities occurs (Thuraisingam *et al*, 2012, p. 3). Tay's (2011) study articulates this conception because the integration of school-wide computing resulted in contradictions in the rules of its initial stages. Concerns over whether young students can appropriately use and care for Tablet PCs were highlighted, along with the constant need of charging and storing of them. In overcoming this challenge the technical team and industry partners invested numerous hours in determining ways in which the Tablet PCs could be stored and charged (Tay, 2011). Voicing Engeström's theory, Thuraisingam *et al* (2012) propose that whether contradictions are viewed in an image of problems, disruptions or breakdowns, their significance has greater bearing in

resulting in change and development. de Souza and Redmiles (2003) edify this claim by adding that contradictions infuse reflection and this improves the activity. Consequently, after some deliberation the technical team in Tay's (2011) study identified a customised mobile storage and charging unit produced for classroom use. Inadvertently this eradicates the problem of students' appropriate use, as this solution makes it more accessible for students to use the Tablet PCs and become more familiar with it.

The discussion thus far has not only framed the concept and functionality of rules in the activity system, but has also highlighted the tensions and contradictions that can occur. To circumvent problems that emerge it must be viewed as a way in which to create development and to ultimately reach objectives. This has broadened the researcher's understanding of the role of rules in the activity system, and therefore positions the study in such a way that it is able to identify the rules that affect this activity system. The rules include the specific teaching methods of the facilitator; the assessment methods used to evaluate students' performance in the module; submission of assignments as compulsory to students' assessment; attendance of students; and the specific learning material related to the Curriculum Context and Change module.

3.4.3.7 Outcomes

Learning can be viewed beyond the abstract of mental analysis from a personal experience to learning as a cultural practise based on the tenets of activity theory (Bernard & Enyedy, 1999). Students manoeuvre through activities as they develop from partial involvement to fully immersed participants who use cultural tools of the narrative practise (Bernard & Enyedy, 1999). Individual actions are almost considered absurd when understood in isolation but thought of as meaningful within a context as a unit of analysis. An activity always carries artefacts such as procedures, signs, instruments, laws and methods that are created, developed and manipulated to exhibit actions on objects (Uden, 2007). These are unequivocally driven towards achieving an *outcome*. The outcome represents the intended purpose (goals) of the activity and this is what motivates the other components to harmonise with this endeavour (Joyes, 2006).

As emphasised throughout this section, an activity system involves a reciprocal process. The motive includes the object of the activity and the outcome is ongoing (Kain & Wardle, 2008). The subject(s) use tools to accomplish the objectives and reach the desired outcomes. They are motivated to implement tools because they want to achieve something and the tools facilitate this process. The objectives of an activity are very closely associated with the outcomes, and therefore many scholars have used the two interchangeably. de Souza and Redmiles (2003) advocate that activities are synonymous with objectives called 'outcomes'. Kaptelinin (2005) argues that the objective and outcome (motive) of an activity are often confused and advise that

they should be distinguished in their own spheres. Engeström (1987) defines the object as the 'raw material' or 'problem space' at which the activity is centred and then transformed into outcomes with the aid of physical and symbolic mediating instruments (p. 79). In a study conducted by Barab *et al* (2004) the activity system consisted of an Inquiry Learning Forum (ILF). The object comprised of discussion forum as a method for inquiry based teaching to determine teacher's perspectives using the ILF. The outcome of the activity is represented by better notion of inquiry-based lessons, effective connection to other teachers, and informed practise. This suggests that although the object and the outcome have been treated separately, as confirmed by Kaptelinin (2005), they are still associated as they depend on each other to ensure a successful operation of the activity.

In demonstrating a gradual emergence of components in Tay's (2011) study, it is inevitable to highlight the outcome of the activity system. Hence the outcome is represented by the integration of ICT into the school curriculum. The subjects in the activity system have a distinguishable common objective, that is, the use of ICT for teaching and learning; and this supports the integration of it into the school curriculum (Tay, 2011). The various roles consumed by the activity in its infancy stages of mental recognition becomes externalised in the form of an outcome (Tsai Galyen, Xie & Laffey, 2010). Importantly Tsai *et al* (2010) further caution that since the components are interconnected, if they are viewed beyond their relationship they may lose valuable aspects of their meaning. This then extends to Engeström's (1987) theory that human activity can trigger tensions caused by systemic contradictions. These can occur when the conditions of an activity jeopardise the subject's position which can prohibit achieving the object and thus failing the outcome (Engeström, 1987). In Barab's (2004) study there was tension about letting pre-existing groups (teachers) into the ILF because of fears that group members might ignore the larger community in support of already established relationships. This disadvantages other teachers from gaining the experience of using the ILF as an important tool to transform their pedagogic style, thus limiting the full achievement of the outcome. Li and Bratt (2004) bring an important perspective to Barab's *et al* (2004) study. They argue that in an environment incorporating discussion forum as mechanism for teaching and learning, since students are not visible, tensions can occur when students remain silent or have sidebar discussions that can be de-motivating and disruptive to the lesson. In responding to a situation as such, Li and Bratt (2004) advise that the lecturer should be mindful of diverse ways of learning and should continually remind students of the outcome of the activity to keep them involved and focussed.

Transforming the object into an outcome underlies the existence of the activity (Kuutti, 1995). For instance the example of a soft-ware team programming a system for a client mentioned earlier,

singles out the object as a not-yet-ready system (Li & Bratt, 2004). The outcome rests in the transformation of this system into a bug-free application accessible to clients. Li and Bratt (2004) identify the outcome in the activity system of their study as equipping students with the knowledge, skills and problem solving techniques in using Asynchronous Learning Networks in teaching and learning institutions. All of these highlight examples of outcomes that can be expected in a teaching and learning context. It also suggests that it is not a smooth process, but rather confronted with tensions that occur in the duration of the activity. The problems are not to be regarded as a pitfall, but an attempt to redress and find alternative solutions that achieve the desired outcomes. Guided by the influence of other studies, the researcher of this study has identified the outcome of the activity system as equipping students with the knowledge and skills for reflecting critically on curriculum issues by using online resources to facilitate learning.

3.4.4 A Model of the Activity System Structure

The diagram below represents a structure of an activity system developed by Engeström (1987) depicting the interacting components of the subject, object, tools, community, division of labour, rules and outcome. These have been defined and discussed in the previous section, and the model brings a sense of visual aid to how the components traverse in a reciprocal process.

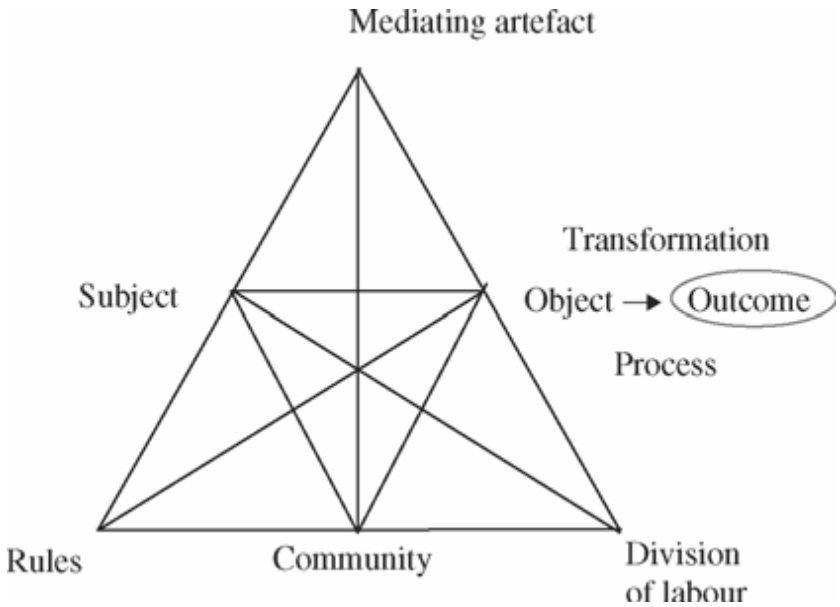

Figure 3.4.4.1 Components of an Activity System (Engeström, 1987)

Mediated action is diagnosed as a process of interpersonal communication, illustrated by the activity system triangle, whereby interactions between the subject, tool, object, rules, community and division of labour take place to produce an outcome (Daniel, 2001). The subject generates new signs that derive meanings of the world, and once the sign is transformed into a cultural tool, it then gives way to reaching objectives. The rules, community and division of labour at the base

of the triangle constitute the social basis of the activity system (Kain & Wardle, 2008). These position the activity in a wider platform to determine the factors that shape the activity.

3.5 ACTIVITY THEORY IN ONLINE CONTEXTS AT HIGHER EDUCATION

As a consequence of the widespread interest in integrating ICT to improve greater accessibility to higher education, activity theory has been used by various scholars to ascertain the implementation of this strategy (Kirkup & Kirwood, 2005). Researchers have employed activity theory as a conceptual framework to describe elements of educational technology, online communities and computer-mediated communication (Tsai *et al*, 2010). Drawing from this rationale, the researcher viewed it pertinent to examine the use of activity theory in various online environments.

Morrison (2003) undertook a study that explored online learning activity in conjunction with Computer Supported Collaborative Learning (CSCL) in the context of an agricultural leadership development program. Activity theory was used to determine the extent to which the online atmosphere exhibited the values and principles of constructivism. Consequently, it was proposed that it is a conceptual model for analysing and evaluating the success of CSCL environments. However, Morrison (2003) cautions that further research is needed to intensify the potential that activity theory has in administering specific design approaches for a wider market of constructivist online learning platforms.

The potential of activity theory is further instrumental in illuminating developmental processes. Barab, Schatz and Scheckler (2004) sought the principles of activity theory as an analytical tool to explain the design and development processes of an online Socio-Technical Interaction Network (STIN) over time. They discovered that as activity theory influenced the dynamic activity of the creation of STIN, inadvertently the STIN informed the dynamic nature of the activity. Through the interaction of components in the activity system they were able to better understand how the STIN operates. In a similar vein Knight (2002) confirms that activity systems create a platform for infusing deeper knowledge as to how activities evolve and materialise in tertiary sectors of education. The activity diagram emphasises the interactions of the mediating artefacts (ICT and other physical resources) that a facilitator utilises in collaboration with the rules and conventions of the institution, the professional/local community of the facilitator, and the division of labour between the facilitator and students. These are all active in demonstrating how the activity system functions in a reciprocal process. This encapsulates a sense of what is happening in the midst of emerging conflicts. The premise underlying Knight's (2002) study reveals that through activity theory the technologies and the facilitators themselves are changed as they

converse with one another in a dynamic system. Kirkup and Kirkwood (2005) support the assumptions of Knight's (2002) research because they too contend that from an activity theory perspective even late adopters of ICT will inevitably be changed in the process of coping with new tools of teaching and learning. This has bearing on the entire activity system.

Kaptelinin and Nardi (2006) expanded the activity theory system by incorporating poly-motivational activity. Their ideology suggests that since motives are derived from needs that may be in conflict with each other, the social environment impacts the motives that can be compromised and prioritised. This influences the subject's action upon the object. In this sense learning is envisaged as a complex social activity counteracted by various motives that affect their actions and behaviour.

Joyes (2006) applied activity theory to the development of an online Learning Activity Analysis Tool (LAAT). This was implemented to support trainee tutors in developing a critical approach to analysing online activities with their peers. It further entailed an exploration of various pedagogic mechanisms to online tutoring, arising from teacher centred to student centred support in specific learning areas.

To further supplement this discussion, activity theory is also envisioned as a means to examine phenomena in different ways. de Souza and Redmiles (2003) identified activity theory as an analytical structure to understand and explain observations of a soft-ware development group to support the idea of collective work. Li and Bratt (2004) use activity theory to investigate the potential of teaching and learning through Asynchronous Learning Network (ALN) with the support of Computer-Mediated Communication (CMC), created for use at any time or place where network coverage is eminent. Thus their study illustrated the advantages and disadvantages of engaging in this type of pedagogical instruction.

It is apparent from the various studies that activity theory has significant potential when it is used as a theoretical framework for investigating teaching and learning in online contexts. It possesses the characteristics to examine, analyse and understand the challenges, experience and advantage of using online resources in higher education. This further equips the researcher by providing them with a deeper analysis of the findings that emerge from this present study, and the ability to explain these in the rationale of activity theory.

3.6 CONCLUSION

In describing and framing the nature of online learning, this chapter has presented a theoretical account by using Activity Theory and Cultural Historical Activity Theory simultaneously to guide

this study. Activity theory advocates that activities consist of processes at the individual and social level, to incorporate meditational tools and artefacts that mitigate the processes. Activity theory was initially developed by Vygotsky (1978), and later expanded on by Leontev (1981) and Engeström (1999) to inspire technological learning environments. As such, activity theory assumes an imperative conceptual framework with which to analyse successes, failures and imbalances in online learning environments.

This chapter further articulated the activity system as a unit of analysis that entails observation of the actual processes that activities mould and are reshaped by their context. The rationale surrounding an activity system presents a dynamic impression of perpetual constructions and reconstructions between its components. These include the subject, object, community, rules, tools, and division of labour to produce the outcome/s. The researcher sought to implement activity theory as a sound theoretical base because it has been used to examine several studies undertaken in technology-inclined and online learning environments (Nardi, 1996; Barab, Schatz & Scheckler, 2004; Morrison, 2003; Jaradat, Qablan & Barham, 2011). In this endeavour, the chapter portrayed activity theory as an integrated framework for characterising the experiences of students in an online environment which has been influenced by other social factors such as work and family. This ideology is consistent with the interpretive paradigm, which is central to this study. These influences provide a holistic phenomenon, motivated by contextual issues that are innovatively transforming the learning environment. The researcher was also fully aware that although an activity system provides an analytical view into the interaction of the components, it has the potential to compartmentalise them which can lead to isolated realities (Barab *et al,* 2004). However, transactional thinking allows the components to be envisaged collaboratively, in conjunction with one another. Learning is a process of discovering relationships between what is already known with new information (Darling-Hammond *et al*, 2001). Hence, the role of activity theory in research provides a set of perspectives on human activity and the connections thereof in relation to the concepts assigned for describing that activity (Robertson, 2008).

The following chapter provides a comprehensive discussion concerning the research design and methodology that involved a critical investigation of the experiences of the facilitator and students in using online resources for teaching and learning in the Curriculum Context and Change module. This was conducted in order to collect and analyse the data needed to answer the research questions of the study.

CHAPTER FOUR
RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The previous chapter discussed various sources of information regarding the paradigm and theories of inquiry relevant to underpinning the assumptions of this study. Pertinent issues were identified and a summary of the findings were revealed. Every type of empirical research has an implicit or explicit research design that is fundamental to addressing the research questions that guide the phenomena being investigated. Therefore this chapter investigates the approaches and data-gathering techniques that will be used to inform the research questions, in the endeavour of ascertaining the paradigm, design and methodology that generates data. Consequently the study is framed within a qualitative case study design and methodology. The researcher implemented the techniques of interviews, observations, and an online questionnaire as a means of acquiring data from the facilitator and students of the Curriculum Context and Change module, from which to derive the strengths and limitations that govern the use of such methods. The chapter also presents a brief description of the lectures that took place in the context of the study. Further the sampling methods of purposive and convenience will be used to describe and justify the use of research instruments employed. This will entail the data analysis procedures and how issues of credibility and trustworthiness were involved to verify the data gathered. In addition, the study draws on the ethical conditions that must be taken into perspective when conducting research. Finally, concluding remarks will be emphasised to draw the chapter to a close.

4.2 RESEARCH DESIGN AND METHODOLOGY

The research design can be differentiated from the methodology, although the two can be thought of as simultaneous (Nieuwenhuis. 2010). Research designs are plans that guide the manner of conditions for the collection and analysis of data in ways that seek to give relevance to the search process (Creswell, 2003). Subsequently, this plan is drawn before the generation of data or analysis can start. According to Merriam (1998), this plan is assessable, organisable and able to integrate information that produces a certain end product. Therefore the research design aligns to a chronological plan that specifies the manner in which research is executed in order to answer the research questions. The researcher is responsible for developing the research design, shaped by the method, and is responsive to the context and participants (Richards, 2006). Further, the research design supports the empirical nature of the study and connects them to specific sites, persons, interpretive material, including documents and archives. Cohen, Manion, and Morrison (2000) contend that the establishment of research requires the

harmonisation of the planned possibilities in a coherent practise that resolves the differences between idealism and realism.

Alternatively, methodologies indicate how inquiries move forward by singling out what problems are legible for investigation; how to frame enquiries so that exploration is possible; how to create specific data generation; and how to make inferences between the problem, data generation, analysis and conclusions (Jackson, Drummond, & Camara, 2007). Simply stated, Henning (2004) positions the methodology within an epistemological base of inquiry that regulates the research design to function. Henning, Van Rensburg and Smit (2007) postulate the methodology as a collaborative stance to source data and findings that articulate the research questions that fulfil the purpose of the research. This suggests that the methodology draws on the choice and implementation of methods concurrent to the rationale of the study. Thus research designs merge the data generation and analysis activities with the research questions, and maintain that all research aspects are covered.

Simply put, the research design and methodology are different, yet somewhat interdependent. Neiuwenhuis (2010) explains this by conveying that the research design focuses on the end product while the research methodology concentrates on the research process and the instruments and methods to be used in research. This suggests that although they have distinguishable tasks, they are still relatively bound by the research process. In addition, the research design does not only address the research questions, but the theoretical and conceptual framework, population and sampling, time plan and budget, while the methodology emulates the approach to generate relevant data (Cohen *et al,* 2000).

4.2.1 Research Design

The quality of any research study can be enhanced by a thorough understanding of the research design. This will develop the researcher's thinking and capitalise on the foundation for the design of the study. To reinforce what has been discussed prior, the research design articulates a flexible set of guidelines that combines theoretical paradigms to strategies of inquiry and methods of collecting empirical data (Darko-Ampen, 2004). Consequently this study has selected the qualitative approach to inform the findings. Qualitative research design seeks to develop understanding from data gathering as the analysis proceeds (Richards, 2006). This means that the procedures and scope are flexible. The interpretive paradigm was chosen to underpin the research concerned, as discussed in chapter three. The value of the interpretive paradigm aims to discover new interpretations or meanings to the ontological assumption of multiple realities, which are time and context dependent (de Villiers, 2005). A researcher implementing an interpretive approach is tasked with explaining the meanings behind empirical observations in

natural settings. In the cause of this study the interpretive paradigm was used to describe the activities that take place in the Curriculum Context and Change module at a university in Durban. The facilitator and students pertinently influenced the study by interpreting and making choices about the learning resources used to tackle curriculum issues based on their own experiences. The interpretive research design was considered integral, as it catered for the collection of qualitative information, observation of the facilitator and students in the context of the lectures that transpired, and conversing with participants through interviews (Wahyuni, 2012).

4.2.2 Qualitative Case Study Methodology

More than three decades ago, studies surfaced regulating the awareness of using qualitative research methods, such as the case study, which can be used to explore development and implementation of computer-based information systems (Benbasat, Goldstein & Mead, 1987). A case study is one of several ways of conducting research, since it seeks to understand human beings in a social context by interpreting their actions as a single group, community or event (Gerring, 2004). From an interpretive perspective case studies aim towards a deeper understanding of how participants relate and interact with each other in a context-specific situation and the meaning that arises from the phenomena under study (Maree, 2007). Phenomena suggest "a way of describing something that exists as part of the world in which we live (Hancock, 2002. p.8). This is synonymous with Activity Theory which believes there should be interaction among participants involved in an activity to achieve desired outcomes. Tellis (1997) confirms this ideology by contending that case studies should be linked to a theoretical framework (Cited in Zainal, 2007). Therefore the researcher has selected the case study methodology to underpin the findings of this study. Various scholars have defined the concept of a case study that treads on common ground, to enable the researcher to better comprehend this approach.

According to Zainul (2007) a case study allows a researcher to investigate data more closely within a specific context. This often inculcates a small geographical area with a limited number of individuals as the subjects of the study. Gerring (2004) supports this assumption by attributing this approach as an intensive study of a single unit for the purpose of understanding a larger class of similar units. In a similar vein Baxter and Jack (2008) convinces that the qualitative case study ensures an exploration of a phenomenon within its context using a variety of data sources. This indicates that the issue under scrutiny is not tackled through a singular lens, but rather a variety of lenses which cater for multiple facets of the phenomenon to be viewed and understood. Yin (1984) concurs with this analogy by validating the use of multiple sources of evidence in support of the case being investigated, particularly when the boundaries between the phenomenon and the context are not sufficiently outlined. Rowley (2002) advocates the

importance of case study methodology that leads to a “more deeper and more detailed investigation of the type that is normally necessary to answer how and why questions.” (p.17)

Drawing from the discussion hence forth, the definitions proposed by different experts establish a foundation from which the case in this study can be defined and explored. Given the nature of qualitative case studies pointed out by Zainul (2007), this study takes place in the context of a higher education institution in Durban, focusing specifically on the Curriculum Context and Change module to investigate the findings. The case constitutes the use of online resources in the teaching and learning of curriculum issues. Jack and Baxter (2008) contend that the case cannot be distinguished in isolation but in the context of where the research takes place. The researcher is then challenged with the task of selecting an activity or process, such as observation or interviews, to generate understanding. When the researcher reverts to the research questions initially composed, he/she first keeps the study in focus, and then allows room to deviate onto aspects beyond the context of the study. Rowley’s (2002) perception alerts the researcher to answer the research questions of what, how and why online resources have been used to facilitate teaching and learning. This highlights the case as the object of interest that comprises the phenomena of the study (Baxter & Jack, 2008). The results of findings therefore emphasise the potential use of online resources in the course that can be applicable to other educational environments as well as challenges that exist to hinder or prevent optimal use of online tools. Yin (1984) suggests that the researcher employing a case study approach may use a variety of sources to derive evidence. Thus the researcher conducted observations and other methods to discover the application of online resources in determining curriculum issues.

Application of the case study methodology has been used in many areas of discipline such as sociology, law, medicine and education (Zainal, 2007). In the field of education, evaluative applications were investigated to determine the use and effectiveness of educational programmes and initiatives (Zainal, 2007). Similarly the present study undertaken will determine the extent to which students of the Curriculum Context and Change module use online resources to achieve the objectives and aims of the modules in relation to the students need to learn. This represents the case under study.

As stated earlier in chapter three, the paradigm in which the research takes place is integral as it determines the position of the researcher in a study. The interpretive paradigm has been selected, since the researcher is viewed as the primary data-gathering analyst (Denzin & Lincoln, 2003). The constructivist paradigm has also been briefly mentioned as it is closely associated with the interpretive because researchers in this field of inquiry believe that people’s actions cannot be predicted. Instead, behaviour has to be understood based on the experiences vital to

the learning process (Christiansen *et al*, 2010). Significantly Stake (1995) and Yin (2003) confirm their stance on case study on a constructivist paradigm. Constructivists claim that people construct their own reality from ideas or concepts that stem from past and present knowledge (Wells, 2007). An advantage of this approach is the distinct collaboration between the researcher and participants. The participant/s converse with the researcher in ways that describe their experience of reality and this equips the researcher with a fervent understanding of the participant/s actions (Lather, 1992). It is important to bear in mind the influence of the constructivist paradigm upon a case study because this assisted the researcher in acquiring a deeper analysis of the participants' experiences. The participants included the facilitator and students because the study involved examining the use of online tools in both the teaching and learning process. The case study further helped the researcher ascertain other issues, like whether the advance of ICT integration into higher education, as envisaged by the South African government, is being implemented, or just policy idealism with insufficient fruit to bear.

A stark feature of a case study method is the use of multiple data sources; a mechanism which increases the credibility of the data (Yin, 2003). As a form of qualitative research, case studies can explore several research designs that include semi-structured interviews, document analysis and participant observation (Bryman, Stephen & Campo, 1996). Data from the multiple sources are then converged in the process of analysis, instead of dealt with in a singular notion (Baxter & Jack, 2008). This means that the case study itself cannot be used to collect data but utilise various research methods, as identified above, to interpret data. Triangulation is a pivotal tool in ensuring the validity of a case study research (Johansson, 2003). For this study the researcher used individual and focus group interviews; observations; document analysis; and an online questionnaire. The purpose of the study rests in an in-depth description of the facilitator and students, their behaviours, perceptions and experiences in assimilating with an online learning environment in a natural setting, which is the Curriculum Context and Change module at a higher education institution in Durban (Zainul, 2007).

Each data source contributes and develops the researcher's understanding of the entire phenomenon (Baxter & Jack, 2008). This strengthens the findings as the different threads of data intertwine with each other to cultivate a deeper understanding of the case. The researcher purposed to identify and interpret the use of online resources in teaching and learning of curriculum issues, and used certain data generation sources to ascertain this. Therefore the researcher used observation to observe lessons in the Curriculum Context and Change module to understand what online tools were implemented by the facilitator to develop students' learning and inform teaching of curriculum concepts. It also indicated a realistic description of how these were being used, as the students interact with the facilitator in approaching curriculum theory.

Further the researcher interviewed participants using a semi-structured interview schedule, who related their experiences and feelings of engaging with an online type of learning. Interviews represent a primary source of information where interpretive case study research takes place, as this method allows the researcher to effectively access case participants' views and interpretation of their actions and events (Walsham, 1995). In addition the researcher reviewed and analysed documents from the online learning space to inform a greater perspective of the study. The online reflection in which students had to complete also helped the researcher ascertain the data.

Case study research has been conveniently used to achieve an array of research aims: to provide descriptions of phenomenon, develop theory and test theory (Darke, Shanks & Broadbent, 1998). Case study research has been linked to description with theory development and for exploration of areas where existing knowledge is limited (Darke, Shanks & Broadbent, 1998). So it is relevant to use the case study to inform activity theory proposed for this study, since this methodology is linked to theory development. Further, Yin (1984) distinguishes between three categories characterising case study, namely: *exploratory*; *descriptive*; and *explanatory*. *Exploratory* case studies are determined to explore any phenomenon in the data which would ordinarily be a point of departure to the researcher. Descriptive case studies aim to describe the natural phenomena which outplay in light of the data in question, whilst explanatory case studies seek to examine data in-depth in the endeavour of explaining the phenomena in the findings (Zainul, 2007; Rowley, 2002). The nature of this study is twofold. Firstly, it may be viewed in an exploratory dimension because it seeks to ascertain the nature of practise in using online tools in teaching and learning of curriculum issues, and also to acquire thorough knowledge of how and why the facilitator and students implement these the way they do. Secondly, it can be regarded as a descriptive case study for the purpose of providing a holistic picture of a phenomenon within its context – teaching and learning of curriculum concepts and theory using online resources at a higher education institution in Durban. In this instance, the researcher desired to learn about and understand the benefits and challenges of implementing online tools, as articulated by the participants.

The case study method is viewed advantageous for the researcher whose intent is to examine data closely at a micro level (Zainul, 2007). This analysis of data is mainly conducted within the context of its implementation. Another strength of case studies is its use of multiple data sources that typifies triangulation. *Triangulation* uses evidence from different sources to corroborate the same discovery or result (Rowley, 2002). As discussed earlier, the researcher was able to establish a close link with participants by directly observing them in their natural context, the Curriculum Context and Change module, and also interview them to generate a stronger analysis to clarify and validate what has been observed in the data. In addition, a case study not only

assists with exploring or describing the data, but also provides detailed qualitative findings in a real-life atmosphere. They also convey the complexities of realistic situations that may not be discovered through experimental or survey research (Zainul, 2007). Hence the researcher was able to determine the limitations or problems the facilitator and students experienced whilst employing online tools in their learning space.

In retrospect, although case studies pose numerous advantages, particularly for their description of real situations and detailed behaviour, they are also criticised for certain weaknesses that cannot be overshadowed. Scholars concur that the results of a case study cannot be generalised especially in scientific development, but can inform studies in a similar field of the research (Flyvbjerg, 2006). Flyvbjerg (2006) utterly downplays the value of a case study from a conventional view, and cautions that they need to be linked to hypothesis. The case study method has also been 'condemned' for its lack of rigour and the ability for a researcher to maintain a biased interpretation of the data. In addition, case studies have been thought of as cumbersome to conduct; given the producing of intense documentation (Yin, 1984). Although there are criticisms researchers persist with implementing case study methodology, specifically for the merit it holds in presenting realistic experiences - which is ultimately the crux of this study.

4.3 QUALITATIVE APPROACH

Educational technology research methods are under revision as new questions and concerns emerge (Savenye & Robinson, 2004). A point of departure in regulating the collection of information for research intentions is based on two approaches: *quantitative* and *qualitative* research. The first seeks to observe and measure things objectively (Jackson II, Drummond & Camara, 2007). However, this process proved to be inadequate in the study of human behaviour and the social world; which gave rise to new ways of answering research questions and thus the inception of qualitative research (Hancock, 2002). Since then qualitative research has achieved widespread momentum as mode of inquiry. The qualitative field emerges with assumptions through world views, and the study of research problems related to the meaning individuals or groups experience in their social environment (Creswell, 2003). The philosophical assumption rests in understanding how people make sense of their worlds and the interactions that occur in their natural settings (Cohen *et al*, 2007). Given this description, the researcher endeavoured to understand the real experiences, perceptions and feelings of the facilitator and students who implement online resources as a mechanism for teaching and learning of curriculum development, policy and practise at a higher education institution in Durban (Hancock, 2002). This afforded the researcher the opportunity to conduct the study in its natural environment, in this case, the Curriculum Context and Change module. Qualitative research is characterised by

finding answers to questions which begin with: *why? how?* and, in *what way?,* typical of the research questions in this study (Hancock, 2002).

Shank (2002) conceptualises qualitative research as “a form of systematic empirical inquiry into meaning” (p. 5). This suggests that a researcher attempts to understand how others relate to their experiences in the environment in which they inhabit, thus supporting the rationale for this study. The facilitator and students were able to express their interaction with the course in different ways. Participants shared their stories as probed by the researcher through the use of semi-structured individual and focus group interview schedules. Interviewing allows for more flexibility and responsiveness to emerging themes for both the interviewer and the respondent. The fundamental advantage in appropriating focus group interviews is to observe a large amount of interaction among multiple participants on one or more topics in a limited amount of time (Jackson II, Drummond & Camara, 2007). The facilitator and students provided a thorough account of the actual events that governed teaching and learning of the module. Interviews are interwoven with other methods of data collection in order to sustain the researcher with a groundswell of information for analysis (Turner, 2010). Therefore the facilitator and students were observed presenting, interacting and demonstrating their knowledge and skills in using online resources in determining issues of curriculum change and articulation in South Africa. Observation allows the researcher to report on things physically witnessed as opposed to what other people may have perceived, and record these to the benefit of the study (Cohen *et al*, 2007). Document analysis catered further for evidence on what was taking place in the course, such as learning material and assignments; and how these were being achieved. Students discussed and exchanged ideas via the learning site, developed by the course facilitator, and this was considered vital to data collection on qualitative analysis.

The value of qualitative assessment has been underestimated, particularly due to the immense criticism through the lack generalisable results it produces (Lincoln, 2002). However Thorngate (1976) argues that any theory of social behaviour cannot be general or accurate. In a similar vein Harper and Kuh (2007) contend that there is a need for ‘specifics’ “as higher education becomes more complex and expectations for documenting educational effectiveness increase” (p. 5). Hence, qualitative studies explore the specifics by illustrating a thick description into the real-life experiences of people (Jackson II, Drummond & Camara, 2007). Therefore in a qualitative approach the researcher seeks to voice a holistic picture form historically unique situations where idiosyncrasies are relevant for sense making (Ospina, 2004). Consequently the researcher uses an inductive mode, advocating for the data to express itself. Based on the assumptions of a qualitative study the researcher used text and other literacy techniques such as samples, quotes, models, illustrations and events to describe the findings, in contrast to a numerical account that

tend to isolate the phenomenon (Merriam, 1998; Ospina, 2007). The data was collected and recorded by the researcher as events through the qualitative instruments of interviews, individual and focus group; observations, document analysis and an online questionnaire. Jackson II, Drummond and Camara (2007) assert that rather than depending on pre-structured questions to ascertain categorised, forced-choice responses with minimal leverage for open-ended feedback to questions as with quantitative analysis, the qualitative researcher relies on deep, rich detail derived from lived experiences. The data was collected in the form of quotes, words, diagrams, pictures and screen-prints of the learning space site. Given the nature of qualitative studies, the researcher is able to gain more information about a phenomenon because a variety of data sources can be used to generate the findings (Cohen, 2000; Jackson II, Drummond & Camara, 2007).

In view of the vast use of computer-based interactive technologies in education and industry, educational technologies have beckoned the call for the implementation of more qualitative research methods to explore educational practises (Savenye & Robinson, 2004). It is within this frame of reference that the researcher felt more confident in applying a qualitative approach, as the primary interest lay in the facilitator and students' experience and ethnic disposition in using online tools to develop teaching and learning. Qualitative methodology has divulged great insight into the underlying issues regarding the use of online resources in the Curriculum Context and Change module, since the researcher is the main data-gathering instrument that can convey first-hand quality results (Savenye & Robinson, 2004).

Qualitative studies commonly include ethnographies because these tend to be specific. Ethnography is given to mean "the art and science of describing and interpreting cultural behaviour from a close textual-analytic standpoint" (Jackson II, Drummond & Camara, 2007; p. 5). The researcher is able to consider the element of ethnicity since in qualitative studies the researcher becomes part of the study by interacting closely with the participants. They share their values and worldviews that determine the data in support of the study (Savenye & Robinson, 2004). Therefore the researcher used observation, interviews, questionnaires and document analyses to gain an in-depth account into the personal experiences that evidenced participants' assimilation in online learning environment. The researcher also spent a considerable amount of time at the higher education institution prior to the data generation process to be familiar with the context, facilitator and students, to better develop knowledge of whom will be part of the study, at what time and at what point.

Most of the participants involved in the study were part-time students with full-time jobs in the teaching profession, and much of their spare times were devoted to their personal studies.

Similarly, the full-time students were preoccupied with having to complete their degrees before the year end, and this limited their availability for one-to-one interviews. Consequently the researcher ended up with a very small sample for the study, comprising of one facilitator and five students. However this was sufficient as Cohen *et al* (2007) conveniently point out that a qualitative approach allows for a small group of people, where close interaction makes real experiences possible to derive and record. Richards (2006) contend that a defining feature of qualitative studies is the ability to create understanding, rather than a dependence on statistical results. Further, the study exhibited results from a conceptual framework in accordance with the literature review provided. Also relevant gatekeepers were approached and permission was granted to conduct the study. As a form of protection, anonymity of participants was kept with great measure. Pseudonyms were used for participants' names and the institution of higher education used in which the study took place was not mentioned. The researcher employed primary and secondary sources of data and maintained triangulation. Opportunities to check the data and peer debriefing were also ensured. The researcher paid close attention to handling the data appropriately and responsibly (Richards, 2006). Finally, a proper account of each step in analysis has been demonstrated in the data. Thus, the qualitative approach was best chosen to fit the assumptions of this study in relation to the research questions that have been administered.

4.3 MULTIPLE METHODS OF GENERATING DATA

Biases in the data generation process and analysis can be counteracted by implementing multiple sources of evidence; a process termed *triangulation* (Miles & Huberman, 1984). Multiple sources of evidence help in corroborating the information given by different participants where there may exist opposing views of events and actions (Darke, Shanks & Broadbent, 1998). The researcher has used multiple methods and sources of data throughout the research process in this study. Typically case studies include data collection techniques such as an interview, observation, document analysis and questionnaires (Darke, Shanks & Broadbent, 1998). Similarly the researcher has used semi-structured individual and focus group interviews, observation, document analysis and an online questionnaire to gather data. Yet again, the qualitative researcher recognises their position of subjectivity in analysis, in that their values, beliefs and perceptions intervene to inform their investigations (Savenye & Robinson, 2004).

A trade mark of case study research is the use of multiple data sources to achieve data credibility (Yin, 2003). The researcher can generate and integrate the data which develops a holistic understanding of the phenomenon under investigation (Baxter & Jack, 2008). The case study approach further cements the process of triangulation (Feagin, Orum & Sjoberg, 1991). Hence the researcher triangulated the data from simple questionnaires and document analysis with data

from interviews and observations, and simultaneously, triangulated the interview method with the observation method, in conjunction with the online questionnaire method and document analysis method. This catered for a rich description in the use of online resources by the facilitator and students in the Curriculum Context and Change module. Multiple methods suggest that the researcher can better understand the real-life experiences of participants from different sources of data generation (Zainul, 2007). This convergence strengthens the findings as the various threads of the data intertwine to develop a better understanding of the case (Baxter & Jack, 2008).

4.4 RESEARCH SETTING AND SAMPLING

This in-depth study focused on the research setting at a university in Kwa-Zulu Natal, Durban. It is located within a robust industrial area, with various manufacturing factories close by. Due to the immense work operations and upcoming industrial developments in the area, transportation to the university is easily accessible as a consequence of workers travelling to and from daily. The infancy stages of the research process entailed the researcher conducting an internet search of possible higher education institutions that offered courses affiliated to curriculum developments and change due to personal interest, and discovered that there are at least two other institutions that exist. However, the researcher chose this specific institution as a result of prior knowledge and experience of curriculum issues in the courses offered, since being a former student of the campus, and an educator currently at a public secondary school in Durban. The Curriculum Context and Change module uniquely offered at this particular university was suitable to the interests of the researcher, as it explored the use of online resources in teaching and learning through a blended approach. Therefore a personal visit to the Dean of the university was initiated to seek consent for permission to use the campus as a research site.

Further investigations were elicited until the researcher was able to legitimise the university as the research setting for the study. A request (Appendix A) was sent to the Dean of the university through a personal visit, which was responded to positively with informed consent to commence research at the institution. Thereafter a letter (Appendix B) was emailed to the academic cluster leader of Education Studies to ask permission to conduct research using the Curriculum Context and Change module, which was then approved.

Once permission was sought and established with the relevant authorities at the university, it was possible to move forward with the study and arrangements to visit the research site for purpose of introduction were made. The researcher met with the course facilitator to discuss the research process, particularly that of data collection through observations, document analysis and interviews (semi-structured one-to-one interviews, and focus group interviews) with participants.

Consequently, the researcher met with participants on the 14 February 2013, as agreed upon in the initial discussion. The researcher explained the research process and arranged appointments to schedule the data collection. In order to comply with the ethical issues of the study, letters of consent (Appendix C) were issued to prospective participants to read. The letters contained all the details of the study; its purpose, anticipated study period in the field, and the promise of confidentiality and anonymity. The researcher sought informed consent and permission from the Dean of the university, academic cluster leader of Education Studies, and the facilitator and students who were involved in the study (see Appendixes A, B, C respectively). The facilitator of the course was assigned to work with the researcher throughout the data collection period, both as a participant and a representative of the module. In this write-up pseudonyms are used for non-traceability of the participants, and the name of the university has not been compromised.

4.4.1 PURPOSIVE SAMPLING

Teddlie (2007) contends that the representative selection of people, places, or things from which data is gathered is called a sample. Purposive sampling involves specifically selecting individuals or institutions to answer the research questions of a study, based on a specific purpose (Teddlie, 2007). The researcher has chosen the purposive sampling method because it is frequently used in qualitative studies, and therefore suits the purpose for data collection of this study. Christiansen *et al* (2010) further assert that purposive sampling is mostly used by researchers within an interpretive paradigm, therefore the researcher felt confident in selecting this method. Given this rationale the researcher has chosen the one facilitator who tutors the course and the thirty-five students who are part of it. The researcher has chosen this specific group of people in the full assumption that the results of the research cannot be generalised to the wider population but try to generate solutions for this specific group. However, transferability of the results is possible to similar groups or context (Christiansen *et al*, 2010).

Purposive sampling is often done by means of convenience sampling which suggests that the researcher chooses a sample that is easy to reach. Within this perception the researcher was able to use five, from their thirty-five, of the most easily accessible students for one-on-one semi-structured interviews. The initial stages of selecting students for the interview process was seemingly difficult for the researcher as students were not very enthusiastic about devoting their personal time. This was due to the fact that most students are full-time educators who attend lectures after an exhausting day at school. In addition some are parents who felt that they would not have the time to attend an interview. Others expressed concerns about their busy schedules and were involved in extra-curricular activities at school, whilst a few conveyed sentiments about insufficient time towards their personal study. Despite these concerns five students came

forward to willingly be part of the study, and with much enthusiasm the researcher selected them and scheduled appropriate interview dates at their convenience.

4.5 THE CONTEXT

The philosophical assumption of a qualitative study abides in an understanding of how people make sense of their worlds and the interactions that evolve in their natural setting (Cohen *et al*, 2007). Therefore it is imperative to bring into perspective the context of the research to frame this study. Jackson II, Drummond and Camara (2007) contend that qualitative studies dig deep into the 'specifics' by articulating a thick description into the realistic experiences encountered. This qualitative case study focused on a specific module, the Curriculum Context and Change, at a specific university in Durban, Kwa-Zulu Natal. It is a research design concentrating on a singular case – the implementation of online resources as a tool for teaching and learning by the facilitator and students of the course. As this point it is vital to provide a profile of the course in the context of the university, since this represents the research site where the data collection proceeded.

4.5.1 The University

The researcher presumed it integral to distinguish the context of the university first, before providing a description of the Curriculum Context and Change module, because it is within this vicinity that the module takes place. This is not to separate the two, but to indicate the background to exemplify the relationship from where the module hales. The university is one of five others affiliated one another, yet each is defined by their own distinctive characters and by the courses and specialisations offered. This particular university, where the research took place, is a primary domain for teacher education and home to the university's School of Education.

The campus provides sophisticated and attractive facilities to an increasing number of Education students and is central to all major amenities. In recent years the campus has extended its infrastructure to accommodate the immense volume of students interested in Education courses. New buildings emerged, with spacious lecture theatres, including new computer facilities introduced to meet the growing needs of its students. The WiFi facility further enables students to access internet connectivity form their personal laptops and other portable devices. The lecture venues are conducive to implementation of online teaching and learning through provision of projectors, whiteboards and laptops. Sufficient seating arrangements have been well planned to accommodate large numbers of students at a time. The modern well-equipped buildings are surrounded by enormous grounds and playing fields to host a variety of sporting activities and events, with a sports centre designated for study in this field.

The university provides initial and in-service teacher education and offers university level higher degrees in a range of specialism in education, including Curriculum Studies. Students can pursue diplomas, undergraduate degrees, postgraduate certificates, Honours, Masters and Doctoral study programmes. Consequently students interested in the area of Curriculum can attain an Honours, Masters or Doctoral degree qualification in this specialisation. The School of Education has a good-standing reputation for instituting teacher education programmes, adult education, higher education and workplace learning.

The School of Education, in the context of the university, has a responsibility to address the imbalances of the past by responding to inequality and injustice through teaching, learning and community engagement. This is poignantly relevant as the Curriculum Context and Change module tackles issues related to these – especially considering that it was the various curriculums imposed by the government that fuelled the apartheid regimes, and later to bring the transformation to democracy. Symbolically the School envisions itself as located within an African context which is socially inclusive. The student population is composed of Africans, Indians, Whites and Coloureds which is reflective of the diverse rainbow nation of South Africa. The multi-cultural ethos of the university is host to both local and international students. Also a considerable amount of the student population arises from surrounding African countries such as Zambia, Zimbabwe, Botswana, Lesotho and Nigeria amidst others from Asian countries.

Given the rampant influence of science and technology infiltrating higher education policy and practise, the university has developed a strong approach to operating within- and to managing - the widening tensions governed through the advance of these areas for growth and development. The university also contributes and participates in international conferences, hosts international visitors and regularly publishes in international journals.

Drawing from the myriad of credentials associated to the university, it is within this context the Curriculum Context and Change module is operational. It is now appropriate to describe the course located within the context of the university.

4.5.2 The Curriculum Context and Change Module

The Curriculum Context and Change module is offered through the Honours (Bachelor of Education) programme at the university. It is undertaken by registered students on a full-time or part-time basis in the first semester of the academic year. Lectures are undertaken once a week for approximately two hours, between 16h00-18h00. The module comprises 30 contact hours, of which 24 hours is allocated to lectures, seminars and group discussions, whilst the remainder 6 hours are assigned for consultations. Attendance is compulsory for all contact sessions.

The module is facilitated through a blended approach, comprising of online teaching and learning, and face-to-face teaching and learning. The prime purpose of the module is to equip students with the knowledge and skills for reflecting critically on curriculum issues with particular reference to the determinants of curriculum policy, practise and online curriculum. The module outline is available online and concisely demonstrates curriculum issues and topics to be covered each lecture. These relate to:

- Perspectives of curriculum
- Curriculum in development
- Curriculum design theories
- Online curriculum design theories
- Assessment of online curriculum
- Proposal development to curriculum topics
- Online teaching with learner-centred approach in a curriculum context
- Historical development of curriculum change in South Africa
- The politics of curriculum change
- The official curriculum in South Africa: OBE, NCS, CAPS
- Educator competency

Students are required to engage with readings related to the module, indicated in the module outline, before each lecture to adequately prepare them for the lesson and to enable them to participate in activities. Students are assessed according to their ability to demonstrate their capacity to act academically. This requires their skills of investigation, research, application, study, evaluation and drawing knowledge from their own experiences. Consequently students have to complete and submit two assignments to meet the requirements of the module. Specifically they will be assessed on their understanding of key concepts in curriculum and engagement in curriculum analysis, policy and practise through the relevant literature and experience of online knowledge and skills.

Lectures take place at the newly developed computer venue, equipped with modern computers, a projector, white screen and ample seating arrangements. Since the module takes on a mainly online pedagogic approach, students access their virtual learning environment by logging on to the learning space using their student user name and password. The facilitator conducts each session by guiding students to use the online tools appropriately and interchangeably with face-to-face discussion. It is within this environment that teaching and learning evolves in the Curriculum Context and Change module.

4.7 DATA GENERATON METHODS

The primary data generation methods employed by the researcher for this multi-method study were: individual semi-structured and focus group interviews; lecture observations including non-participant and a simple open-ended online student questionnaire; and learning space analysis in which relevant documents were retrieved for review. Multiple sources of evidence clarify and validate the information given by different participants, especially where there may exist opposing views of events and actions (Darke, Shanks & Broadbent, 1998). The researcher found it relevant at this point to discuss the advantages and limitations of each method of data generation as it applies to the study. Further the researcher also provides an account of the actual procedures and events that took place in collecting the data.

4.7.1 OBSERVATION

Observation in research means that the researcher goes to a physical location and observes what is actually taking place there (Christiansen *et al,* 2010). This enables the researcher to obtain first-hand information because it is possible to report on things witnessed and recorded as opposed to what other people have said. In this perspective the researcher observed lectures that took place in the Curriculum Context and Change module in the context of the university. Due to the constraints of time, it was difficult to appropriate participant observation; therefore the researcher resorted to non-participant observation using a semi-structured observation schedule (see Appendix D). Savenye and Robinson (2004) contend that non-participant observation is commonly used to focus on specific aspects of a context that can answer certain research questions of a study. In this study the researcher aimed to answer direct questions of what online resources are used, how these are implemented and why they are used in the teaching and learning of curriculum issues. In non-participant observation the researcher does not interact to a great extent with those whom are being observed. The researcher mainly observes and records, and has no indicative role as a participant. This method can be used to yield detailed, descriptive data and be employed as a powerful instrument for triangulation (Savenye & Robinson, 2004).

A semi-structured observation schedule suggests that the researcher does not ramble through a checklist, but writes a free explanation of what has been observed in the context of the study (Christainsen *et al*, 2010). Thus, the researcher may choose to focus on aspects pertaining to the research questions, however if particular issues may arise whilst collecting data, these can be worth pursuing in the study. The researcher engaged in lecture observations comprising of two hours per session. Even though the researcher was aware of what he/she was looking for when the lectures were observed, and how to record the data, some field notes were recorded as a description of what happened in the lecture rooms.

The ethical considerations in implementing observations must be regulated and adhered to when conducting a study. In this regard the researcher obtained permission form the relevant authorities such as the university, the School of Education Faculty responsible for curriculum studies, and the participants. Subsequently, informed consent from participants with the relevant details, such as the purpose of the study, proposed methods of data collection, data analysis procedures and ethical considerations was given and signed as an agreement to participate in the study. On 21 February 2013, the researcher held a meeting where the above aspects were outlined and discussed so that everyone was aware of the expectations if they were to participate in the study. A request was made to use audio tape material to record the lectures, and permission was granted. The protection of students and the facilitator was ensured and their anonymity will be preserved by using pseudonyms to prevent identification. The findings of the study were shared to maintain accuracy and to promote honesty (Cohen *et al*, 2007).

4.7.2 Advantages of Observation

Non-participant observation allows for the researcher to focus on specific aspects of context and to answer the research questions of the study (Savenye & Robinson, 2004). Consequently it was possible to yield extensive, descriptive data. Again the researcher knew what to look for by focusing on particular issues, like precisely what online tools were implemented in the teaching and learning of curriculum content and knowledge. The researcher used the data obtained from observation to verify the self-reported information from the one-to-one and focus group interviews (Savenye & Robinson, 2004). This enhanced triangulation of the data. Further, observation led the researcher to attain information about the educational environment, including the different learning styles, resources and the interactions that outplayed amongst the students, and between the facilitator and students. In this manner the researcher could actually see what was happening in the lectures (Christiansen *et al,* 2010). Thus the technique of conducting observations assisted the researcher to collect realistic data that helped the researcher understand the actual use of online resources in the Curriculum Context and Change module, and hence answer the research questions.

4.7.3 Limitations of Observation

Observation can be potentially intrusive which can change the dynamics of a situation. This means that the researcher's presence in the lecture room can cause students or the facilitator to behave differently, commonly known as the Hawthorne effect (Christiansen *et al*, 2010). In addition, not everything can be observed which indicates that the researcher has to be selective about what to focus on and can therefore find it difficult to capture all the data that might be relevant to the study.

4.7.4 The Process of Observation

Once informed consent and permission were ascertained in a meeting with the participants to conduct observation, the researcher set out to commence with this data collection process on 21 February 2013. The lectures took place in a fully fledged computer venue, where each student had access to a computer. The facility further encompassed a large white screen and data projector to facilitate the lecture. This was mainly reserved for lecturers or tutors. The facilitator therefore made constant use of the white screen, data projector and one of the computers closest to the other devices to implement teaching and learning of the Curriculum Context and Change module.

The venue also entailed a small mainframe computer room accessible only to technical staff and personnel; although the researcher never observed anyone during the lecture times. The researcher assumed it was primarily due to the fact that these were late afternoon lectures between 16h00 and 18h00, since at least one person from personnel were usually there during the day. The researcher observed each lecture for approximately two hours a time. The setup for each lecture was normal; nothing was arranged for the lecture observations. The section below illustrates a description of the observations as per observation schedule.

Sample Lecture One

Topic: Curriculum in Development

The lecture commenced as normal, with students seated in front of their individual computers, whilst the facilitator speedily activated the projector to the white screen and logged on to a nearby computer. A review of the previous lecture was briefly highlighted by the facilitator. At this stage, students were still familiarising themselves with the process of preparing for the lectures. Therefore, the facilitator gradually explained the procedure of logging on to the computer to access the learning space specially designed for curriculum students. This was to ensure that all students were visible online. However some students experienced registration problems and were not able to access the learning space, which meant that they could not fully participate in the online activities. The facilitator moved around the room to ensure that those students who were successfully registered were engaging with the learning space.

The next phase of the lecture entailed a revision of the previous week's lesson that introduced curriculum, what it meant, and the perceptions and ideologies surrounding it. The facilitator extended this discussion by drawing in other perceptions of various writers and scholars. This led to a whole class discussion. Students were then advised to visit the learning space to view recommended articles related to basic conceptions of a curriculum.

Whilst students were active online the facilitator used this as an opportunity to explore the chat room, discussion forum, search engine, YouTube blog, and the learning guide with them. They were advised to revisit the learning space in their private time to explore the various online learning tools.

Sample Lecture Two

Topic: Curriculum Design Theories

The normal procedure for logging on to the computer and accessing the learning space culminated. Students quickly initiate the chat room with welcome greetings and social talk. There seemed to progress with regards to the registration of most students; just a few were still struggling. The facilitator briefly recaps the previous lecture, and heads on to introducing the Entertainment Education Theory using the chat tool. The use of the chat room in this case presents new information displayed in an unorthodox manner to many students. The facilitator gave them an opportunity to think about what this concept could mean and to then convey their responses through the chat room. At first students appeared surprised at the way in which the concept was introduced since they seemed to be used to face-to-face interaction. However, they assimilated well by enthusiastically typing their responses via the chat, to the extent that great volumes of messages were coming though at a time. This led to face-to-face conversation with the entire class and the facilitator.

In light of the new topic further debate about what constitutes a curriculum was aroused. Students expressed sentiments about the various types specifically, the institutional; intended; international; and local curriculums. The facilitator then led them to an online article posted on the learning space, in an attempt to fully integrate them into the concepts and understanding of a curriculum. A debate ensued among students as to whether or not the current Curriculum and Assessment Policy Statement (CAPS) is another test or an actual implementation policy geared for South Africa. This entailed a critical argument about previous curriculum inventions (such as the National Curriculum Statement (NCS), and more especially the controversial Outcomes Based Education (OBE)) to the extent of whether these were content-centred, learner-centred or teacher-centred in comparison with CAPS. These intent discussions take place face-to-face. The facilitator thus concludes the lecture by directing students to further online articles on the learning space for further reading.

Sample Lesson Three

Topic: Activity Theory

The lecture began as normal with the facilitator initialising the projector and white screen, whilst students logged on to the learning space. At this point all students were registered and

consequently able to successfully participate in the online activities. The facilitator revised the previous week's lesson on Entertainment Education Theory. This led to an introduction of theories of learning such as activity theory and cultural historical activity theory. The facilitator then directed students to an online article via the learning space. Students were able to view this on their individual computers and on the large white screen. The facilitator also uses a story of a soccer game to explain the tools comprised in an activity system to develop students understanding. This further evolves into a discussion through the chat room. However students begin to deviate from the topic to discussion on assignment progress.

One student questions the facilitator as to whether activity theory can be used for their assignment proposal. The facilitator affirms this and guides the discussion connecting students to various online articles of activity theory and cultural historical activity theory via the learning space and search engines. Some students began to save articles from the Soople search engine for their respective assignments. Once students engaged further with the relative articles they displayed a better understanding of how the different components interact with each other.

Sample Lesson Four

Topic: Online Curriculum Design Theories – Curriculum Spider Web / Activity Theory

As a spin off to the previous discussion on activity theory the facilitator introduced the spider web curriculum. The diagram depicts an interaction between the various components that represent curriculum design. Students were able to view this first on the white screen and then via the learning space on their own monitors. It was observed that students were also simultaneously retrieving their emails and other unrelated internet sites.

As the lecture progressed, the facilitator stimulated a discussion by prompting students to think about the various South African curriculums in the context of the spider web issues. The students and the facilitator conversed and framed to the current CAPS curriculum according to activity theory and the spider web diagram. In the midst of this the data projector encountered technical problems that mirrored a blank white screen thus eradicating the information that was initially highlighted. Thereafter the device ceased to switch on. After approximately 15 minutes the data projector began to initialise, however connection to the computer settings were still delaying.

The lecture further proceeded to an example of a proposal as insight to what students can expect to write in their individual ones. This is to fulfil one of their assignment requirements, and hence considered integral to their development as Honours students. The facilitator discussed a step-by-step explanation of how one constructs a proposal, using a former student's topic on the experiences of first year engineering students on learning Chemistry at a higher education

institution. The facilitator outlined contents such as the research questions, rationale, literature review, theoretical framework and ethical issues among others. The lecture was concluded by the facilitator, and students were tasked with contemplating the possible topics for their proposal submission.

Sample Lesson Five

Topic: Proposal Development

The lecture begins with everyone entering the chat room to exchange greetings and commence with discussion. It was noted that a few students were absent but did not access the learning space to join the class online. However it was visible on the learning space that those students from the other African countries were making frequent online visits. It was clear that by now students appeared to be well assimilated with the process of retrieving the online space and making use of the relevant communication and learning tools. The facilitator advises students to post their prospective research topics via the chat room so that it can be discussed, critiqued or further developed for their proposals. In addition the facilitator informs them that they are required to respond to the chats as this will add to their assessment. The process of this task is such that each student has a turn to post their topic whilst the others give feedback through analysis, critique and support.

The first student posts a topic titled “Exploring the inability of reading and writing with grade 11 learners.” Others begin to critique this and suggest that the topic requires more specification in terms of a particular subject of study e.g. English or Business Studies. The facilitator further questions whether it has already been established that students cannot read or write. This is done to engage students in more critical thinking about their topics. The student felt well advised by the recommendations of the class and endeavours to revise the topic. Consequently many students voiced their topics via the chat, and in a similar manner received feedback.

The lecture then shifts to a discussion of the rationale, concepts, and research paradigm that is integral to proposal writing. Once again an example proposal is highlighted on the white screen and visible on students’ individual computers. Whilst this was occurring, it was observed that a few students were engaged in their own proposals and emails and thus lost track of the new steps introduced in proposal writing.

4.8 FOCUS GROUP

The researcher conducted focus group interviews for the purpose of insight by listening to a group of students and the facilitator talk about their perspectives, behaviours, experiences and attitudes regarding the use of online resources in the teaching and learning of Curriculum

Context and Change module at the university (see Appendix E). Only one focus group session was conducted due to the pressing needs of students fulfilling their assessment requirements, and their busy time schedules. Eleven students participated in the focus group interviews. Semi-structured interview questions were administered to ascertain the responses.

4.8.1 Advantages of Conducting Focus Groups

Instituting focus group interviews as a method of data generation allowed the researcher to gain an in-depth understanding of the facilitator and students' perceptions in their use of online resources as a method for teaching and learning of curriculum issues. This was possible when the researcher was able to observe the nature and the extent to which participants agree and disagree about an issue (Morgan, 1996). Students and the facilitator were able to compare their experiences and views with one another, whilst the researcher facilitated this process by probing further questions and discussion (Wilson, 1997). Darling-Hammond (2007) asserts that a primary advantage of initiating focus group interviews allows the researcher to observe a groundswell of information among multiple participants in a limited period of time. This was apt for the study as it enabled the researcher to generate data in a relatively short space of time. Participants' felt open enough to express the perceptions and feelings related to their experiences of the course, as for some it was their first encounter in adapting to an online learning environment.

4.8.2 Limitations of Conducting Focus Groups

In many instances the researcher would have to guide the discussion because students tended to lose some direction regarding the primary purpose of the meeting. Students began to debate in great detail the relevance of the various curriculums that led to discussions on the problems of apartheid which fuelled a deeper analysis of that era, which in turn deviated from the original conversation. This was also time-consuming as some students were anxious to move on so that they could finish at the appropriate time. Since an interview is characterised by a social interpersonal encounter, some students were shy to express their views, which resulted in the researcher having to specifically address questions posed to them as part of their focus group interaction. This was done to gain everyone's experiences and views. On the contrary one student appeared to dominate the first focus group discussion held with the students only, due to his extrovert personality and the need to express his view points. Others supported his perceptions, rather then relating their true feelings about curriculum issues (Darling-Hammond, 2007). In the focus group discussion the facilitator conveyed his beliefs regarding curriculum and the pedagogies relevant to support its development and practise, which all students agreed with. However, students seemed to go along with this rather than reveal their own ideologies.

4.9 SEMI-STRUCTURED INTERVIEWS

An interview is a form of communication in which the researcher seeks to gain an in-depth account of the participant's experience with regard to the phenomenon under study. This is done by addressing pre-established research goals and questions (Savenye &Robinson, 2004).The study adopted a semi-structured interview style. Semi-structured interviews are non-standardised and are commonly used in qualitative analysis (Kajornboon, 2005.). It is often preceded by observation, informal and unstructured interviewing on the topic of interest, from which relevant semi-structured questions is created (Cohen, 2006). Consequently the interviewer and participants engage in a formal interview using an interview guide developed by the researcher. Five students and the facilitator were interviewed for approximately 25 minutes each. This was tape recorded and the participants were made aware of this. The recording was then replayed for them to hear the interview to ensure they were satisfied with what has been discussed regarding the use of online resources in the Curriculum Context and Change module. In this effort, the researcher was able to find out what knowledge and information the facilitator and students have about their utilisation of online resources as a tool for teaching and learning. Further the researcher was able to ascertain what values and preferences participants have about an online platform in studies about the curriculum, and the attitudes and beliefs they hold in implementing this.

4.9.1 Advantages of Conducting Semi-structured Interviews

Semi-structured interviews inculcate an atmosphere for respondents to feel free to express their views on their own terms so that they can provide reliable, comparable qualitative data (Cohen, 2006). Since the interviewer is not restricted by an interview guide questions posed allowed the participants to express their experiences in using a variety of online tools openly. Such an exercise prompted enhanced expression since it catered for free communication that provided relevant details (Nieuwenhuis, 2007). Thus the researcher was able to gather rich descriptive data from them. The facilitator and students also conveyed their stories, current issues, and involvement with the course. The researcher was able to probe with further questions to ensure that the respondents had provided sufficient information. The researcher also paraphrased the responses in order to better understand what the participants had said. Further, it was easy for the participants to communicate with the researcher and vice versa to seek clarity and to elaborate on their responses where it was not clear. In addition the researcher could compare the findings from the observations with the responses from the interview, with the selected participants thus enhancing the process of triangulation. Since the interviews were tape recorded, this allowed the researcher to replay and confirm the data generated.

4.9.2 Limitations of Conducting Semi-structured Interviews

Interviews are a consequence of self-reported data which suggests that the interviewees reflect on their beliefs (Christiansen *et al*, 2010). Therefore, the researcher had to be mindful that respondents could provide information that might not actually respond to what the interview relates to. Also responses could be jeopardised in that participants could seek to please the researcher, rather than account for actual events that might have taken place. Further, arranging the actual interview at the convenience of participants can be difficult since four of the students are full-time educators and the facilitator is fully immersed with his workload at the university. One of the first interviews scheduled at the university did not take place with another student as she reported that she forgot about it, whilst the researcher waited. Eventually she could not meet at all since she dropped the course and decided that she would complete it the following year (2014).

4.9.3 The Process of Collecting Data Using Interviews

On the 14 March 2013, the researcher visited the university to collect data using observation in the Curriculum Context and Change module. Prior arrangements had been made to conduct the focus group interview after the lecture, as this was the most convenient time to get most of the participants together in one venue. This was done to circumvent the exhaustion from a full-time job that most participants were involved in, and the commitment to their part-time studies that involved afternoon lectures. Hence, the researcher felt that it was in their best interests to arrange the focus group interview between 18h00 and 18h30. The interview went well, as participants allowed each other the opportunity to answer questions pertaining to their use of online resources in the module. Where there had been similar responses the participants would come to an agreement by initially discussing the issue between themselves, then a consensus would be reached. The focus group interview was not recorded as some students were not comfortable with being taped. However, the researcher made field notes, and wrote down the responses of participants.

On 22 April 2013 the researcher proceeded to the university again to conduct two individual semi-structured interviews. The first interview was designated for 15h00, but to the researcher's dismay the participant did arrive. After repeated attempts to determine if the participant was late, she finally indicated that she would not attend the interview as she had forgotten about it and deregistered from the module. The participant was replaced with P5. Nevertheless the researcher continued with the next interview with P3. The interview took place at 16h39 and lasted for 22 minutes. The interview was informative as P3 hales from Botswana. He shared that this was his first experience with using online resources as a method for teaching and learning. Further he expressed concern for the need for such pedagogic advances to be implemented in

his home country, and for the Botswana government to create the relevant infrastructure to support ICT integration across the board. However, he admits that the availability of funding is a critical issue, but hopes in the near future this can be realised. The interview was tape recorded and brief notes were also taken.

On the same day that P3 was interviewed, P4 agreed to be interviewed, although this had not been the negotiated date to meet. She attended campus specifically to hand in one of her assessment tasks, and was more than obliged to participate in the interview immediately upon the researcher's approach. This overcame the disappointment experienced with the earlier participant who did not turn up for the interview. The researcher was still able to fully conduct the two interviews. The interview took 20 minutes, and valid responses were made. Similar to the sentiments echoed by P4, the experience of interacting with online resources as a strategic approach to teaching and learning was fairly new to P3. At first she found it a little difficult to remember the retrieval process of the learning space, but soon assimilated well. Further she enjoyed the aspect of online and face-to-face activity because it allowed her to directly ask questions to the facilitator where she needed clarity or additional explanation.

On the 29 April 2013, P2 was interviewed. As arranged the interview commenced at 18h00. The process went well and the interview lasted for 18 minutes. For P2 this was her first experience with online resources as a pedagogic style for teaching and learning. She admitted that it was not easy during the first two lectures to remember all the function of all the online tools, but got familiarised thereafter. P2 indicated that although the idea of an online approach is innovative, current and relevant to a technologically transforming environment, the effects of such still have a long way to go before they reach school level, particularly for under-resourced contexts. She believes that the government, in collaboration with corporate responsibility initiatives, should embark on sustainable development of ICT in schooling in other subjects, not just Computer Applications Technology or Information Technology.

On the 6 May 2013, P1 was interviewed at 15h47. The interview lasted for 20 minutes, and was very different from the responses from the first three interviews, yet also informative. As a consequence of his expertise and qualification in teaching Computer Applications Technology, the use of online resources in the module was nothing new. Rather he found it casual, and conveyed that he expected more from the course. With regards to the issues of curriculum, he felt that it was mildly tackled. He believes that students should immerse and equip themselves with an online platform for teaching and learning because it the way forward in exploring contemporary approaches that can meet the needs of a tech-savvy generation. P1 affirms that many students are disinterested in school work and engage themselves with unpleasant activities

such as occult worship that leads to destructive behaviour. He believes that methods of teaching and learning can help change their attitude to school, by incorporating innovative means such as ICT integration.

Finally the interview with the facilitator was conducted on the 7 May 2013, at 15h40. The interview took 20 minutes. The researcher was well informed about the need for the module as part of the Honours programme for post-graduate students. The facilitator expressed the value of using online resources as a fresh approach to teaching and learning, which was not being implemented in many other related and unrelated modules, despite the resources being available. His main stance on this approach is that students should learn with resources (Technology of Education) instead of learning from the technology in itself (Technology in Education). In other words technology is a tool used for the transmission of ideologies, theories, research findings and experiences. The responses that arose from the interview were very informative and allowed the researcher to pose questions were clarity was needed as a result of the observations.

Most of the interview sessions were tape recorded, except for the focus group, and the interview with participant P2. She requested not to be tape recorded, but the researcher wrote down her responses. Once the interviews were conducted the researcher began to transcribe and analyse the data to identify possible emerging themes and findings.

4.10 ONLINE REFLECTION

There are various online tools that can be used to support reflection by students or facilitators regarding the course they have undertaken. These include wikis, blogs, multimedia, interactive micro-blogging (e.g.Twitter), and social networking sites (e.g.Facebook) (http://sites.google.com/site/reflection4learning/technology-tools-for-reflection). Reflection helps students to think about the learning processes, activities and what they have developed as a consequence of it (Lew & Schmidt, 2007). The researcher used an online reflection posted on the Curriculum Context and Change learning space containing open-ended questions relating to the course (Appendix F) to verify and further triangulate the data. Open-ended questions allow participants to answer more freely and in detail as they prefer. It further entails participants to write their own opinion or record their particular experiences without being constrained by closed-ended responses (Christiansen *et al,* 2010). This encouraged qualitative responses regarding the use of online resources in the teaching and learning of curriculum theory, practise and development.

Thirty-five participants completed the online reflection to derive qualitative results. In aligning to the ethical assumptions of this study, participants were not required to indicate their names on the online reflection to protect their opinions and experiences on the basis of anonymity.

4.10.1 Advantages of Online Reflection

Since the online reflection contained various questions relating to the use of online resources for teaching and learning, the researcher was able to be specific about what information was needed for the study in accordance with the research questions. This further catered for a large amount of people to be reached within a short period of time (Christiansen *et al*, 2010). In addition this was cost effective and convenient for participants. As participants reflected, the researcher was able to ascertain their experiences and interactions with the course. From this, qualitative data for the study was generated.

4.10.2 Disadvantages of Online Reflection

Not all participants completed all the questions to the online reflection, which could have thus revealed vital information. In addition it is time-consuming in having to read and analyse the responses of each participant. Also there is a possibility that students may have not expressed their true experience of the course.

4.11 DOCUMENT ANALYSIS/LEARNING SPACE ANALYSIS

Document analysis is valuable for collecting qualitative data (Blundell, 1998). Cohen, Manion and Morrison (2007) argue that documents are an integral source of information to a research. This method of data production assisted the researcher in answering the first research question of "What online resources are being used by facilitators and students in the teaching and learning of Curriculum Context and Change module?" The documents were analysed via the online learning space with the purpose of identifying what online tools are used for teaching and learning. These included the module outline, prescribed teaching and learning materials/content, articles for the module, specific online tools, learning activities and assessment tasks. Henning *et al* (2007) contend that documents and other artefacts are rich sources of data generation. Whether it is old or new, if it can offer value to the study it is regarded as an integral source of information. In this sense the researcher analysed the documents through the learning space to ascertain the experiences of the facilitator and students in using online resources.

Documents connote an advantageous outlook as they possess data which is already organised and compiled by the relevant people. Relevant documents were retrieved after careful selection in answering the first research question of this study. Creswell (1994) cautions that some documents may be inaccurate or irrelevant to a study and as such the researcher chose the most

applicable to interpret the data. Consequently the researcher selected the module outline which reflected the topics of the course content to determine whether this was consistent with what actually took place (teaching and learning) in the module. This further assisted the researcher in evaluating the extent to which they achieved the desired outcomes and assessment strategies of the course. The researcher also analysed students' assessment tasks such as their proposals to examine the resources used to complete this, and whether they were appropriate to the teaching and learning techniques employed. In addition, the various online tools were examined closely to find out their relevance to assessment tasks, learning activities, online communication between other students and the facilitator, and their progress throughout the module. Analysis of the learning materials greatly aided the researcher in exploring the significance to students learning and assessment as well as the teaching methods utilised by the facilitator.

Documents can be analysed without being transcribed because they are already in the form of words and print (Creswell, 2008). Therefore, reliability can be checked several times. In this process the researcher sought to maintain confidentiality regarding the treatment of documents by ensuring that the name of the university and that of participants have not been compromised. Thus names have been changed or removed. This method of data generation helped the researcher to gather valuable information about the experiences of the facilitator and students in using online resources in the teaching and learning of the Curriculum Context and Change module.

4.12 PILOTING

The online reflection/questionnaire was pilot tested with similar students. The trial run respondents indicated that the questions were too long to answer. Upon this response the researcher restructured the questions to make them shorter, and they were piloted again to see if there is a need for change. They were accepted and then administered by the researcher to the actual participants.

In terms of ethical consideration, permission from the students (Appendix C) was obtained from students by sending informed consent letters which explained in details the purpose of the study, how issues of confidentiality and anonymity will be taken care of, and that participation is voluntary. In meeting with students the researcher further explained the ethical component to ensure it is maintained with highest confidentiality.

The online questionnaire was posted on the learning space. Out of 35 students only 20 responded. Students were given two weeks in which to submit their responses. Some responses needed clarification, whilst others did not answer all the questions. The researcher found it

difficult to ask students to resubmit incomplete or vague responses because they were in the midst of completing their assignments that was due in a few days, and also indicated they were very busy.

4.13 DATA ANALYSIS

One of the greatest strengths in data analysis is that it paves the way for extracting vital information from a multitude of real-life experiences in qualitative research (Eysenck, 2004). Hence the process of data collection began as early as the first day of data production. Qualitative data can be voluminous so the researcher organised the data into themes derived from activity theory. The benefit of instituting this method is that it instantaneously groups the data and emerges themes and patterns to be viewed easily. Cohen *et al* (2007) argue that this is a legitimate way of organising qualitative data analysis. Field notes and interview data were transcribed. Consequently the researcher read the field notes, transcripts and observed the data to make sense of it in its preliminary stage.

This study will implement guided analysis because units of analysis will arise from both the theory (Activity Theory) and the data. Guided analysis is relevant in relating theories from the literature to important issues that arise from the data generated from a study (Kohlbacher, 2006). Concepts will then be grouped, related and categorised (Rice & Ezzy, 2000). Themes that emerge from the data and theory will then be identified and related to the literature. Emerging theories and existent literature will enhance the internal validity and the theoretical level of theory in a case study research (Kohlbacher, 2006). Data indicating the identified themes will be reported. These emerged from the indicators of categories in the facilitator and students experiences in using online resources, and their attitude and feelings about this. Patterns that arose were categorised to project better understanding and meaning of the data. Themes and categories were used to represent the data. Qualitative researchers make use of direct quotations of their participants in the assumption that it reveals more data (Eysenck, 2004). Therefore direct phrases and sentences were used to maintain a sense of originality in the study.

4.14 CREDIBILITY / TRUSTWORTHINESS / CRYSTALLISATION

Qualitative research aims to produce valid knowledge of interpretations and understandings within a specific environment (Wahyuni, 2012). “Validity is the extent to which any researcher’s tool measures what is supposed to measure and reliability is the extent to which the instrument, when used more than once, will produce the same results or answers in the research” (Holloway & Wheelers, 1996, p.162). Again, the process of triangulation was applied to this study to increase its reliability. Triangulation refers to the process of using multiple data collection methods, analysis or theories to maintain the validity of the findings (Darko-Ampen, 2004).

Consequently, the researcher used a combination of multiple methods such as semi-structured individual and focus group interviews, observation, online questionnaire and online learning space analysis to enhance rigor, breadth and depth to the study. Further, the researcher implemented strategies such as prolonged engagement, peer debriefing and member checking as means to crystallise the data produced (Creswell, 1998; Savenye & Robinson, 2004). The researcher triangulated the data from the facilitator and students' interviews and observations with focus group interviews, learning space analysis and the online questionnaire.

According to Golafshani (2003), the concept of 'reliability' is often misleading in qualitative research since the quality of the study lies in generating an understanding, which is often difficult to measure. Instead, to ensure a degree of reliability an examination of trustworthiness is imperative. In describing trustworthiness in research Lincoln and Guba (1985) concur that the issues of credibility, transferability, dependability and confirmability are critical in evaluating qualitative studies. It is within this framework assessment of rigor in qualitative data is possible.

Credibility concerns itself with the accuracy of the data in the context of social phenomena under investigation (Wahyuni, 2012). The issue of credibility was maintained by checking the findings derived from the participants of the Curriculum Context and Change module in comparison with the results of findings from similar studies in the literature (e.g. Khoza, 2011; Jara, 2007; Boozerooij, 2006). Of essence, the researcher engaged in peer debriefing and member checking with to colleagues who had previously completed the Curriculum Context and Change module, and are further pursuing their studies at a higher level. This was to ensure sufficient representation of various construction of reality. In addition the researcher maintained verification with actual participants to check if the analysis and interpretation was true to their experiences (Maree, 2007).

Transferability refers to the extent of applicability from one study to other settings or environments (Wahyuni, 2012). As indicated by Lincoln and Guba (1985), transferability captures a rich, detailed and accurate account of the data. The researcher applied transferability by examining how similar studies in the literature dealt with similar information to ensure trustworthiness of the data. To ensure consistency, the researcher identified that if participants hold the same opinion then the findings would not be altered.

Confirmability means the extent to which others can confirm the results of a study, in order to ensure that it reflects the understandings of the participants, rather than the possible bias of the researcher (Cohen *et al*, 2007). Again, the researcher reverted to the literature and compared the

findings to increase confirmability. The researcher also sought the expertise of the two colleagues to check and examine the findings to determine whether or not it makes sense.

The issue of validity in qualitative studies is multifaceted because it includes various lenses through which a study can be examined in being true. These arenas include internal validity, external validity, content validity and construct validity. It is important to examine different types of validity to enhance the truthfulness of a research; however measurement is not an issue in a qualitative research, descriptive of this study. Since a case study style of research has been implemented in this study, the aim is to describe and not to measure (Christiansen *et al,* 2010).

Internal validity embraces the question of how the results of a study capture reality (Merriam, 1995). Contrary to an objective stance, the researcher derives meaning from individual experiences. In this study the researcher desired to explain, in great detail, the experiences of the facilitator and students in using online resources to explore curriculum issues. As stated earlier, validity is enhanced through a combination of multiple methods of data collection to verify the findings. Further purposive and convenience sampling were employed to substantiate the data. Also, the data was taken back to the participants to ensure plausibility in the results (Merriam, 1995).

External validity suggests the degree to which a researcher's observations can be accurately compared to those of other studies (Merriam, 1995). Interpretive qualitative studies have often been criticised for its lack of transferability from one situation to another (Darko-Ampen, 2004). However, owing to the thick, rich description associated with qualitative studies it is possible to transfer the findings to other contexts of a similar nature, based on sufficient information (Lincoln & Guba, 1985; Wahyni, 2012). Consequently the researcher maintained an in-depth explanation of the data, with the premise of possible applicability to similar contexts.

In *content validity* there is adequate coverage of the subject being studied, also widely used in experimental design (Changing minds, 2012). It is considered a subjective form of measurement because it relies on people's perception for measuring constructs that would be otherwise difficult to measure. It is objective when rigorous statistical tests are undertaken (Tariq, 2009). In this study the idea is not to provide measurable results but rather a qualitative analysis on the use of online resources as tools for teaching and learning.

Construct validity occurs when the theoretical constructs of cause and effect accurately represent the realistic situations they intend to model (Christiansen *et al,* 2010). The researcher used activity theory and cultural historical activity theory to support the theoretical framework of this

study and thereby the arguments and results that stem from the findings. In addition the spider web diagram has been implemented to examine curriculum issues more closely in aid of this study.

4.15 Ethical Considerations

Education is a critical component to the life of any community. Research in education, whether from a qualitative or quantitative spectrum, should seek to improve, build upon and cement the foundation for further developments in education. Ethics in research are crucial, particularly when it involves humans and animals (Christiansen *et al*, 2010). The consequence of such research inadvertently has a profound effect in the manner in which it is applied, and the implications that follow thereof. Given the very nature of qualitative, interpretive studies, the fieldwork in this study positioned the researcher in close contact with the participants interviewed and observed. Hence, the researcher had to be particularly cautious and decisive regarding what to record and how best to deal with conflicting and confidential responses.

It is pivotal that all research studies are guided by ethical principles. In this rationale Wassenaar (2008) singled four key principles that endorse ethical values. These include non-maleficence, beneficence, autonomy and justice.

Non-Maleficence suggests that the research should not cause any harm, intentional injury or emotional offense. Throughout the research process the researcher ensured that participants were in a safe environment when conducting interviews. Further, outside of the lecture venues campus security was always visible to prevent any possible threat or danger. Also, the researcher checked whether participants were comfortable with the process.

Beneficence indicates that the study should benefit other researchers or society at large (Christiansen *et al,* 2010). The researcher was fully aware of other curriculum courses offered at the university and other institutions, and believes this present study could have a positive influence on their pedagogic endeavours. This study could further be supportive towards other specialisations and context that are similar in nature (Lincoln & Guba, 1985).

Autonomy explains that every participant's thoughts, actions and rights must be upheld and respected (Wassenaar, 2008). Therefore the researcher sought consent from the university, academic cluster of Curriculum Studies, and the participants. It was also communicated to participants that they were free to withdraw their participation at any time in the study.

Justice was preserved in that every person involved in the study had access to it by requesting of the researcher to view the study in its completed form. People of diverse backgrounds, including race, age, gender, culture and religion were incorporated into the study to accommodate the spirit of democracy in South Africa.

According to Section 9(3) of the Bill of Rights (Devenish, 1999) no person may be discriminated against, therefore the researcher will try to ensure that the rights of the facilitator and students will not be violated throughout the research process. The primary concern in reporting the current study was to maintain privacy, anonymity and confidentiality. On the basis of ethics the researcher was careful not to jeopardise the facilitator's career or students' enrolment at the university or anywhere else. The researcher implemented a variety of ethical measures in this study. The initial stages led the researcher to gain permission from the Dean of the university (Appendix A) to use the premises and curriculum module as the research site. Once this was approved, the academic cluster of Curriculum Studies (Appendix B) was approached and positive consent was received. Next, the researcher sought to arrange a meeting with the facilitator of the course in which to negotiate a possible meeting with the students to gain prospective participants. It was agreed, and all students concurred that they would be part of the study, of which only five came forth to take part in the individual semi-structured interviews. Participant letters (Appendix C) were issued with positive feedback to participate in the research. It was also made transparent that documents and all activity via the learning space would be retrieved for the purpose of this study. Participants acknowledged and agreed.

The consent issued to all participants included assurance and protection of anonymity and confidentiality of all involved. This meant that the participants will not be identifiable to anyone reading the final report. Fictitious names for participants have been provided and the name of the university has not been compromised. Again, voluntary participation and freedom to withdraw at any stage without penalty was clearly articulated.

4.16 Conclusion

This chapter has argued the imperative nature and importance in the selection of relevant research design and methodology as a process critical to the success of data collection from primary and secondary sources. The chapter also justified the approach employed in full detail and the conditions under which the various stages of the investigations were undertaken from the establishment of initial contacts (university, academic cluster of Curriculum Studies and facilitator of the module), the choice of cases, pilot survey, and preliminary online questionnaire. The study adopted an interpretive research design, a qualitative research approach and a case study methodology. Students of the Curriculum Context and Change module and the facilitator

participated in the study. Five of the students and the facilitator were interviewed individually through semi-structured individual interviews. Nineteen students participated in the online questionnaire and the focus group consisted of 11 students. The researcher sought to inculcate more students to participate in the semi-structured interviews but they were not willing due to family commitments, full-time jobs and their part-time studies.

The study further indicated how issues of validity and reliability were addressed through the use of several data generation methods. These were taken care of using the different techniques. The researcher has explicitly articulated the value in selecting methods that are relevant and applicable to the evidence, in attending to the research questions that facilitate this study. The research methods adopted highlight the potential advantages and disadvantages of engaging with such strategies to ascertain the findings of using online resources in the context of the Curriculum Context and Change module. The chapter further discussed how the data was collected in conjunction with the identified methods. The sample lessons were presented as observed during the lectures and a detailed account of the interviews that transpired has been provided. Field notes have been used to justify the findings. The next chapter presents the evidence of the findings; describes the manner in which the researcher collected and analysed the evidence; and the interpretation that follows in accordance with the conceptual framework and the literature reviews. Consequently emerging themes that surfaced from the data were analysed and presented to support the research questions of the study.

CHAPTER FIVE
RESEARCH FINDINGS AND DISCUSSION

5.1 INTRODUCTION

The previous chapter outlined a comprehensive discussion on the research design and methodology utilised in this study. This current chapter concentrates on presenting and analysing the data that was generated from the field. The research represents a qualitative case study aimed at developing an understanding of the facilitator's and students' experience in using online resources as a tool for teaching and learning in the Curriculum Context and Change module. It further highlights the potential benefits and possible challenges that permeate the use of online resources as a strategy for educating in higher education, to draw plausible implications for recommendations for this type of learning platform. Consequently the study was guided by the following research questions that infused the process of generating data:

1. What online resources are being used by facilitators and students in the teaching and learning of Curriculum Context and Change module?
2. How do facilitators and students use online resources in the teaching and learning of Curriculum Context and Change module?
3. Why do facilitators and students use online resources the way they do in the Curriculum Context and Change module?

The data that addressed the research questions was generated through semi-structured individual and focus group interviews for the facilitator and students; observations of lectures; an online reflection; and document analysis through the learning space. This chapter articulates a summary of primary data generated from the facilitator and students of the course, as well as the observations of the lectures in the Curriculum Context and Change module at the university in Durban. It presents an overview of the process of analysing the data, following a qualitative approach. The researcher sought to indicate what the facilitator and students had said about the benefits and challenges experienced in utilising online resources in the teaching and learning of curriculum issues. Subsequently, data interpretation based on the framework espoused from the theoretical principles of Activity Theory or Cultural Historical Activity Theory guided the study. The theoretical framework defines and structures the components of the theories that inform how teaching and learning occurs in the digital era. New technologies are constantly being developed to transform education, such as the progression of online learning in higher education, whether through distance learning programmes or face-to-face encounters (Tutkun, 2011). Major findings in collaboration and significant themes, other than those presumed by the theories, have been identified and included to contribute to further exploration and analysis of the use of online

resources in the Curriculum Context and Change module. Finally, major findings presented as themes and categories that support the data are summarised.

5.2 QUALITATVE DATA ANALYSIS

Prior to the actual analysis, interview data was transcribed. The findings generated from the individual interviews were typed into word-processing documents. The transcriptions were given to the participants to check if the analysis reflected their own views. This aided the researcher in determining if there were any discrepancies in the transcripts, to avoid possible exaggeration or errors of facts (Neiuwenhuis, 2007). Due to the qualitative nature of this study, it is viable to conduct such an exercise because it is dependent on participants' beliefs, attitudes, perceptions and experiences in using online resources as a mechanism for teaching and learning. The data represented both benefits and challenges that affected the use of online learning in the Curriculum Context and Change module. Consequently, the researcher projected thoughts, words, phrases and actual quotes to identify relevant themes. Major categories were identified into which units of meaning were derived and highlighted. Simultaneously, sub-categories in conjunction with the major categories were then positioned and reflected as themes to represent the relationships that culminated.

In further understanding the benefits and challenges the facilitator and students faced in utilising online resources in curriculum learning, the researcher sought guided analysis to ascertain meaning from the data. This provided a systematic and rigorous manner of making sense of the findings (Henning, 2004). The conceptual framework of Activity Theory or Cultural Historical Activity Theory was integrated to permeate guided analysis. This does not limit the framework of analysis to the pre-defined concepts but caters for emerging ones that can be included (Cohen, *et al,* 2007). Again, the study was influenced by the interpretive paradigm, which inculcated the facilitator's and students' perspectives and experiences in using online resources to explore curriculum concepts and meaning from a unique standpoint (Mack, 2010). The interpretive framework is qualitative in nature whereby organisational and social realities are constructed as a mechanism of theorising, and this shapes and impacts reality that is part of a social and cultural context in which it occurs (Kim, 2003). Using the interpretive paradigm to better understand the findings generated, enabled the researcher to pose questions in the interviews that required the participants' expression.

5.3 DATA PRESENTATION

This section involves a presentation of the data for analysis and interpretation from the semi-structured individual interviews with the facilitator and students, as well as the observation lessons that took place in the lectures. The focus group interviews and learning space analysis

were used to corroborate with the views and opinions expressed in the individual interviews and observation. The literature review and guided analysis were used considerably to develop better interpretation of the data obtained from the interviews and observations. This greatly assisted the researcher in ascertaining the nature of using online resources in the teaching and learning of the Curriculum Context and Change module at a higher education institution in Durban. The research questions of this study facilitated the presentation of the data.

5.3.1 THEME ONE: SUBJECT

The data presented here were obtained from a case study at a university in Durban utilising the data generation methods of observation, semi-structured individual interviews, semi-structured focus group interviews, an online reflection and document analysis via the learning space. As a form of qualitative research, case studies can explore several research designs to triangulate the data (Bryman, Stephen & Campo, 1996). In rightfully abiding by the principles of ethics in research, the real names of participants and the university have not been divulged, instead pseudonyms have replaced them. This section explores the facilitator's and students' biography because they contributed positively to the experiences in using online resources as a mechanism for teaching and learning in the field of Curriculum. The biography of participants is valuable because it greatly helped the researcher to develop a deeper understanding of the way participants behaved in this study. Moreover, this premise is consistent with the ideology of a case study research that suggests that a researcher is able to provide a detailed description of the data in a context-specific situation (Maree, 2007). In this sense a close interaction transpired with the participants of the Curriculum Context and Change module in generating data.

According to Li and Bratt (2004) the *subject* refers to the individual or group whose point of view becomes a reference for the unit of analysis. Kain and Wardle (2008) confirm this perception by adding that the subject (person or people) directly participates in the activity a researcher undertakes to investigate. Essentially the subject will convey their particular beliefs, values and assumptions that bring a different history to the activity system, and it is within this spectrum a researcher determines how the subject is related to other components of the activity (Thuraisingam, Kaur, Yeo, Briguglio, Sanderson, Mahmud & Wallace, 2012). Consequently, the researcher has identified the facilitator and students as the subjects of the Curriculum Context and Change module since it was their experiences fuelled by values, beliefs and ideas that were used to generate and make sense of the data. The component of subject in the activity system also coincides with the principles of the spider web curriculum that describes the facilitator (teacher role) as one who facilitates learning, and students as the recipients of this learning. The researcher was able to compile a profile of the facilitator and five students using semi-structured interviews. Although the study consisted of thirty-five students, only the five most easily

accessible volunteered their participation, in which the researcher was able to ascertain their personal profiles. The participants were free to answer questions about themselves and their experiences to contribute to the study. This helped the researcher in further understanding their use of online resources in the module.

5.3.1.1 Profiles of Participants

The Students

The researcher selected the participants based on the purposive sampling method, described earlier. Students were chosen on the premise of their availability and convenience amidst their full-time teaching jobs and other commitments. It was arranged during the initial discussion in setting up the interviews that the researcher would meet students at the university at the agreed date and time. This was advantageous for the researcher as this involved close contact that permitted first-hand experience and understanding. The participants in the study consisted of five students and one facilitator of the Curriculum Context and Change module. For the purpose of ethical considerations in protecting the anonymity of participants, students were referred to as Participant 1 (P1), Participant 2 (P2), Participant 3 (P3), Participant 4 (P4), and Participant 5 (P5). The facilitator's identity has also not been compromised, and will continue to be addressed as the facilitator or interchangeably as the lecturer.

Participant 1 (P1)

Participant 1 is a full-time educator at a local high school, within close range to the university. Therefore he attended most of the lectures in the module, and was consequently enthusiastic to share his experience regarding the use of online resources with the researcher. P1 is in his early twenties and is a part-time student of the Honours programme. He just recently graduated with his Bachelors Degree in Education at the same university involved in this study. His field of specialisation is in Computer Applications Technology, which he thoroughly enjoys teaching to high school students of grades 10, 11 and 12, since his secondary schooling experience also afforded him the opportunity to undertake the subject. Despite limited resources within his school environment, he maximises every opportunity to fully integrate students with the skills and knowledge of computer applications. As a result of his expertise with computer technology, P1 was more than familiar with the use of online tools in the teaching and learning situation, and therefore felt comfortable in applying this pedagogic approach to the course. His experience further came to bear in his assistance to other students in the class who were first-time users of an online learning platform. He helped students to log on, and access the relevant online tools that were appropriate to each lesson. Evidently he demonstrated a good relationship with other students as well as the facilitator since he continually participated in class discussions and debates. His responses were valid and meaningful in that they stimulated further debate amongst

other students. In this sense it indicated that he was prepared for the module and understood the concepts and knowledge being disseminated and created. His premise in selecting the module abides in developing his professionalism as an educator, specialism in the field of curriculum and anticipated growth opportunities. This was additionally evident in his formal, yet unique sense of dress style that showed his was passionate and professional about what he was doing.

Participant 2 (P2)

P2 is in her early forties and has been teaching for approximately 18 years as a primary school educator. Her current field of specialisation is in Natural Sciences and since she is a full-time educator, has taken Honours programme on a part-time basis. As she is a mother of two, with a daughter in grade 12, establishing interview times was initially difficult, but not impossible. Fortunately an amenable date was arranged and the interview commenced as planned. P2 is passionate about her career but admits that after many years it can become monotonous and de-motivating. In addition, she expressed concerns over the inadequacy of workshop programmes instituted by the Department of Education and argued that they were sometimes insufficient. Consequently she endeavoured to study in the field of curriculum to ignite and develop her potential as an educator that will not only realise her personal ambition but demonstrate better teaching and learning skills to assist her pupils. The use of online resources as a pedagogic implementation in the course was relatively new to P2, as her current practise as an educator did not facilitate this type of learning. Presumptuously she was a little concerned as to whether she would be able to successfully cope with the module due to her lack of expertise with the use of an online methodological approach. However her ambition was greater than her worries, and pursued the module. She had a reasonably good rapport with other students and facilitator of the class despite admitting to being shy and passive in social situations. P2 personally feels that in a progressive South Africa people need to continually develop their professionalism to give of their best to students, and therefore explore issues of the curriculum that can influence their teaching and learning abilities.

Participant 3 (P3)

P3 is a full-time student of the university and lives on the campus residence. Therefore the researcher experienced no difficulty in meeting with him. P3 is in his early forties and hales from Botswana, a neighbouring country to South Africa. His area of specialisation is Music and has been teaching for 8 years in secondary schooling. Thereafter he assumed a position at department level for Music in Botswana before temporarily relocating to South Africa. This appointment led to P3 being tasked with the responsibility of developing a Music curriculum in his country and consequently selected this university to materialise this endeavour. The researcher was curious to find out why he chose this particular institution and his response related to the

convenience, credibility, infrastructure and resources the university posed. The use of an online learning environment was relatively new to P3, so his first immersion with the online tools was initially confusing. Yet just after two lectures he quickly learned to log on and enter the chat room with fellow students. He believes that it is always important to revise and improve teaching and learning strategies, particularly when innovative ways are being introduced to the rest of the world, and there is a need to keep up in one's own country. His desire to establish a Music curriculum stems from the decline in Music education in schools, and is he is determined to see it re-admitted.

Participant 4 (P4)

Like P1, P4 is in her first year of teaching and is a part-time student of the university. She is in her early twenties and is currently filling in a substitute position at a local school. Her area of expertise is in Life Orientation and Social Sciences, and teaches grades 7 and 4, respectively. The use of online resources as a tool for teaching and learning was new to P4; therefore, like P3 and P2, she too experienced limitations in her first few encounters with the module. However, she did convey that she is familiar with some of the online tools because of her frequent use of social networking. Shortly after, she assimilated well and confessed it is a much needed approach to transform a person's pedagogic skills, especially when your pupils are well groomed in the area of technology. Her contemplation and hence selection of the Curriculum Context and Change module arises from her need for growth. She was deeply worried at the beginning of the year because she could not find a suitable teaching job and was left with little choice but to assume a substitute position in her current school. Further this does not guarantee permanency and her position could be revoked at any time. She believes that the study of this course can open new doors of opportunity and employment at department or tertiary level institutions. Since she was not accustomed to an online learning environment P4 quickly familiarised herself with other students who assisted her in times of confusion, and therefore had a good relationship with those who sat around her. In this sense P4 asserts that the knowledge acquired and skills developed through this module should have important bearing for her future ambitions.

Participant 5 (P5)

P5 is in his early forties and is currently employed at the Department of Education at district level. The first seventeen years of his career P5 assumed the position of secondary school teacher. He specialised in the field of history for grades 10, 11, 12, and agricultural science for grade 10. He is ambitious, self motivated and displays a high enthusiasm for growth and development. Currently he is employed as a subject advisor for the Department of Education for the past five years. P5 was obliged at all times to arrange for possible interview dates, considering his family responsibilities, full-time job and part-time studying. P5 appeared to be well inclined with the use

of online resources as a tool for teaching and learning, particularly due to its frequent use in his current state of occupation. Since he is involved in curriculum dissemination at school level, this sparked interest to further explore issues in this area and beyond. P5 stated through the one-to-one interview, “I think we need a curriculum that will enable all learners from any context without being hindered by material/resources. I think material conditions of inequality are a stumbling block to the real curriculum as it fosters consumerism, dependency rather than creativity / originality, independence and self-sustainability. Curriculum should make people flourish under any given circumstances.” Drawing from this statement it is evident that he is passionate about curriculum and believes the module assisted him in gaining deeper knowledge about the ideologies, influence and position curriculum holds in transforming South Africa.

The Facilitator

Besides facilitating the Curriculum Context and Change module, the facilitator was also assigned to assist and work directly with the researcher throughout the data production period. He is in his early forties and has been with the university for more than 10 years and has achieved his doctoral qualification. He was the very first participant to agree to take part in the study and was readily available for the negotiated interview times. Further he responded efficiently to all telephone calls, meetings and emails requested by the researcher. The facilitator’s current area of specialisation with the Honours programme is in Curriculum studies, and has also been teaching PGCE (Post Graduate Certificate in Education) in Classroom Technology since the year 2003. In addition he has also coordinated and taught Professional Studies for two years. He has an excellent relationship with his students, and is extremely encouraging and motivating. As an alternative to the designated lecture times, students have an opportunity to consult with him on a one-to-one basis, which explains his rapport and commitment to them. He is punctual to lectures and goes beyond the scheduled time to assist students. In terms of the use of online resources to facilitate the module, he is adamant that it is relevant for implementation to accommodate the needs of a tech-savvy generation and the benefits it affords its users. He cautions that it should be used in the context of Technology of Education (TOE) and not only Technology in Education (TIE), because it must be used as an instrument to disseminate and support the teaching and learning process, and not the basis of educating (Khoza, 2013). He further asserts that the knowledge gained and skills acquired through the course can create avenues of growth, opportunity and employment. Of the four facilitators involved in Curriculum Studies, the facilitator involved in this study was the only one who is qualified in the field of educational technology and is therefore the only one who fully utilises and online platform. One other facilitator uses online resources for teaching but to a low degree. The others mainly use the Turnitin programme to encourage their students to submit their assignments because it is a requirement of the

university. This suggests there is a need for all facilitators to develop their skills and training in utilising online resources so that they can implement WBTL effectively.

In analysing the participants' profiles several assumptions gave rise to interpretation. It appeared that only two of the students, P1 and P5, were more familiar with the use of online resources as a tool for learning since the module began. P1 had majored in his undergraduate degree in an ICT course that enabled him to teach Computer Applications Technology at his current school, and because of his line of work at Department level, P5 was also quick to assimilate with the online tools used for the module. For P2, P3, and P4 it was their first-time experience using the predominantly online resources as a tool for teaching and learning. This was due to the fact that they were not teaching curricula that involved the use of online tools, let alone a computer. P2 teaches Natural Science at primary school level and uses textbooks, worksheets and apparatus to facilitate her teaching. She stated that the school did not have the funds to invest in ICT equipment to allow for an online learning platform, even to a small extent. P3 is currently not teaching, since he is a full-time student at the university. P4 teaches Life Orientation and Social Sciences, and makes use of textbooks and worksheets to supplement her teaching strategies. Life Orientation has a practical component which caters for students to engage in sporting activities to promote health and wellbeing. Therefore P4 has had no experience in using online learning prior to the Curriculum Context and Change module.

P2, P3, P4 and P5 indicated in the interviews that during their undergraduate study facilitators mainly used hard-ware (HW) resources such as a laptop, projector and white screen to display images and content. So for them using online resources predominantly to facilitate teaching and learning was a new experience. Khoza (2011) contends that teaching and learning through WBTL environments does not require advanced web 2.0 technologies, but is easily accessible and flexible to learn. Therefore these students did not experience serious problems in learning how to use the online tools because they did not involve complicated technology or advanced learning management systems. Further, all students indicated they were frequent users of social media tools; hence this helped the process of quickly learning with online resources.

Through observation, individual and the focus group interview it appeared that the facilitator was well immersed with the skills and knowledge to utilise an online learning platform in the module combined with face-to-face interaction. The best practices in teaching and learning is not about advocating a prescribed syllabus but about sustaining an effective learning environment (Stears & Gopal, 2010). His years of experience in teaching Classroom Technology have impacted the use of online resources in the Curriculum Context and Change module. In the avenue of teaching, facilitators gain confidence as they continue with their work year after year (Feiman-

Nemser, 2001). Experience holds a vital role in dealing with observable and measurable outcomes in range of proper use of assessment which includes evaluating skills, attitudes and knowledge. This experience has been supported by a Diploma in Information Technology, Honours and Masters in Educational Technology and PhD in Curriculum Studies and Educational Technology that the facilitator possesses. This then suggests that he is well qualified and experienced to undertake the facilitating of the module.

In South Africa there is a shortage of Educational Technology lecturers. Ravjee (2007) attributes this deficiency to a lack of policies and structures in higher education institutions regarding Educational Technology, and the time associated with learning new vocabulary. In addition lecturers do not have the pedagogical skills, peer communities or WBTL guidelines to maintain online environments. As a result lectures are unqualified, and the ones who are qualified leave for better employment opportunities elsewhere due to insufficient salary requirements. Prensky (2001) identified lecturers who did not know how to use the emerging technologies in WBTL as 'digital immigrants' because it was unnatural to them, therefore they had to learn to use them. This was in contrast to 'digital natives' whom as technology progressed, so too did they develop their technological skills, attitudes and knowledge about learning with WBTL platforms. Based on this rationale the researcher has identified the facilitator in this study as a digital native because he has the knowledge, skills, attitude and values in facilitating using online tools for teaching and learning. His years of experience and qualification also contribute to this assumption.

The role of the facilitator can be understood as one who disseminates information in accordance with the relevant learning outcomes that must be achieved. Facilitators are also responsible for designing, selecting and applying appropriate learning activities that ensure the achievement of the intended outcomes of a module (SLO, 2008). In this sense the researcher ascertained, through the various data generation techniques, that the facilitator of the course in this study was instrumental in implementing the various learning activities in the context of curriculum issues, in alignment with the learning outcomes designed. According to Van den Akker, de Boer, Folmer, Kuiper, Letschert, Nieveen and Thijs (2009) the facilitator assumes a teacher role in the spider web curriculum. The teacher represents the initiator as one who starts or directs the learning process. Therefore it was observed that the facilitator would lead students through each part of the lecture in using online resources to administer the content of the module.

5.3.2 THEME TWO: OBJECT

The subjects of an activity system are directed towards an overall goal (Li & Bratt, 2004). This process involves having a strong workable foundation (object) in order to achieve the desired outcomes. The *object* refers to the area in which the activity takes place and is shaped and

transformed into outcomes with the assistance of physical and symbolic external and internal mediating instruments, tools and signs (Engeström, 1993). In other words the object is the goal of the activity. It has also been used interchangeably with the *motives* for participating in an activity, or a comparison with the material product that participants attempt to achieve through an activity (Yamagata-Lynch, 2010). Primarily the object is the reason why people opt to participate in an activity because proper establishment of the objectives sets the subjects in a clear cut direction of having purpose and achieving goals. Drawing from these perceptions the researcher identified the content of the module as the object in this study. The table below illustrates an outline of the module content.

Tentative dates	**Themes to be covered**
14/02/2013	Introduction and definitions/perspectives of curriculum
21/02/2013	Curriculum in development
28/02/2013	Curriculum design theories
07/03/2013	Aims, objectives and learning outcomes
14/03/2013	Online curriculum design theories and other relevant resources
21/03/2013	Evaluation / Assessment of Online curriculum and Proposal development
28/03/2013	Proposal development
04/04/2013	Teaching with learner-centred approach (Curriculum Context)
11/04/2013	Online teaching with learner-centred approach (Curriculum Context)
18/04/2013	Historical Development of Curriculum Change in South Africa
25/04/2013	The Politics of Curriculum Change in South Africa
02/05/2013	The Official Curriculum in South Africa: OBE / NCS / CAPS and Curriculum Change
09/05/2013	Educator Competency and Curriculum Change as well as Revision
16/05/2013	Revision

Table 5.1 Outline of Module Content

According to Van den Akker, de Boer, Folmer, Kuiper, Letschert, Nieveen and Thijs (2009) the 'content' determines what students learn and the 'learning activities' suggest how they are learning (p. 39). Hardman (2008) affirms these sentiments by adding that the object of an activity system aims to develop and reinforce students' content knowledge. Table 5.1 above represents the main topics that emerged through document analysis via the online learning space. Students were also given a hard copy for their personal files. The content topics appeared to accommodate all the areas or issues of curriculum that needed to be learned in the module. Consequently this infused observable and measurable learning outcomes. The facilitator used the learning outcomes to evaluate students' performance in terms of understanding the content. However Khoza (2013a) cautions that outcomes that use words such as 'understand, know and learn' are difficult to measure or observe. Therefore, the facilitator stated all the intended outcomes of the module at the beginning of each lecture to maintain a relationship with the content. In this section the issue of content cannot be interrogated in isolation because the components of an activity system are related and thereby in constant interaction (Thuraisingam

et al., 2012). As such the components of the spider web curriculum support the rationale and are consistent with each other. This further reveals that there is a good relationship between aims/objectives, content and outcomes that signify a good learning signal (Khoza, 2013b).

The literature has addressed the argument of hard-ware (HW), soft-ware (SW) and ideological-ware (IW) to represent awareness of teaching and learning strategies or resources. Rutishauser-Chappelle (2007) contends that these are important in WBTL environments because they create educational opportunities that would be otherwise difficult to reach. IW is symbolic of teaching and learning strategies, research findings, theories of teaching and learning, and experiences. Thus the researcher has identified content (object) as IW because the module contains such issues. Through document analysis it was discovered that the content included theories of learning such as Activity Theory, Entertainment Education Theory, Curriculum Design Research and Online Curriculum Design Theories to help students with their understanding of curriculum issues. Further paradigms of learning were also explored to assist students with their assessment tasks. Students were able to access these through the online learning space, which were available for downloading for personal study and to converse with during lectures.

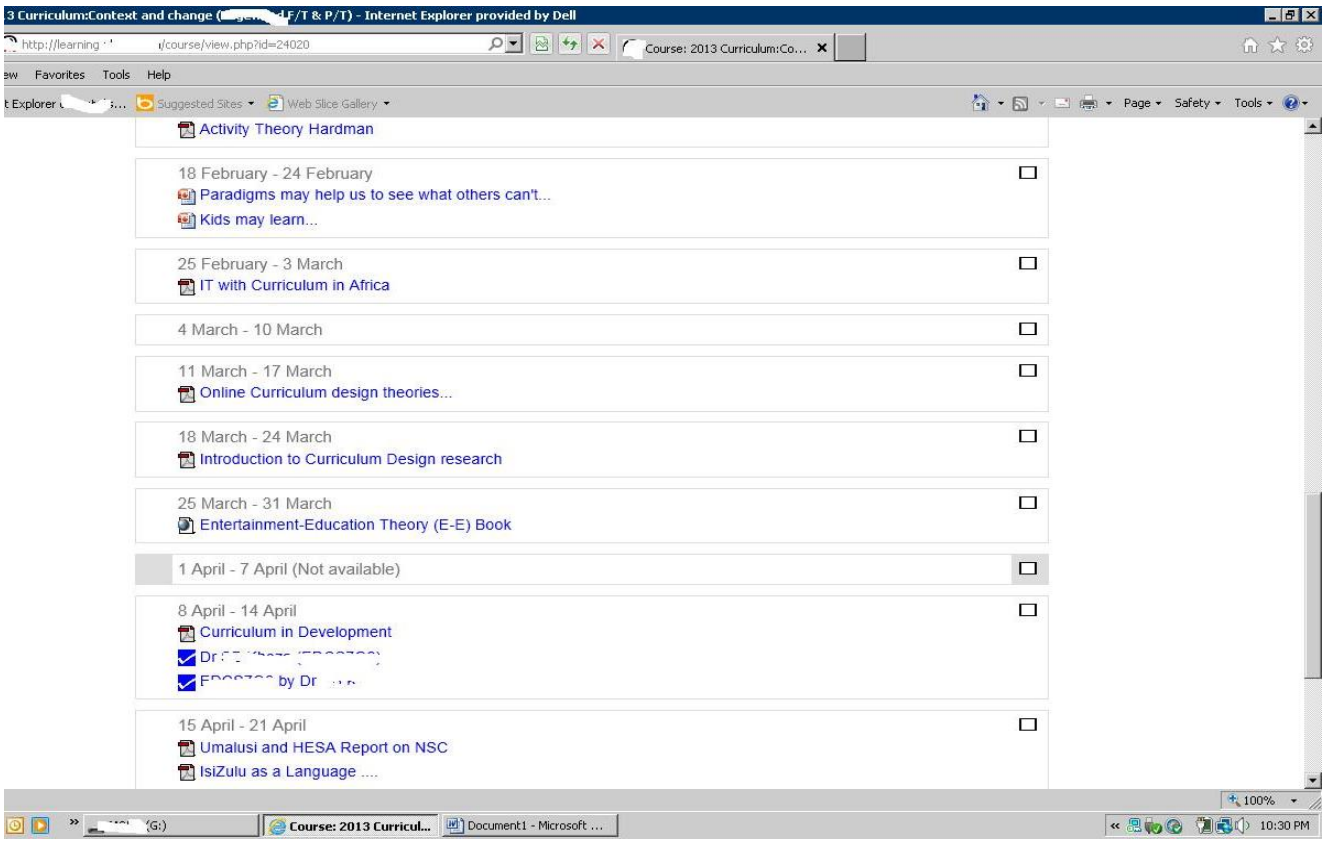

Figure 5.1 Learning Guide (Retrieved from the online learning space)

The above figure 5.1 represents the content topics (IW) that were retrieved via the Curriculum Context and Change module learning site (The name of the university and participants have been blocked to adhere to the ethical regulations of this study). It was observed that students were able to access each topic listed and download them for analysis. The Figure also illustrates that research paradigms and learning theories were part of the content material used for teaching and learning. The dates indicated show that each week a new piece of content was introduced. Online and offline theories of learning were incorporated into teaching and learning. The premise surrounding this was not to overshadow face-to-face methods of delivery but rather embrace it to combine HW, SW and IW resources to promote better learning avenues for students through a blended learning approach (Khoza, 2013c).

To determine whether the content was relevant to the learning outcomes the researcher put the following question to the facilitator during the interview:

Researcher: *"Do you believe that the module content is relevant to the learning outcomes of the module? Why?"*

Facilitator: *"Curriculum Context and Change involves online and offline curriculum design knowledge, skills and values/attitude as well as the evaluation of any curriculum… The projects require the students' understanding and use of ideological-ware, hard-ware and soft-ware, e.g. curriculum theories that integrate different hard-ware, soft-ware into learning. This helps students with curriculum design/building with relevant resources and critical analysis. This then leads to better educational opportunities."*

This suggests that learning contexts that include WBTL have to inculcate a strong awareness of HW, SW and IW into teaching and learning of the content material. It also postulates that by implementing these three principles it will create better learning and educational opportunities for students. Further this means that facilitators have to be aware of teaching and learning principles when administering the content in a WBTL environment because they have to use learning strategies that are consistent with their students' level of learning. Coincidentally these support the rationale of the spider web curriculum determining what students learn (content) and why. In terms of the outcomes these will be discussed in greater detail at a later stage.

Hesham and Wing (2004) advocate that WBTL platforms have the potential to reach all kinds of students that can accommodate slow learners and minimise the gap between the differences in academic performances. Such contexts utilise different learning styles that inculcate a learner-centred approach to teaching and learning. In reviewing the content topics in Table 5.1 it appears

to specifically point out the exploration of learner-centred approaches. The following comments were made during the focus group interview from participants:

P8: *"I found the curriculum topics/issues discussed meaningful because it gave us (students) the opportunity to find out about things like CAPS that we were unclear about through debates and discussions."*

P10: *"The content broadened my thinking, especially as a high school teacher because it helped me better understand curriculum change in South Africa so this can help me develop as an educator and in so doing [help] my learners"*

These comments suggest that the content of the module was appropriate because the learning outcomes included that students should be able to determine curriculum change. It also engaged them in critical thinking through class discussions/debates (face-to-face) by viewing the content (object) online, using journal articles and other learning material. The comments further indicate that the facilitator used a learner-centred approach because he allowed students to take in charge of their own learning by drawing from their own experiences and ideas about curriculum. It was observed that students would frequently talk about their classroom encounters and school policy in their current school of occupation. This was then compared to the content they were learning about during the lectures. They wanted to determine whether what they were learning about at university was actually taking place in their classrooms at schools. This was particularly significant because schools in South Africa were in the process of adapting and implementing the new Curriculum and Assessment Policy Statement (CAPS) and since its inception there have been some misconceptions. Based on the workshops that some students attended through the Department of Education, and what was conceptualised in the lecture discussions, they needed to ascertain what actually should be taking place in the teaching and learning environment.

5.3.3 THEME THREE: TOOLS/RESOURCES

As people converse with one another to strive towards achieving goals, they develop and implement tools to facilitate their activities (Kain & Wardle, 2008). The presumption is that *tools* assist people in solving problems more effectively and because of this mechanism the tools employed can change the activity as desired. A tool can relate to anything that is used in the transformation process of teaching and learning, including both material tools and tools for thinking (Kuutti, 1995). Learning consists of different voices, where learning becomes the responsibility of selecting signals, as such, e-learning signals because the Curriculum Context and Change module uses a WBTL environment. Khoza (2012) posits that "any person or thing that communicates learning becomes a teaching and learning resource" (p. 72). This means that tools are represented by resources that help teaching and learning to take place. The field of

educational technology is such that it caters for the use and application of different teaching and learning resources (Amiel & Reeves, 2008). Khoza (2012) argues that educational technology uses three predominant resources, namely, hard-ware (HW), soft-ware (SW) and ideological (IW). The word 'ware' suggests awareness in using these three types of resources. These have been discussed and embraced earlier, but it is in this section that it can be extensively interrogated and explored to provide a more intensive analysis. HW and SW articulates teaching and learning that one can see and touch, whilst IW is symbolic of that which cannot be seen or touched. HW and SW fall in the domain of Technology in Education (TIE) and IW lies within the spectrum of Technology of Education (TOE), as addressed in the literature.

According to Kuutti (1995) the function of the tool is to mediate between the subject and object. In essence of this study it means that resources (tools) mediate between the participants (subject) and content (object). So in actual fact, the teaching and learning resources (online and offline tools) in the Curriculum Context and Change module are used by the facilitator and students to interrogate the content/learning material, as determined by the data generation methods employed in this study. Kirkup and Kirkwood (2005) also support this assumption because they contend that in activity theory the principle of tool mediation is applied which means that human activity (teaching and learning) is driven towards overall goals (exploration of curriculum issues) mediated through the use of tools (learning resources). In the context of this analysis, the researcher has identified several HW, SW and IW resources under the umbrella of TIE and TOE that has been implemented for the purpose of teaching and learning in the Curriculum Context and Change module. The researcher has selected these resources because, not only did they emerge from the findings, but HW and SW resources are powerful tools in orchestrating paradigm shifts in WBTL environments (Rutishauser-Chappelle, 2007). The following discussion will present a discourse regarding the use of learning resources (tools) in detail, using the data generation methods selected.

5.3.3.1 HARD-WARE (HW)

Hard-ware resources can be described as any machine or tool used for teaching and learning environments, that one can see or touch (Khoza, 2012). HW falls within the domain of TIE because tools carry information that students learn from, although Khoza (2013) cautions against this. The HW component is the same for e-learning/WBTL (online contexts) and face-to-face learning (offline context). Examples of such include computers, Smart Board, and an over-head projector. The researcher identified the following HW resources that were used for teaching and learning of the Curriculum Context and Change module.

5.3.3.1.1 Computers

A computer represents an electronic device that manipulates information or data (Goodwill Community Foundation, 2013). It has the ability to store, retrieve and process data. Significantly it allows browsing of the internet, and this capability has led to momentous integration with teaching and learning strategies across all levels of education (Tutkun, 2011). Hard-ware in a computer refers to the physical components that make up a computer system (Fisher, 2013). These include the motherboard, central processing unit (CPU), random access memory (RAM), video card, hard drive, monitor, keyboard, mouse, battery backup, analog modem and scanner, amidst others.

The researcher observed that the lecture venue where the curriculum lectures took place had more than enough computers. They were all in working order and were efficient, in terms of speed, in logging on students and accessing the internet. The computers were fairly new since the LAN (computer/lecture venue) was one of the latest developments in infrastructure the university boasted. All twenty two of the face-to-face students and the facilitator made constant use of the computer during the lecture. The computer was use to supplement the online program of the course, and hence propagate the use of online resources. Without the computers it was not efficiently possible to operate a WBTL environment. Thus, this HW device promoted the use of online learning in collaboration with face-to-face learning, as indicated by the focus group interview responses:

P8 had this to say regarding the availability of the computers:
"We had no problems with computers. In fact there were so many that even if I had a problem with one I could easily move on to another. I suppose because we were a small class."

P3 commented the following:
"The computers did not freeze; neither did we experience any technical difficulty. It was easily accessible."

This suggests that in order to create the relevant educational opportunities, the HW components need to be in effective working condition (Rutishauser-Chappelle, 2007). As such there were no technical difficulties regarding the use of computers. Further the immense availability of computers in the LAN would circumvent any possible problems with a few. Based on the interviews and observation, it was clear that it was not a first-time experience for any of the participants in using a computer, because at some stage of their undergraduate degree, they would have had to engage with them in order to meet university requirements, such as typed assessment tasks.

5.3.3.1.2 White Board

In more recent developments the 'interactive white board' or 'smart boards' (digital boards) have become a significant feature in teaching and learning strategies (Gage, 2005). The projector displays images from the computer screen onto the board. However, upon observation, it was noted that the course did not make use of either digital boards, but instead a white screen was supplemented. In a similar style the projector displayed images and information from the computer onto the white screen; however the screen could not be touched digitally to make inferences, as is with a digital board.

The white screen was a pull-down type which only the facilitator handled. As such, the facilitator operated a main computer which was connected to the projector and thus displayed data from that computer. The white screen was used to present information that that was accessible to the entire class, whether they sat at the back or front of the room because it was located high above towards the ceiling to accommodate a holistic view. The facilitator used the white screen to project images of the components of activity theory to demonstrate how they interact as a system. The white screen also projected the principles of the spider web curriculum in a spider web image to articulate the interconnectedness between the parts. Also, since proposal development was a significant aspect of assessment, the facilitator was able to show this on the large white screen and thereby explain and discuss using a face-to face approach.

From the observations it can be maintained that the facilitator used the white screen to display images and content from the computer. It served as a compliment to online teaching and learning, in that the facilitator used face-to-face teaching to explain what taking place online (blended learning approach). Whilst the face-to-face discussions occurred students were able to simultaneously visualise the content on the white screen in front of them. It appeared that the facilitator was responsible for handling and mainly deciding what images or content were displayed on the screen. Harden (2002) asserts that in the current plethora of education, a learner-centred approach is being promoted. As such, it might seem that the facilitator's action is in contrast with this ideology, but Anderson and Elloumi (2004) argue that the three approaches, teacher-centred, learner-centred and content-centred should be used according to their strengths. They further contend that if facilitators want an effective approach for presentation they should use a teacher-centred approach. Therefore the facilitator presented curriculum information this way.

5.3.3.1.3 University Library

The university provides sophisticated and attractive facilities to an increasing number of Education students and central to all major amenities. Recently the campus has extended its infrastructure to accommodate the immense volume of students interested in Education courses. New buildings emerged, with spacious lecture theatres, including new computer facilities introduced to meet the growing needs of its students. As such the university poses a huge library located central to the lecture venues, cafeteria, sports centre/field and research centre. They possess a range of books, particularly in the range of education, and other fields as well. Each student is allowed to borrow books as long as they have a valid student card. The library also contains a separate computer LAN for Honours students.

The library is considered a resource of hard-ware nature because not only is it a physical building, but has a multitude of hard-copy books that students can engage with. Upon interviews with participants, the following responses emerged:

P3: "I live on the campus residence; I have lots of free time so I visit the library to study. I borrow books just to broaden my knowledge and if I need to read, but generally I use the internet a lot because it's much quicker."

P10: "I hardly ever borrow library books, because most of my research is done online, and the search engines are very good. Also fast too. I only go to the library to use the computer LAN."

P2: "I did not use the library at all, because I did not have the time. All my research was done online because there are lots of journal articles available on the web. Also the course learning space had many available articles related to assessment."

The above statements indicate that these students hardly used the library to assist them in the Curriculum Context and Change module. Hampton-Reeves, Mashiter, Westaway, Lumsden, Day, Hewertson and Hart (2009) outlined in a report that an increasing number of students opt for search engines to find books in order to save time they would have lost in going to the library. They argue that this does not replace the value of library resources because some students are aware that certain online sites are not credible, therefore still hold the library as an important resource. However due to the availability of e-learning, students are moving towards this direction because of its swiftness and ease (Hampton *et al,* 2009). In this sense it can be maintained that the students preferred using the online platform to engage with content and research rather than the library, in terms of hard copy books. However, the library hosts an online

component that allows students to access material via the site. This will be discussed further in the next section.

5.3.3.2 SOFT-WARE (SW)

Soft-ware (SW) refers to any material that is produced for the HW to display information or communicate learning (Khoza, 2013). It is part of TIE and this means that it alone cannot be used to enhance the process of teaching and learning (Rutishauser-Chappelle, 2007). An example of SW includes face-to-face learning transparencies for e-learning PowerPoint slides. Although HW and SW fall into the category of TIE, the effect on teaching and learning somewhat differs. It is possible to see and touch the transparencies, symbolic of HW, but one can only see the PowerPoint slides but not touch them, descriptive of SW. This suggests that almost all the e-learning SW resources are different from the face-to-face learning because recipients will only be able to see them and not touch them. Alternatively, all face-to-face soft-ware comes in the form of hard copies. The researcher identified the following SW tools that comprised the Learning Management System (LMS) employed in the Curriculum Context and Change module.

5.3.3.2.1 University Library

As mentioned earlier, the library not only falls in line with the HW component (books, journals, periodicals), it also has a SW component because it offers online services that can be accessed from the library itself. Online tools and resources are SW because they can only be seen and not touched. Since the campus at which the research takes place is affiliated with four other campuses that are part of the main university, students are able to access even those libraries online. When probed about the use of the library participants had this to say:

Facilitator: *"The online resources from this university library and other campuses are used by facilitators and students, especially. They include various journals, periodicals, articles and books available online."*

P4: *"To be honest I don't actually borrow books often from the library but I do use the online library because I can download the information quickly. It's the same information, but just quicker."*

This suggests that students use the online service (SW) of the library more than its (HW) resource. Hampton-Reeves (2009) acknowledge in their study that students use the online service because it is quick, and books are more time consuming to read. The facilitator also conveyed that using books, journals and other resources (HW) were still a very important resource to engage with, and therefore still utilises them. The availability of the online library

created better opportunities for students to access learning materials from other affiliated campuses that might not be available at their own campus of study. Further, this alleviated the problem of students physically travelling to other campuses to acquire learning material that can be time consuming and costly.

5.3.3.2.2 Chat Room

Undoubtedly the internet has brought about an important dimension for teaching and learning by creating a virtual learning environment (VLE) (Kear, 2007; Bonk, 2001). Allowing students the opportunity to interact with each other through VLE is critical especially where immediate feedback and interactivity is required (Wang, Newlin & Tucker, 2001). The chat tool caters for students to interact, send and receive messages immediately (Paparazzi & Williams, 2000). This form of live communication occurs in a chat room accommodated in an online learning environment via the internet. The chat tool affords synchronous communication between online facilitators and students, and between students themselves.

Drawing from these perceptions, the researcher observed during the first two lectures that the facilitator prompted the use of the online chat tool as resource for exchanging greeting. In this way students could get to know each other, and also familiarise themselves with the online tool. Wang *et al* (2001) posit that students who have a shy or introvert personality may have the opportunity to 'speak out' in a chat room because they do not face each other and may therefore have the courage to express themselves.

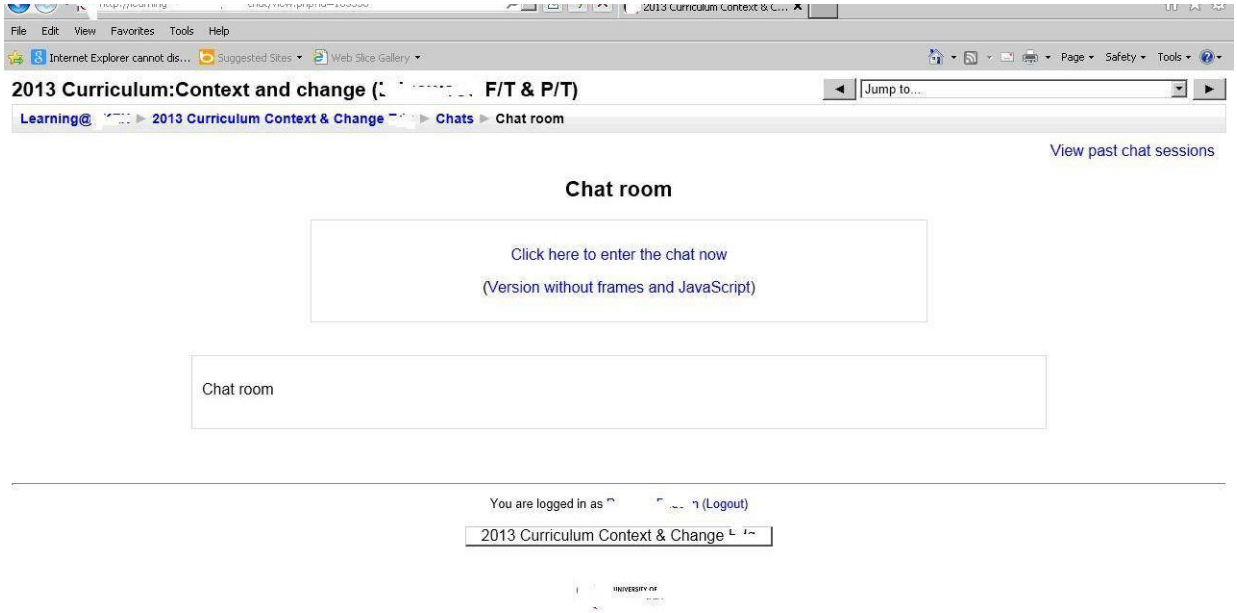

Figure 5.2 Screen shot of the Chat Room (Retrieved via the course learning space)

Figure 5.2 represents the chat room that each registered student of the module is able to enter and converse with others that are logged on at the same time. Students are able to also view past chat sessions by clicking on the top right corner of the web page, especially if they were absent or missed out on important discussions. This can be downloaded for their personal benefit. Each student can enter the chat by clicking the centre button, and thereby post their comments for all to view.

As the number of lectures progressed over time, the chat room became more than just a space for social conversation. Students were in the process of preparing their research proposals, and the facilitator used the chat room as a learning environment where each student posted their topic whilst others healthily critiqued it. The aim was to provide recommendations and recognise areas of improvement for each student from their peers and the facilitator. Comments were made via the chat session so that others could learn from it by revising their own research topics.

P4 posted the following topic in the chat session:
"Exploring the inability of reading and writing with grade 11 learners."

The following comments were made in response to this, via the chat:
Facilitator: *"You need to more specific in the subject you want to examine this in. How do you know already that they cannot read or write?"*

P 11: *"Perhaps you can evaluate the competencies in reading and writing Maths."*

This chat session shows that once students were familiar with each other, they felt comfortable to post their topics, even with fair criticism. It also suggested that an interactive learning environment was established because all students were involved, including the facilitator. According to Bonk (2001) the tool or system used in a learning environment must unite people for some common interest, e.g. sharing, problem solving or collaborating. Consequently this was established because students were able to relate to each other in a common interest, i.e. proposal writing. This led to a greater sense of community between learners thereby supporting the principles of a learner-centred approach (Weber & Lieberman, 2000). It further gave rise to the theory of social constructivism because the facilitator was not the only one contributing to educational development, but the students too (Mouyabi, 2010). Kear (2007) suggests that facilitators should first familiarise themselves with the technical aspects and procedures for chatting online. She further asserts that the objectives of the chat session should be stated in advance, and facilitators should ensure students understand the expectations and goals of the chat. From the observations and individual interview it was clear to the researcher that the

facilitator is qualified and familiar with the simple process of appropriating a chat room as a teaching and learning resource. He involved students' first-hand in chat sessions by allowing them to lead discussions once they were familiar with how to use them. The first two lectures helped them to learn how to use the chat tool. The facilitator wanted students to be responsible for their learning and therefore led them to post their topics and receive feedback from their peers.

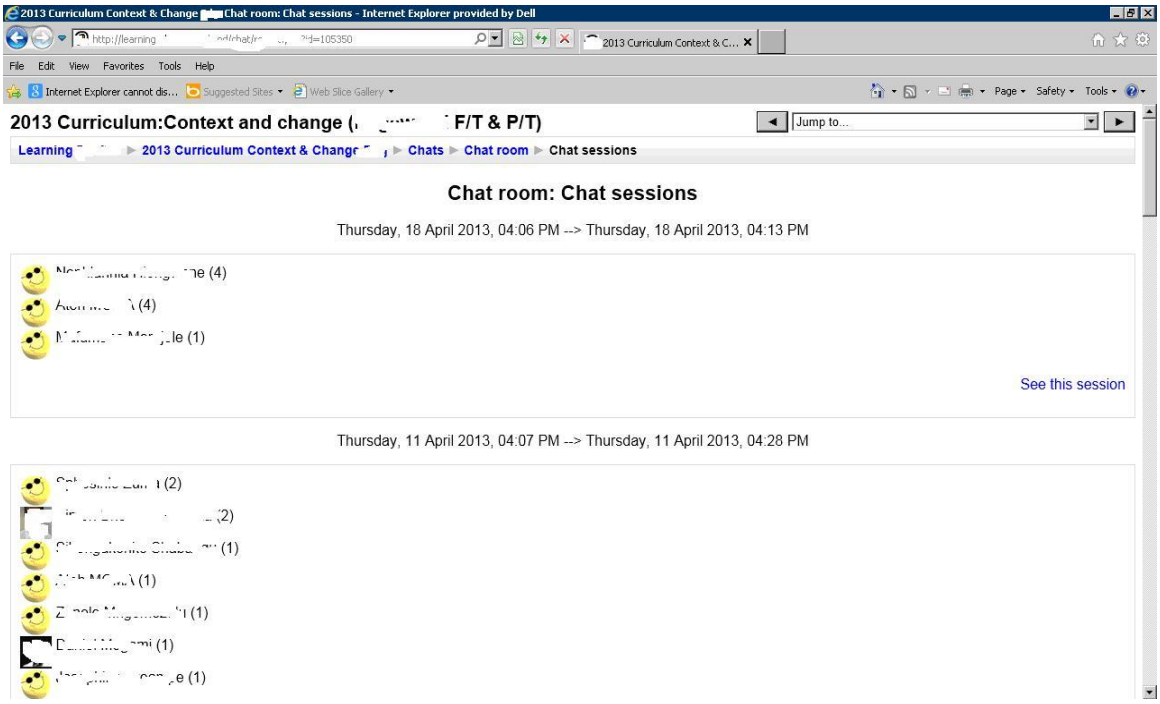

Figure 5.3 Chat room (Retrieved from learning site)

The above image (figure 5.3) reveals that students are able to access this web page by downloading previous chats that they may need. After each chat session the facilitator can upload the transcripts of the dialogue on to a class web page that publicly allows students to view the chat. This leads students to become active participants in creating the course content (Weber & Lieberman, 2000). All face-to-face students participated in the chat room, whilst the distant learning students did not appear online at the time of chat sessions but were able to view it by downloading it later. It appeared that once students knew how to use the chat tool, first for social conversations and then for learning purposes (posting of research topics), they were not as enthusiastic as they were in their initial encounters.

The literature cautions that immense volumes of messages via the chat can lead to confusion and waste of time (Kear, 2007). Not all chat sessions may evolve as planned, however the facilitator needs to be apt in handling a situation as such.

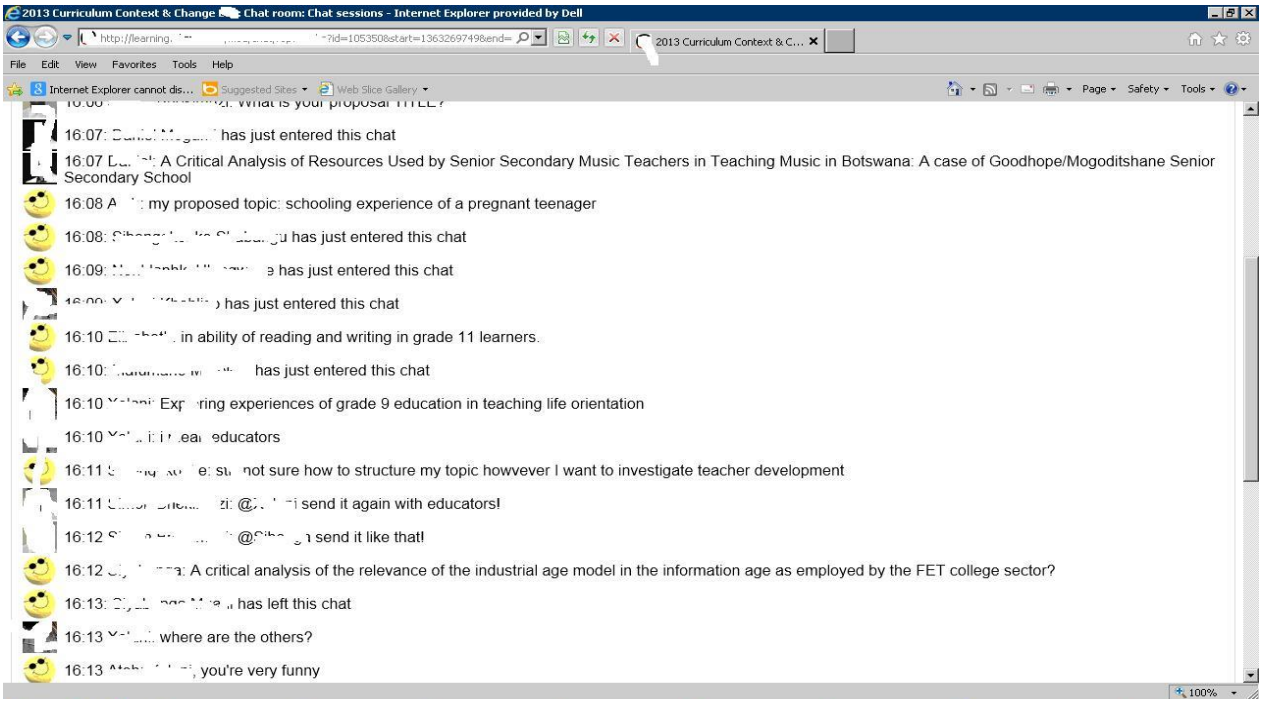

Figure 5.4: Chat room discussion (Retrieved from the learning site)

According to the chat session that took place during this specific lecture (Figure 5.4), P3, P7 and P9 posted their proposal topics to receive feedback from their peers, however many students did not enter the chat and therefore did not contribute to their topic. The facilitator questioned where they were but upon observation at this point students were more interested in summing up their proposal topics to post. In waiting for them, the others left the chat room. This meant that students were ill-prepared for the lecture (Paparazzi & Williams, 2000). As a result the chat room discussion was unfruitful because students did not comment on their peers work, and simultaneously could not receive feedback for their own work. This suggests that preparation before engaging in a chat room as a learning resource is important. Despite the facilitator stating the objective of the chat the week before, students did not take it as seriously.

From the data representation about chat room as a learning resource, it can be ascertained that if used appropriately by all students it can be a valuable tool. It also means that not every chat session may go as planned. At first students were enthusiastic about the chat room as a learning platform, as can be seen by the experience of P4, because it was something new to most students and they were learning how to critique curriculum topics for research. However this slowly changed as students became more consumed in completing their assessment tasks. Based on the responses from figure 5.4 students did not only lose out on important feedback from their peers and the facilitator, but did not get to apply the skill of critiquing which is critical in research. The chat tool can be a useful tool in initiating discussions for a short time period but not powerful enough to motivate students with issues of education. The researcher observed that students were not as committed to the chat because they were simultaneously exploring other

websites and their personal proposal developments. Therefore the chat room was a good tool for introducing students to each other by creating a learning community.

5.3.3.2.3 Discussion Forum

An online delivery of learning instils greater flexibility for students to study almost anywhere and at any time (Dixson, Kuhlhorst & Reiff, 2006). It is within this rationale that online discussion forums are fast becoming an integral component of online learning, in which facilitators and students have familiarised themselves with (Mazuro & Rao, 2011). The online discussion forum refers to an asynchronous discussion space that allows the facilitator and students to exchange ideas through written text messages that can be viewed by all participants at all times (Nault, 2008). Discussions are thought of as threaded. This means that the relationship between a message and the responses posted in the forum is graphically represented on a computer screen via the internet in a manner that gives a purposeful structure to a discussion or activity (O' Leary, 2004).

As students converse with one another a deeper learning experience can be achieved. Since interaction assumes a major part of the process in discussion forum, students gain a broader cognitive understanding and improves their interpersonal and social skills; congruent with Vygotsky's theory of social development. Online discussion creates opportunities for students to develop self-directed learning; therefore facilitators need to build students' confidence in this area (Macdonald, 2006). Consequently facilitators have to prepare students for discussion forum, by perhaps using emails as an initial means of communication because the two online tools are similar in nature. A limitation of utilising the discussion forum is that sometimes it may take time to upload assignments on to the program; therefore students had to use their emails in emergency cases to submit their work in time for peer critique and assessment.

All students involved in this study had their personal email accounts, and another one administered by the university upon registration. The online learning tool of discussion forum was fairly new to most students, except P1 because part of his undergraduate degree comprised the function of this tool. It was not difficult to use this new learning tool because its use is similar to that of an email. Therefore students frequently and optimally used this online resource. Discussion forum can be lead by the facilitator, whereby each session/week a topic is posted via the virtual learning environment (VLE) to facilitate classroom discussion and posting of students' assessment and activities. As such the facilitator posted a topic in advance of each week so that students could adequately prepare in the discussion forum.

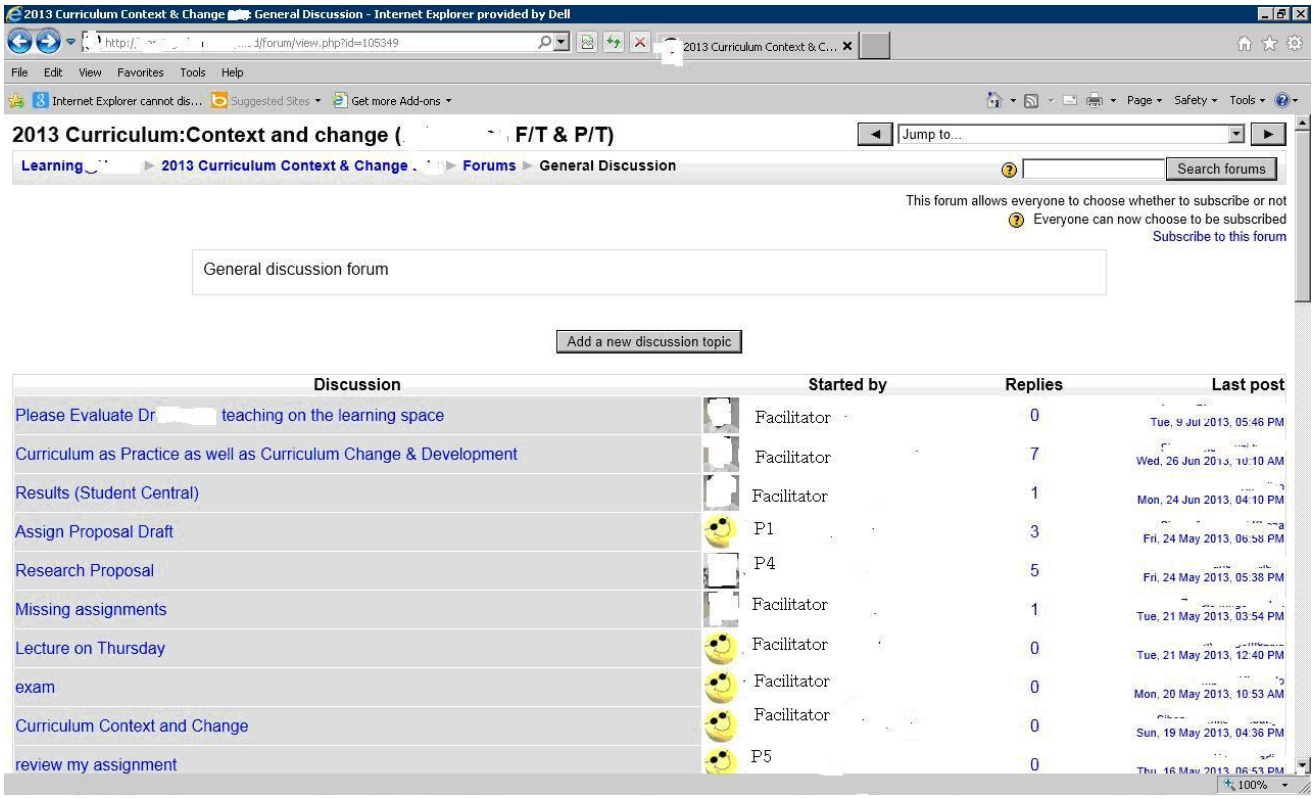

Figure 5.5: Discussion Forum (Retrieved from Learning Space)

The above figure 5.5 represents a discussion forum on the learning space of the Curriculum Context and Change module. The students and facilitator were responsible for posting topics to lead an informative discussion and to receive feedback. In the first two lectures of the module, discussion forum was hardly used, as students mainly engaged with the online chat room and search engines. Thereafter the use of discussion forum was consistent. At this point of the course, students were in the process of finalising their research proposals, and the module was drawing to a close as the semester was approaching its end. As a result they were required to post their assignments via discussion forum so that other students and the facilitator could review it and provide feedback. The feedback was considered critical as this would help each student make possible revisions to improve their overall assessment. The names of the actual participants have been replaced by the researcher and their profile photographs have been digitally erased to conform to the ethical standards of this study. This discussion forum shows that the facilitator guided the teaching and learning by posting topics. “Evaluation of learning space” required students to assess the method of teaching and learning, and whether the uses of online tools in the module were effective or not. The facilitator also posted “missing assignments” because there were certain students who had not submitted their assignments as yet. The “replies” indicated zero for submitted assignments. While some posts show a zero, this changed after the extraction of the image from the learning space. P5 had submitted his assignment, but at that point received no feedback. P1 assigned his draft proposal and received three responses, whilst P4 sent in his final research proposal and received five responses.

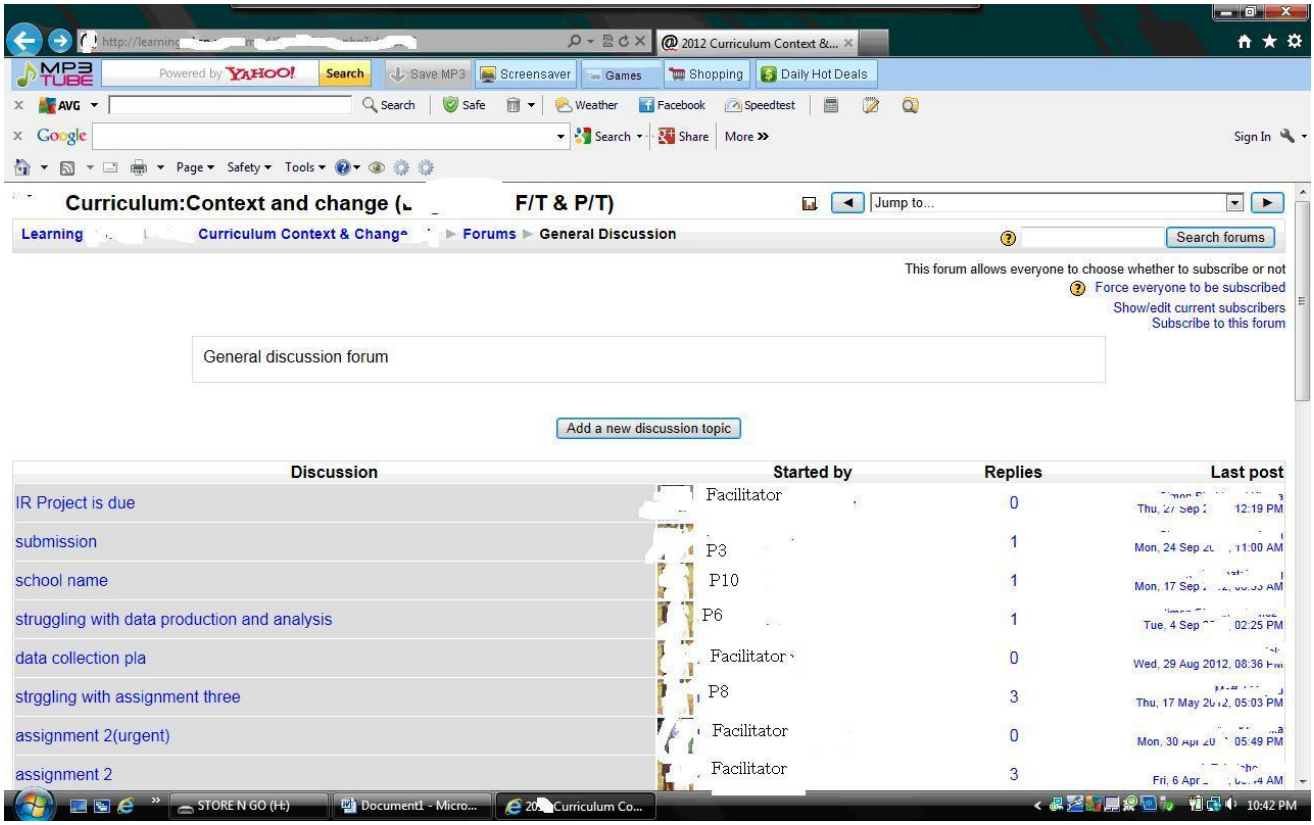

Figure 5.6: Discussion Forum (Retrieved from learning space)

Figure 5.6 also represents another discussion forum extracted from the learning space. Here it can be viewed that students posted their assignments because they required help from their peers and the facilitator. For example P6 was struggling with data production and analysis, and posted a request so that others can assist. The facilitator also used this online tool to remind students that certain assessment tasks were due, to ensure that they achieve the learning outcomes of the module.

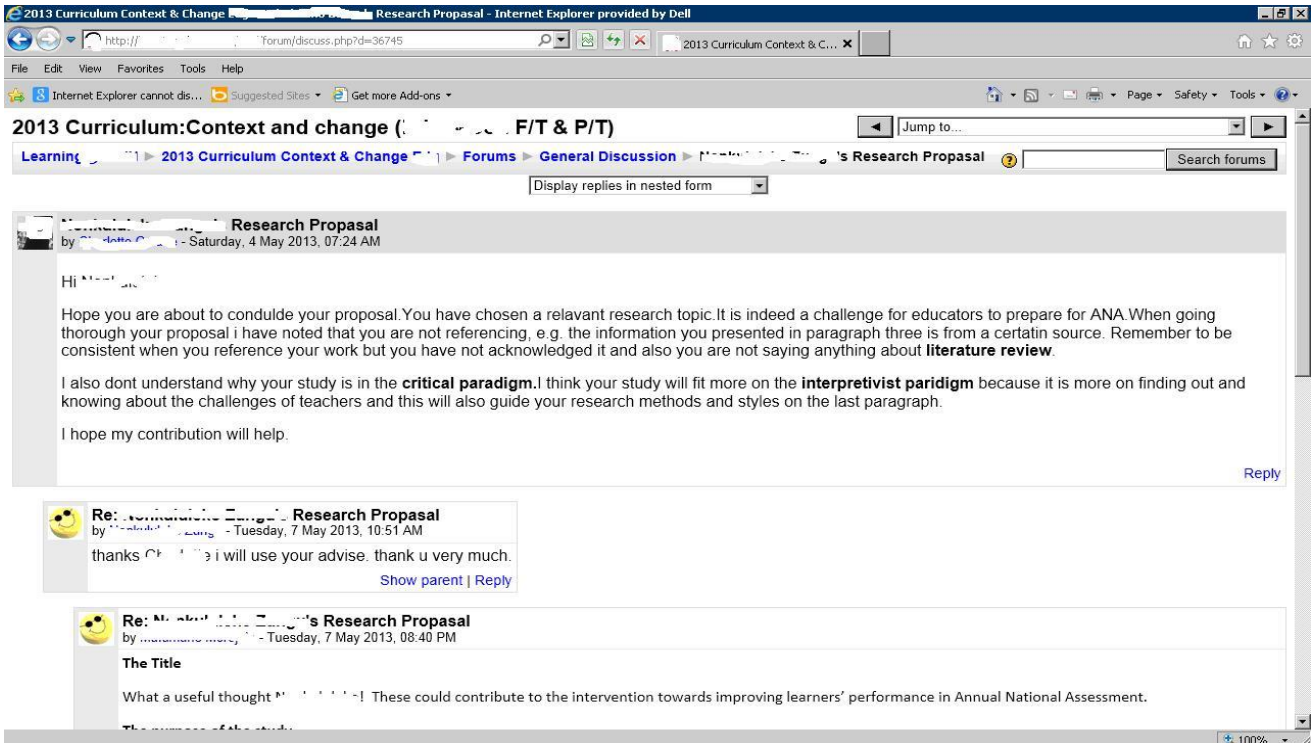

Figure 5.7: Discussion forum representing feedback from peer response (Retreived from learning space).

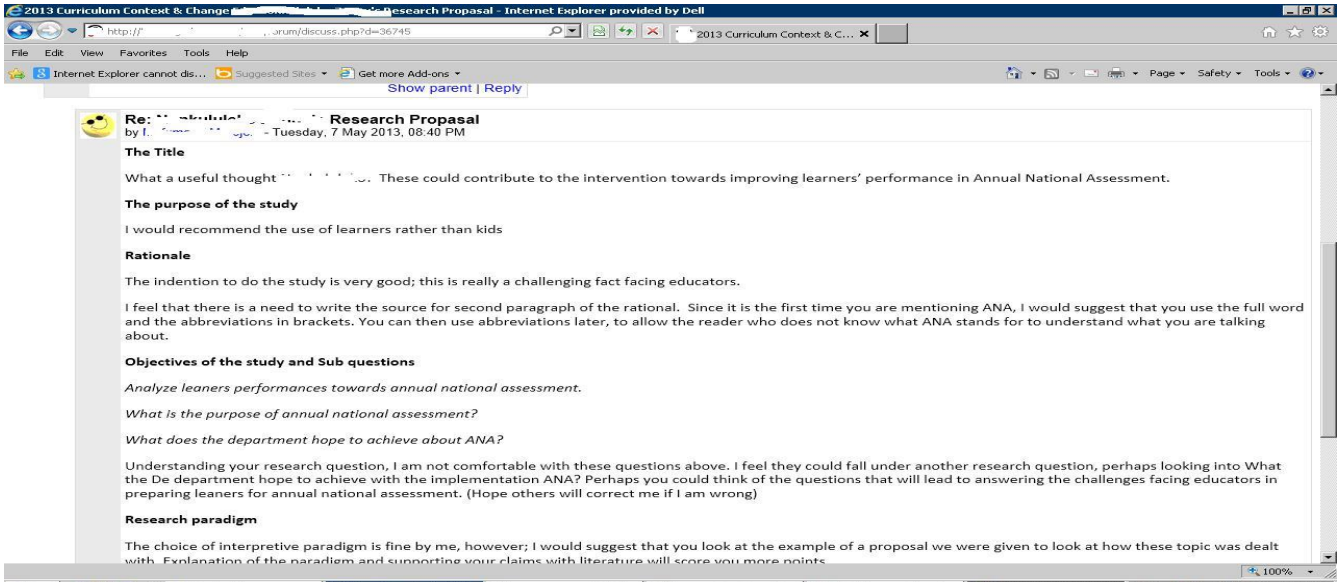

Figure 5.8: Discussion forum representing feedback from peer response (Retreived from learning space).

Figures 5.7 and 5.8 reveal the document posted (research proposal assignment) by one of the students via the discussion forum. The student needed assistance from peers and the facilitator to ascertain whether they were on the right track in constructing their research proposal. The facilitator responded in figure 5.7 by commending the topic chosen, but advised the student to reconsider and rectify the paradigm chosen. In figure 5.8 a fellow student responded by

reviewing the grammar, and suggests that the student revisit the research questions. This student also debated about the research paradigm, which was in contrast with the facilitator's view.

The findings suggest that discussion forum became an important online learning tool to facilitate teaching and learning in the module. Both, the facilitator and students, were responsible for their roles in using this tool. The facilitator ensured that each week he would post at least one topic or more to prepare students in advance for the following weeks' discussion. Students were tasked with submitting their queries and assessment tasks via the discussion forum. The facilitator taught students how to critique each other's assignments, in the endeavour of making revisions to enhance their performance and achieve the learning outcomes of the module. This experience edified the notion of collaborative learning and supported the precepts of what it means to study in the 21st century that envisions students as independent, critical thinking learners (Nault, 2008). In this way students were able to refine their thinking, construct new ideas from prior knowledge and achieve a deeper understanding (Markel, 2001).

Mazuro and Rao (2011) propose that a tangible way in achieving a thorough understanding is through online collaborative learning coinciding with discussion forum use. Through document analysis and observation the researcher perceived that students enjoyed debating with each other online, and this led to the production of useful insight to their understanding and assessment tasks of the module. Students were able to use the criticism, advice and support of their peers and the facilitator to improve their research proposals, and thereof improve their overall assessments. An online delivery of learning instils greater flexibility for students to study almost anywhere and at any time (Dixson, Kuhlhorst & Reiff, 2006). It is within this rationale that online discussion forums are fast becoming an integral component of online learning. It can be viewed from the screen prints (Figures 5.5, 5.6, 5.7, 5.8) that students and the facilitator logged on to the learning space discussion forum at different times, ranging from early in the morning till late at night. This meant that students had access to computer/laptop and internet connectivity, and were sending and receiving information at all times.

The researcher probed the facilitator as to why this online tool was used for the module, and he stated the following:

Facilitator: *"They were developing each other through peer assessment. In other words they were supporting each other to develop their knowledge and skills in writing and assessment (formative and summative assessment)."*

The researcher was also interested in determining whether this tool could lead students in 'stealing' other students' ideas or whether this could result in copying each other's work, but the facilitator responded in the following way:

Facilitator: *"It is difficult to steal each other's ideas because Turnitin will pick it up when their final project is submitted and the facilitator will also pick it up during the discussion process because he has to be apart of it for the 'assessment for learning' (students' development) and assessment as learning (facilitator's development)."*

The online discussion was seen as a powerful resource for exchanging documents and support for peer learning and collaboration. It was also effective because students could not plagiarise due to the SW program of Turnitin and the facilitator's skill of evaluating assessments. However uploading documents were sometimes time consuming, and consequently students used their emails because this was a quicker method.

5.3.3.2.4 Turnitin

Turnitin is a soft-ware program developed for plagiarism prevention at higher education, used by millions of students (iParadigms, 2010). The program motivates ethical use of others' work by correct citation of written material. Turnitin further provides a complete web-based service to manage the process of submission and tracking papers electronically. The purpose of which is to give students feedback efficiently.

The Turnitin program is implemented to any course when the instructor sets up a class and an assignment in the Turnitin service. Students and instructors then send in papers to Turnitin through file upload or cut and paste. The service then compares the paper's text submitted to an enormous database containing over 12 billion digital content, 110 million papers in the student paper archive, and over 80 000 academic, professional and commercial journals and publications (iParadigms, 2010). On its own Turnitin does not detect plagiarism, instead it matches text to help instructors determine if plagiarism has occurred.

Figure 5.9: Turnitin Program (Retrieved from the learning space)

Figure 5.9 represents the Turnitin program located in the Curriculum Context and Change module learning space. Students were required to submit their assignments by clicking on the space provided, and could also retrieve their work once Turnitin was complete checking against plagiarism. They were also required to submit hard copies of their assignments to the facilitator for assessment purposes. The facilitator indicated that this was a great programme as it helped determine if students had committed plagiarism or copied other students' work. Students' were introduced to the program at the beginning of the module because it was visible on their learning space. However they did not immediately use it because at that point they were in the process of assimilating with other online tools like the chat room and search engine. Students commented the following about the Turnitin program:

P2: *"I think the program is good because during my study towards a degree we were never introduced to this online facility because it never existed then. We made lots of errors and were not aware of the extent to which we committed plagiarism. I mean if we had this program then we would have not lost marks and could have done better."*

P7: *"It helped me a lot because I probably would have done very poorly in my assessment. it showed me all the areas where I needed to reference and so on…."*

The facilitator also indicated that the Turnitin tool is designed both for students and instructors. It helps students to correct plagiarism errors and assists facilitators in their marking tasks. The comments stated by participants of the study show that the Turnitin is a very useful online tool to

help students identify areas of plagiarism that need to be corrected. When students commit plagiarism they reduce the value of their work and therefore will lose marks, which lowers their overall assessment. So Turnitin has significant potential in assisting students to learn from their plagiarism mistakes and improve their overall success of the assessment task. Moreover when students do well in their assessments it leads to better self confidence and learning opportunities to achieve more. Turnitin is also valuable to instructors because it helps their marking of students' assessment, which can reduce time. It also alerts to plagiarism whereas the facilitator might not have been able to discover.

5.3.3.2.5 Search Engines

The 21st century has been characterised as the era for immense knowledge acquisition (Tutkun, 2011). The internet affords the opportunity through which great volumes of information can be sourced and technology has made this process more accessible than before (Nguwuchukwu, 2012). The term 'search engine' is synonymous with the internet which is a fast and effective way of getting information that one may need from the web (Nguwuchukwu, 2012). In this regard search engines are the predominant area where people research information and make informed decisions. Therefore, the search engine is a widely used online tool that tertiary institutions have recognised and have incorporated into their online learning programs to improve accessibility to learning materials (Nguwuchukwu, 2012).

The Curriculum Context and Change module learning space contained the search engines Soople and Google preloaded for students to have easy access in retrieving information. However students were not limited to this, as they could use other search engines or learning resources to gain information to assist them.

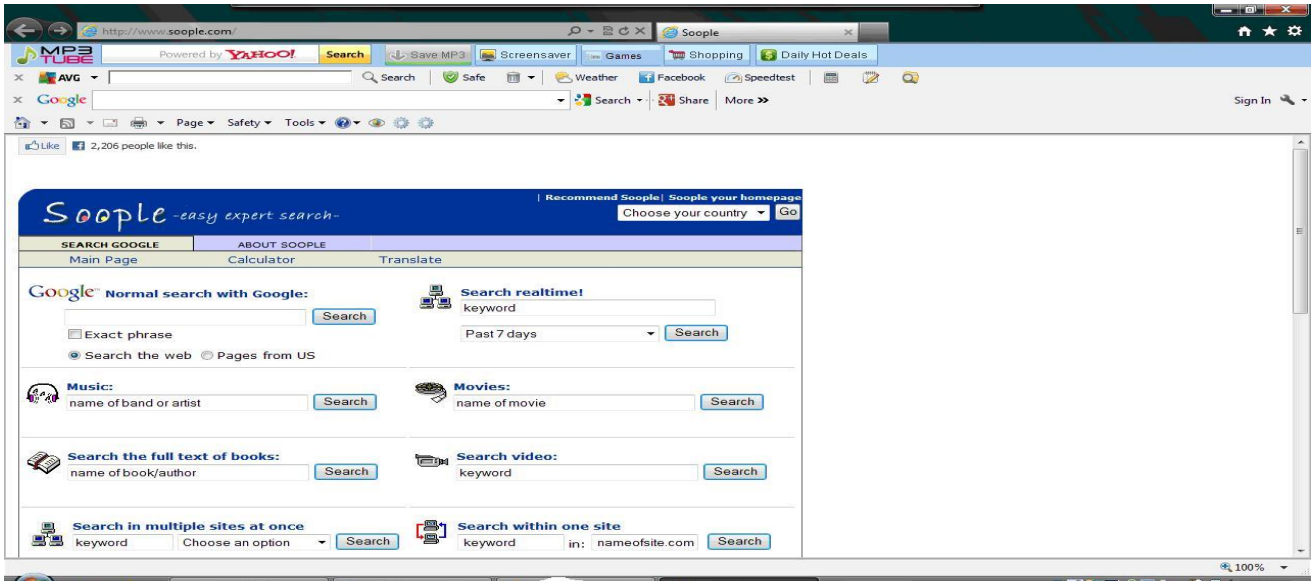

Figure 5.10: Soople Search Engine (Retrieved from learning space)

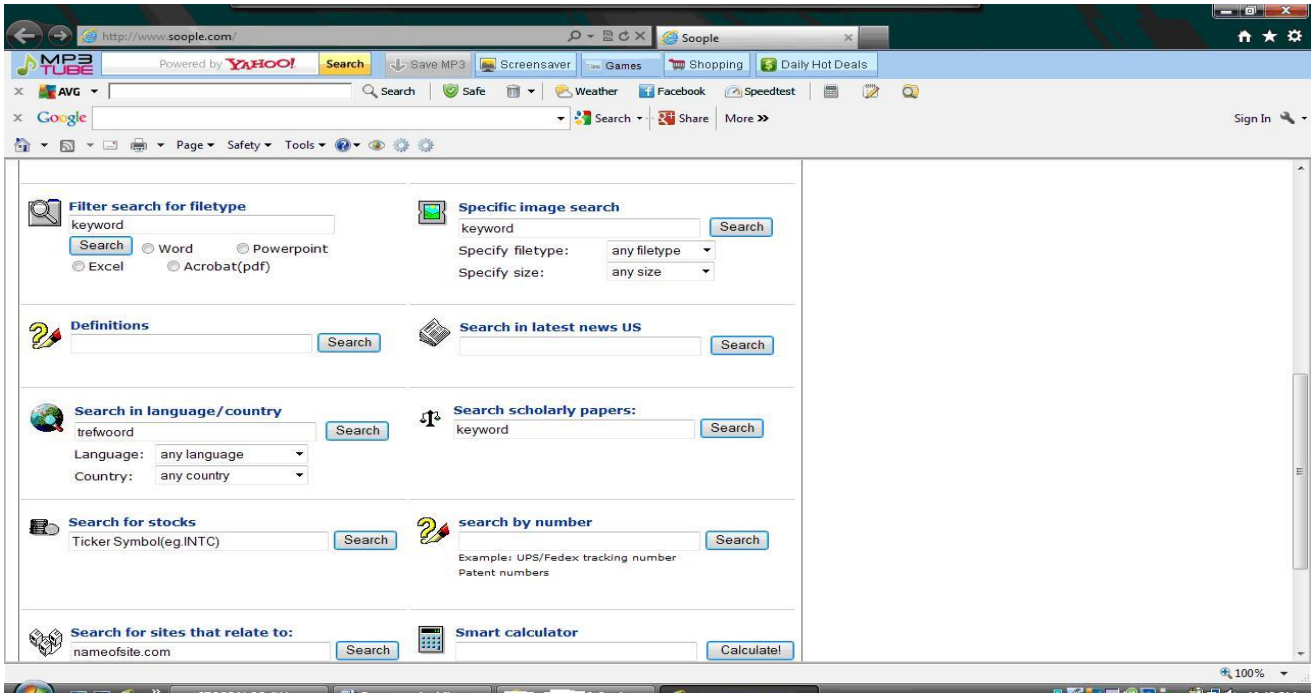

Figure 5.11: Soople Search Engine (continued) (Retrieved from learning space)

Figures 5.10 and 5.11 represent the image of the Soople search engine. Soople offers the retrieval of information in many disciplines, fields of study and sources that include peer-reviewed papers, theses, books, abstracts and articles from professional societies, universities, academic publishers, preprint repositories and other scholarly organisations. It further allows students to be more specific in their search, so that accessing the information they require will be easily available. Search engines attempt to 'understand' a user's question by suggesting similar questions that other people have asked for which the system has a correct answer (Brewer, 2005). Students can also predefine their search to a time period, e.g. Past 7 days. Students can type in key words or topics in the block relevant to their search and the search engine reveals the specific or most closely related articles.

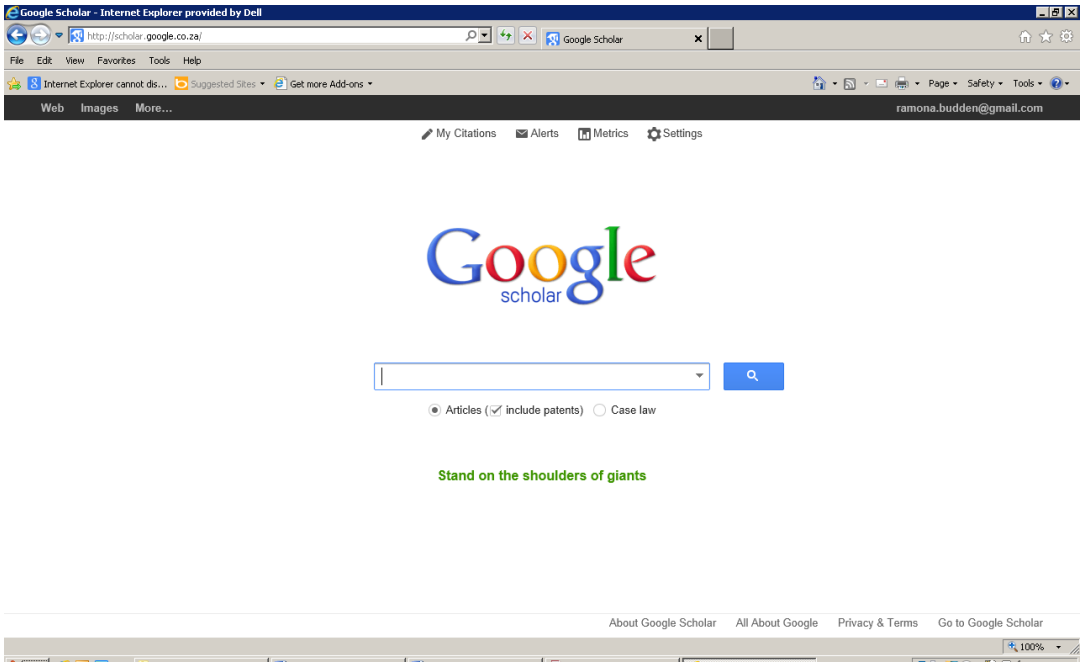

Figure 5.12: Google Scholar Search Engine (Retrieved from learning space)

Figure 5.12 represents the popular Google Scholar search engine. Google Scholar offers the retrieval of information in many disciplines, fields of study and sources that include peer-reviewed papers, theses, books, abstracts and articles from professional societies, universities, academic publishers, preprint repositories and other scholarly organisations (Chakravarty & Randhawa, 2006). Articles are ranked according to weighing the full text of each article, author and publication which the article appears, and whether it has been cited by other scholarly literature. Users of Google Scholar are able to restrict their search to PDF files, PowerPoint files, Word documents or Excel documents by adding a file type to the search query (Spencer, 2006).

From observation and learning space analysis all thirty-five students used Soople and Google Scholar search engines. The following responses were elicited through interviews with participants:

P1: *"I used the search engines all the time to find information for my assignments. It was quick and easy. I did not have to go to the library because all of what I needed I found through the search engines. I also found the Erik search engine a little helpful, but some articles were restricted to a subscription so therefore I could not use those ones."*

P3: *"I used the search engines a lot, but I also borrowed books from the library when I needed more in depth knowledge. Certain books that I wanted could not be found online that is why I had to use the library."*

P5: *"Search engines were convenient for me to use, because I could access them from my workplace and at home. In fact I hardly accessed them from campus, when I could use them in the convenience of my home."*

P8: *"It's so easy to use Google or any search engine, besides the ones you have to pay for. I mean…why go through the trouble of reading thick books. Normally when I conduct I search via the web, the most relevant articles related to my search appear first, so this makes it easier for me."*

P2: *"It was not difficult to use because during my undergraduate degree all students were introduced to using search engines, although I did not have the opportunity to use them when I was in school, maybe because they did not exist then!"*

The interview responses suggest that the search engine is a very valuable tool in sourcing and retrieving information. The nature of this online tool indicates that it is possible to access it from anywhere and at any time, provided there are internet connectivity and a computer. This has created better accessibility and opportunities for students to enhance their learning (Nguwuchukwu, 2012). All thirty-five students used search engines to inform their knowledge, understanding and assessment of curriculum issues. They sourced articles pertaining to curriculum development; change; strategies of teaching and learning; the politics of curriculum change in South Africa; and educator competency. Students engaged with the readings to help them with their assessment tasks and inform their perspective as educator. From the five students who were involved in the individual semi-structured interview, four indicated that they only used Google Scholar and Soople to source information, only P3 used both the search engine and library. This did not mean that they did not find the library useful, only that they lacked the time to actually visit and sift through the books.

According to Chakravarty and Randhawa (2006) search engines help researchers sift out academic documents pertinent to their field of study using their searching capabilities, user friendliness, simplicity, search velocity and broad coverage. As such, search engines contain published articles by scholars, universities and academics in the field. This indicates that the information is credible. There have been concerns about the trustworthiness and credibility of articles available on the web (Henzinger, Motwani & Silverstein, 2002). However, search engines have the capacity to allow its users to specify their search in detail, leading them to reliable sources that have been instituted by experts in the field. The facilitator also revealed that he made frequent use of the search engine and admitted that he experienced no problems in using it, or received any complaints from students in using the ones available on the learning space.

Students conveyed that it was quick and easy to use the search engine, because they were introduced to it during their undergraduate degree. Further students indicated that search via the web was not difficult because normally the most relevant articles related to your search appeared first. This means that the search engine is an important online tool that can be used for teaching and learning, and was a good resource for the module.

5.3.3.2.4 YouTube Video Resource

There is a general belief that the current cohorts of students entering universities are enthusiasts of web 2.0 because of the impact it has had on social networking (Popescu, 2010). Dalsgaard (2006) affirms that social soft-ware tools can support a social constructivist method to e-learning by giving students personal tools and by interacting with social networks that can allow them to govern their own learning. The current style toward web 2.0 technologies indicates that video production and consumption rates are exponential (Copyright Clearance Centre, 2009). A recent trend for developing technologies is the use of YouTube video-sharing website that has gained importance for in-class and online learning setups (Burke & Snyder, 2008).

According to Liu (2010) YouTube is a convenient learning tool that can be used in a variety of ways. Users are able to upload, view and share video footage on www.YouTube.com and across the internet via other websites, mobile devices, email and blogs. The ability to capture, edit and archive resources are in the capability of millions of people. Experts in the field of education agree that an essential component in promoting learning is when students are able to build content as an element of course requirements (Burke & Snyder, 2008). According to Burke and Snyder (2008) when students are able to create content they encompass a deeper understanding of the learning material. Students further develop insight and skills, and are immersed in online communities through content creation using YouTube.

Upon observation and learning space analysis two YouTube videos were available on the learning space of the Curriculum Context and Change module. These videos relate to how one can conduct research. Students were not limited to these, as they were free to download and access other videos related. The facilitator conveyed that it was important to incorporate this online resource because students are able to visualise content which creates a more interesting experience.

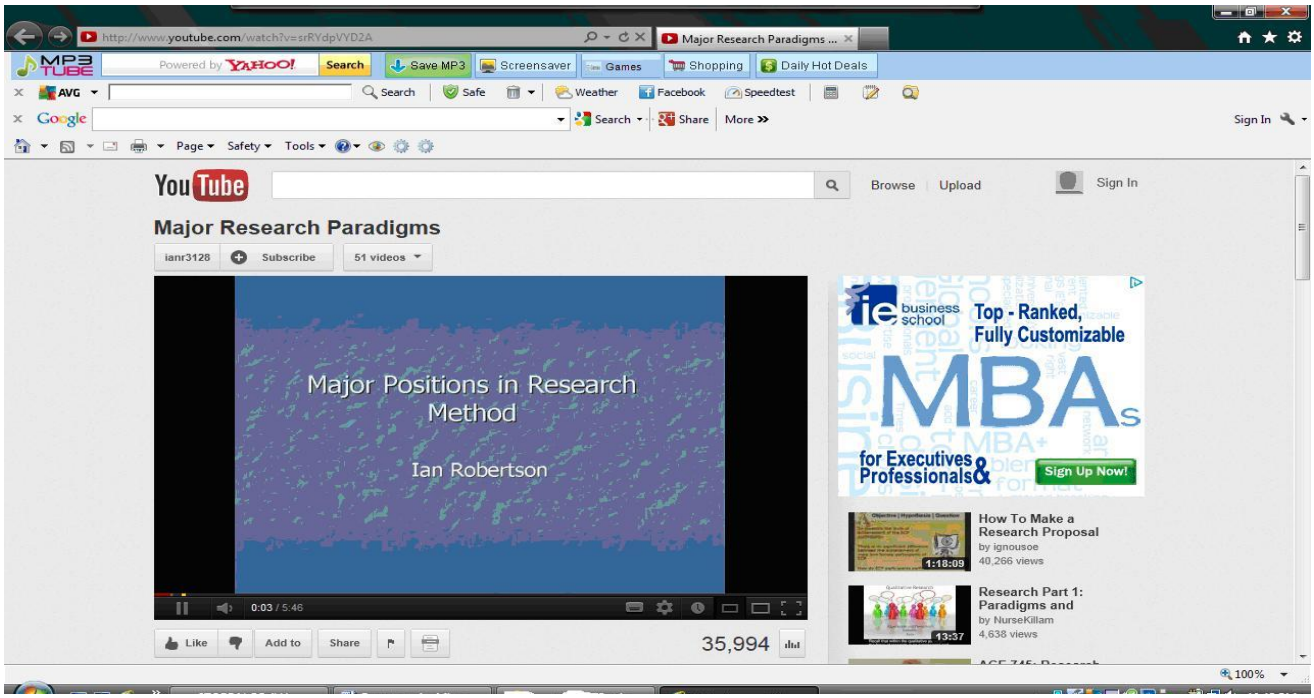

Figure 5.13: YouTube Research Video (Retrieved from learning space)

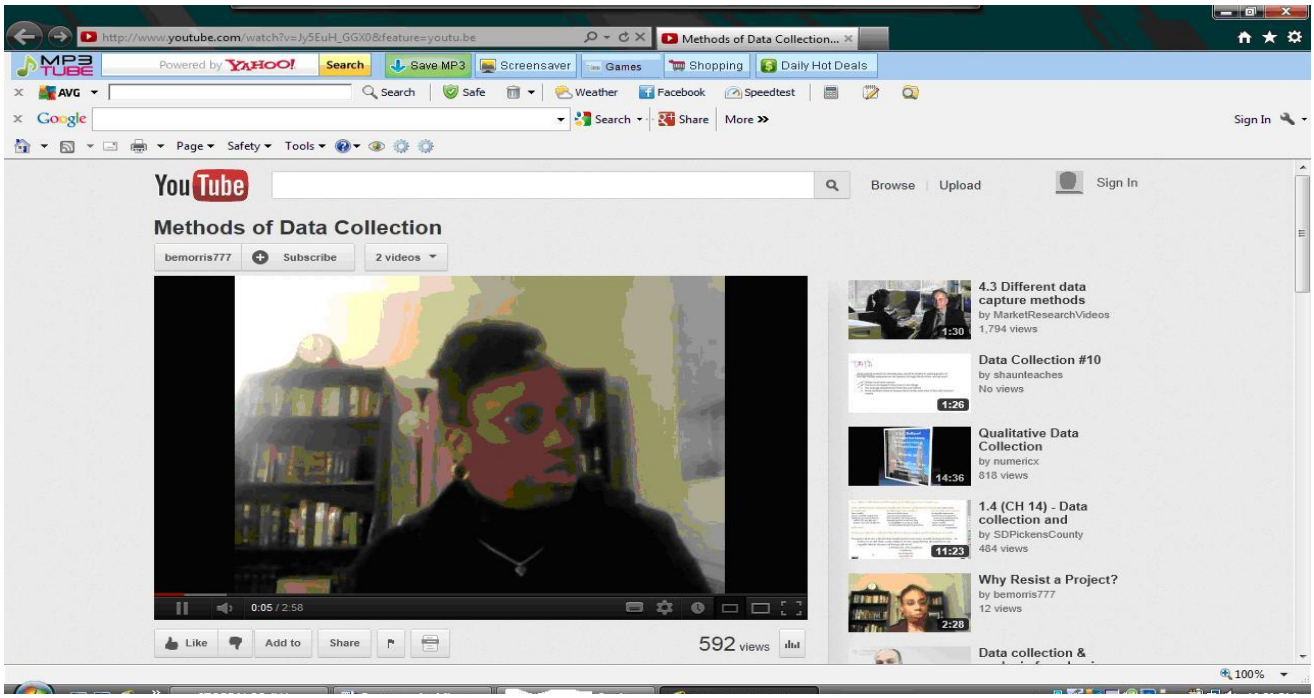

Figure 5.14: YouTube Research Video (Retrieved from learning space)

Figures 5.13 and 5.14 show the research videos that were uploaded on to the learning space from YouTube. The first one explores paradigms in which research must be conducted, e.g. interpretive paradigm. It teaches students about the different paradigms in which research operates. A paradigm is envisioned as a set of basic beliefs that symbolise a worldview that explains for its holder the nature of the world and their place in it, and considers the relationships to that world and its components (Guba & Lincoln, 1994). The second research video explains

how to proceed in conducting research using various methods of data collection. It differentiates between qualitative and quantitative data, and methods such as interviews and questionnaires amidst others.

The facilitator expressed that it was important to incorporate these videos into the teaching and learning resources. It provided an informative visual presentation on how to go about conducting research. Students required this information because they were expected to construct a research proposal as part of their assessment. This was their first time in handling such an assessment task. The purpose was to teach them in correctly conducting and applying research, thus inculcating critical thinkers. The facilitator believed this online tool was significant in providing a different way of learning. Other than reading mass volumes of notes and text, students were able to see and hear the information. Darries (2004) contends that it is important to assimilate with teaching and learning strategies that comprehend the digital era because this is the way forward and students have grown up with these developments. Therefore this e-learning tool invoked an atmosphere for research and teaching visually that led to online dialogue, information exchange and facilitation of learning (Bonk, 2001). Students were able to build on their own understanding of research methods, guided by the video, and this was later affirmed by the facilitator's input. Students were also able to retrieve the videos at any time and place.

Only one student, P1, indicated that he did not access the YouTube videos because he felt they were not relevant or new to him. P1 is well immersed with online technologies compare to the other students, because he has prior knowledge and expertise in this field. However, for the other students the videos were interesting because they had not used this tool for learning before. They mainly accessed YouTube for entertainment use previously. Since many of the students involved in the study are currently educators in schools they agreed in the focus group interview that YouTube is a good resource to draw learners' attention to content in subjects that appeared 'boring', in contrast to traditional methods of teaching.

The literature cautions that video clips can sometimes be of poor quality, and time consuming to search for replaceable or appropriate ones (Lance & Kitchin, 2007). Therefore the facilitator advised that lecturers be mindful and devote the time to allocate credible and relevant videos that leave a good impression on students, in terms of knowledge and quality. Ultimately students of the module were able to draw from the knowledge about research methods disseminated through YouTube, because they were able to better understand and develop their proposals. The facilitator also used this tool to enhance face-to-face discussion and other articles posted on the learning site.

5.3.3.3 IDEOLOGICAL-WARE (IW)

The ideological-ware (IW) of teaching and learning resources includes theories about learning, teaching and learning strategies, and research findings and experiences (Khoza, 2013b). It lies in the domain of TOE because these are resources that one cannot see or touch. IW is the same for e-learning and face-to-face contexts because in both environments these resources cannot be touched.

The researcher identified the following IW resources that were predominantly used to conduct teaching and learning of curriculum issues. It was observed that the facilitator and students used these in both the offline and online context. The facilitator admitted that these were relevant resources to use, and to provide a strong foundation through which students can support their assumptions through research.

5.3.3.3.1 Activity Theory (AT) / Cultural Historical Activity Theory (CHAT)

An activity comprises of the events that unfold and the consequence of such for participants that can qualitatively change them, their goals, reasons for participation, the environment and the activity itself (Kaptelinin, 2005). Human activity is a dynamic process that includes artefacts that pose as technical tools and signs that symbolise psychological tools available in the social context (Yamagata-Lynch, 2010). This process shapes and moulds the individual's consciousness within a changing environment. The activities that take place within this atmosphere indicate an organisation of information about mediated social activities that posit interconnectedness and indistinguishable relationships within the components of an activity system. (Nardi, 1996). Integral to the framework of activity theory is the principle of tool mediation that explains human activity as driven towards an overall goal (object) and mediated by the use of tools (e.g. instruments or devices) (Kirkup & Kirkwood, 2005).

A pivotal aspect guiding CHAT or AT is the premise that all activities, whether inter- or intra-psychological, are social and cultural in nature where *actors* transform an *object* (Leont'ev, 1978). *Objects* are regarded as cultural entities that denote communal social transformation practises and further develop during human activity (Hardman, 2008). The outcomes of any activity occur from *actors* interrogating *objects* by means of *tools* that mediate the interaction (Amory, 2006). Thus the rules mediate the relationships between *actors* and the *community,* whilst the *division of labour* mediates between the *community* and the *object,* and the *object* and the *community* between the *actors* and the *object* (Li & Bratt, 2004). Activities are captured in the image of individual and cooperative actions and the links and networks of such are affiliated with each other by the same overall *object* and motive (Kuutti, 1995).

The facilitator indicated that it was important for students to learn about activity theory because it contributed to their understanding of the module. Activity theory was used to describe their position in the activity system as subjects, directed towards an overall goal (outcomes of the module) i.e. learning about curriculum issues and becoming critical thinkers in this aspect. They were then introduced to tools, which were supplemented by both online and offline resources. It was relevant for them to ascertain why they were using online tools mainly, and the impact it will have on their skills, and different methodologies of learning in the 21st century, particularly the integration of ICT. The component of community helped them to see the key role played by all involved in their learning, such as the facilitator, peers, and Curriculum Studies faculty. In this sense they were supported throughout their learning. In exploring the unique, yet interdependent, parts of the activity system, students were able to make sense of what they were learning, how they were learning and why they were learning. Although it was important for them to achieve the outcomes, it also impacted their current roles as educators, in bringing positive transformation to the strategies they use to enhance teaching and learning in their classrooms because one of their assessments required that they engage with a task pertaining to their area of specialisation/subject they teach. Activity theory was further elaborated as a theoretical foundation that students could use to conduct their research proposals.

P6: *"At first I did not understand how activity theory worked, but then the lecturer introduced us to readings via the online learning space, and then began to explain these to us using diagrams. Once I realised what it means I used it as a framework for my assessment."*

P11: *"I used activity theory because I saw how another, previous student had used it in our proposal example, and our topics were similar, so therefore I could understand it better*."

Through interviews and document analysis the researcher perceived that indeed students used activity theory as a base for supporting their research. This also assisted them in investigating circumspectly in their field of research, because they had a good idea of what to look for when they analysed the components of the activity system in relation to the subjects they taught in their particular schools.

5.3.3.3.2 Spider Web Curriculum

Van den Akker *et al* (2009) suggest that any curriculum as a plan for teaching and learning must be spearheaded by the principles of the curriculum spider web. Due to the inconsistencies and problems encountered with successful implementation of curricula, it is important to create a balance between the various components that drive a curriculum. Ten components have been

identified to address the issues of student learning, that can have positive implications for curriculum planning for current rectifications and future developments.

Rationale or Vision	Why are they teaching/learning?
Aims & Objectives	Toward which goals are they teaching/learning?
Content	What are they teaching/learning?
Learning activities	How are they teaching/learning?
Teacher role	How is the teacher facilitating teaching/learning?
Materials & Resources	With what are they teaching/learning?
Grouping	With whom are they teaching/learning?
Location	Where are they teaching/learning?
Time	When are they teaching/learning?
Assessment	How to measure how far teaching/learning has progressed

Table 5.2: Ten Components of the Curriculum Spider Web (Adapted from Van den Akker et al, 2013; p. 39)

The rationale (mission of the plan) acts as the central point and the nine other components are linked, creating a consistency between each other. Every component is as strong as its weakest link. The purpose is to improve the curriculum with the qualities of consistency, balance and sustainability.

The spider web is critical in providing a thorough interrogation of a curriculum. The facilitator used this theory to address previous curriculums and the problems experienced with implementation then. This supported the learning outcomes of the module that highlighted the need to learn about claims and assumptions of Outcomes-Based Education and the previous National Curriculum Statement. Furthermore, this was used to approach the principles of the newly introduced Curriculum and Assessment Policy Statement (CAPS) in South Africa. The ten components shed light on the possible challenges and benefits this new curriculum has to offer. Students were also able to use this framework to support their research and assessment tasks. It further increased their knowledge about the Curriculum Context and Change module, and the purpose of which to be constructive in their learning about curriculum policy, context and change in South Africa. In addition, it gave perspective to the cultural and academic heritage essential for learning to be able to compete on an international scale. Since technologies are perpetually developing, it became fundamental to understand the theory of the spider web because it is the emerging technologies that will influence curriculum design in this modern era. This means it was integral for students to learn about the issues of the spider web curriculum, to accommodate the

needs of a tech-savvy generation of learners as educators, and to empower themselves about curriculum developments in South Africa.

5.3.3.3.3 Entertainment Education Theory (EET)

The current generation of students are able to combine teaching and learning resources for both education and entertainment. Singhal and Rogers (1999) argue that entertainment-education creates an awareness to educate and entertain, thereby increasing the students' knowledge about an educational activity. This influences their behaviour about the activity and consequently makes it more appealing as an undertaking. Moyer-Guse (2008) suggests that EET has important elements that should be valued for the EET message to be articulated. These include 'identification', 'wishful identification', 'parasocial interaction' (PSI) or liking, 'similarity' and 'transportation'.

Identification is when a student takes another person's position in order to learn from the person's perspective. *Wishful identification* occurs when people try to follow others without changing their own identity. *Parasocial interaction* (PSI) or liking refers to a situation where students identify powerful people in their field of study and socialise with them. They even follow them of Facebook. *Similarity* is when a student believes he/she is similar to someone in their own field of study. Transportation takes place when students are consumed into their entertainment or learning, so much so that they will accept anything from the experts in their field of study, without contesting it.

The EET was relevant for students to comprehend because it is a reality of what takes place in a technologically enhanced teaching and learning environment. The researcher observed that 'identification' unfolded when students were simultaneously working on Facebook and discussion forum during the lecture. While discussion forum was pertinent to the lecture seminar, Facebook was not at the time. However, this did not prevent students from engaging with Facebook, whilst learning. This suggests that while online resources are mainly designed for teaching and learning, they also contain an element of entertainment in which they can converse with their friends (Khoza, 2012).

The researcher also observed that the element of 'PSI' was instrumental in the online chat room. The students appeared to enjoy social interaction with the facilitator and their peers, more than actually learning anything about curriculum issues. They exchanged greetings, enquired about each other's day, and appealed to the facilitator to send them off early from the lecture. Therefore it can be presumed that the online chat tool was good in exchange of social dialogue and interaction, but not strong enough in exploring curriculum issues.

One of the assessment tasks allocated for the module required students to prepare a class presentation, using PowerPoint that would articulate a reading that is relevant to his/her independent research topic. The PowerPoint presentation of each student had to first be uploaded on the online discussion forum. This activity encountered 'wishful identification' because the images presented on the PowerPoint slides reflected the characters or ideas about themselves and their area of research.

The facilitator contended that it was necessary for students to understand these concepts related to EET because it is viable as a theoretical framework for their research. It also influenced the ways they thought about the subjects they taught, and how to make improvements thereof. In addition, this theory helped the researcher in ascertaining the response of students to the learning activities according to the elements of EET. In this way he could perceive whether the outcomes of the module were being achieved. This means EET was an important IW resource for both the students and the facilitator.

5.3.3.3.4 APA 6th Reference Style

The American Psychological Association (APA) style has been widely embraced in the social sciences, education, business and nursing field of study (Schaeffer, 2008). It is a manual offering sound guidance for writing with concision. It educates its users on how to reference and cite other scholars' work. Therefore citations in the text give brief information, such as the name of the author and date of publication, to lead the reader to the source of information provided in the reference list at the end of the paper (Schaeffer, 2008).

The university through which the Curriculum Context and Change module operates takes plagiarism in a very serious light. It is considered an offense if a student or lecturer does not practise ethical measures of conducting research. Therefore, the APA system of referencing and citation has been adopted to guide students and lecturers into ethical conduct of making correct references when using other people's work. Since the commencement of the very first lecture, the facilitator advised students to use the APA 6th style of referencing to support their assessments. As such, all students used this method. Upon document analysis of students' submitted tasks, through hardcopies and via the discussion forum, students had appropriately applied this referencing technique. However, there were slight inconsistencies when referencing from the web but the facilitator guided them in correcting it. Students were apt in making sure that their referencing and in-text citations were correct because it could have an effect on their overall assessment of the task.

This means that the APA 6th style of referencing was relevant in guiding students in the correct procedure of citation and referencing. It further prompted students to be thorough in their use of this method because it could impact on their assessment marks of the task. If students did not properly reference they could lose marks. So this was a good tool in motivating them to do better and practise ethical ways of using other people's work.

5.3.4 SUMMARY OF RESOURCES USED IN CURRICULUM CONTEXT AND CHANGE

Name of Resource	Number used for Teaching and Learning	Number used for Social Entertainment	Type Resource
Computers/Laptops	35 All participants	None	HW
Whiteboard	22 (Face-to-face)	None	HW
Library	12 (Face-to-Face)	None	HW
Online Library	29	None	SW
Chat Room	35	27	SW
Discussion Forum	35	None	SW
Search engines	35	None	SW
Google Scholar	35	None	SW
Soople	35	None	SW
YouTube	34	3	SW
Turnitin	35	None	SW
Learning Theories	35	None	IW
APA 6th Style	35	None	IW

Table 5.3 HW, SW and IW resources used in the module

Thus far important analysis and interpretation has been provided. However the researcher perceived it relevant to contribute further analysis of the findings. The module implemented a LMS to accommodate the pressing needs of a tech-savvy generation geared for learning in these ways. The university, as such, has encouraged the integration of ICT into teaching and learning methodologies because this is the way forward in today's modern means of operation, both in the business world and in education. The findings suggest that HW, SW and IW resources were powerful tools used to facilitate teaching and learning of curriculum issues. These resources could not be used independently, but in association with one another, to promote a WBTL environment. The facilitator was aware of the principles of learning (HW, SW, and IW) in order to promote TOE, rather than TIE. Amory (2010) posits that learning is not about technology (TIE) but about ideology (TOE) behind the implementation of emerging technologies. In this sense students were able to collaboratively use all three resources to sustain their development and understanding of the module, thereby articulating TOE. However, not all tools were used in the

same way. The chat tool was designed to lead students into meaningful discussions about curriculum, but this was overshadowed by social and entertainment conversations that deviated from the assigned activity.

Prensky (2001) distinguished between digital natives and digital immigrants based on their experience and use of technology in learning. However, this assumption cannot be compatible with the findings generated in this study. Even though some students were first time users of online resources for learning, they were not ignorant nor did they take long in learning to use the tools because they were easy to engage with, and they did use the tools previously for social entertainment, so they could not be termed as digital immigrants. Whilst interacting with online tools for socialising, they were also developing social knowledge and skills in order to use TIE. This is important for promoting presentation skills within students (Watts & Lioyd, 2000). Jones and Shao (2011) believe that students do not require advanced online tools for learning. Further they were using the tools in consultation with learning theories (IW) through the guidance of the facilitator, and not learning from the online resources alone. The IW resources enlightened students on their functional position is the system of teaching and learning (Activity Theory and Spider web). As a result they saw themselves as independent thinkers and learners. Consequently they were able to take charge of their own learning by being involved in module through the online learning space. Through document analysis and observation the researcher ascertained that students visited the learning site at all different times and odd hours beyond the lecture times. They commented and supported their peers' assignments by being critical thinkers, and accessed online videos and resources at their own time and space. This suggests that they contributed to their society with their activities, and independent learning promotes real-world relevance that can be applied in the classroom, since most of them were already practising educators (Lebow & Wager, 1994).

Drawing from the above analysis it can be argued that these students may be classified as Digital Awareness Users (DAU) because their facilitator constantly built e-learning/learning signals through learning theories. Therefore the DAU were encouraged by powerful IW resources, with combined HW and SW to achieve the intended learning outcomes of the module. All students submitted their assignments through discussion forum and Turnitin, with hard-copies given to the facilitator. This suggested that HW, SW and IW resources were strong in supporting students' learning and assessment. It further revealed that they were helpful in assisting students achieve the learning outcomes of the module by critically reflecting on curriculum issues, which might not have been attained if they did not have the relevant resources through which to learn.

5.3.4 THEME FOUR: OUTCOMES / AIMS AND OBJECTIVES

International perspectives in education reveal a paradigm shift from the orthodox teacher-centred approach to a more inclusive student-centred method (Kennedy, Hyland & Ryan, 2006). This approach, fuelled by an outcomes-based strategy, advocates what a student should be able to achieve as a consequence of a learning activity or at the end of a learning period. Therefore a learning outcome represents statements of what is expected that the student will be able to do as a result of the learning activity (Jenkins & Unwin, 2001). According to Moon (2002) facilitators use learning outcomes to achieve a module's aims and objectives. These represent the facilitator's intentions and symbolise the teacher-centred approach. Harden (2002) posits that aims and objectives may not be needed but are still important in determining the facilitator's main duties in guiding the module and serving content. Learning outcomes are generated from Bloom's cognitive domains of learning such as knowledge, comprehension, application, analysis, synthesis and evaluation (Kennedy, Hyland & Ryan, 2006). Each of these levels in Bloom's hierarchy spell out the action verbs that need to be combined with the object of the verb phrases that provide a context for producing relevant learning outcomes. In this sense Adam (2006) contends that modules must have observable and measurable learning outcomes that are drawn from Bloom's taxonomy so that consistency, delivery, transparency, credibility and worthwhile information available to students can be sustained. This confirms that all course outlines for modules should contain the learning outcomes to provide guidance for students.

Kennedy, Hyland and Ryan (2006) argue that it is important to maintain a relationship between teaching methods, assessment and learning outcomes because this is what manifests a transparent learning experience. Khoza (2013a) cautions that facilitators need to be aware not to use learning outcomes that are not observable or measurable because they may not encourage learning. In support of this Toohey (1999) suggests that effective learning takes place when student course evaluations reveal what is expected of students by clear assessment techniques and criteria. By this rationale the Curriculum Context and Change module encompasses a course guideline available on the online learning space and a hard copy issued to students upon their first lecture. The course guideline clearly articulated the following learning outcomes represented in figure 5.15.

STATEMENT OF SPECIFIC LEARNING OUTCOMES FOR THE MODULE
• Explain and evaluate the nature of the curriculum within its historical and social context. • Distinguish between aims, objectives, outcomes and assessment, • Analyse the main determinants of curriculum and curriculum change. • Reflect critically on major issues in curriculum policy and practice in South Africa. • Discuss foundations for further studies in the field of curriculum by Designing a research proposal, • Identify, critique and engage in Curriculum change and context debates as they emerge in society, schools and classrooms • Apply and evaluate relevant Online curriculum design theories, • Use online resources that are relevant to the module.

Figure 5.15: Learning Outcomes of Curriculum Context and Change (Adapted from Online Learning Space).

The module contained eight specific learning outcomes that learners were expected to achieve at the end of the module. There has been debate around the issue of learning outcomes being given at the beginning of the module because it may restrict them from searching deeper into the learning opportunities (Khoza, 2010). However the facilitator suggested that it is integral for students to be aware of the learning outcomes with commencement of the module because students know what is expected of them, and can therefore perform accordingly. The learning outcomes further represent the intended outcomes of the module. This means the outcomes were specified in the curriculum plan for the module (Van den Akker *et al*, 2009). Further these outcomes also lie within the cognitive domain of Bloom's taxonomy because they begin with words such as *define*, *analyse*, *explain*, *distinguish*, *discuss* and *apply* (Kennedy, Hyland & Ryan, 2006). When questioned as to whether the learning outcomes were achieved by students, the facilitator had this to say:

Facilitator: *"They achieved them (learning outcomes) through the given tasks. The intended outcomes were all built into the tasks, so by completing the tasks they achieved all the intended outcomes."*

This suggests that the facilitator used the learning outcomes to evaluate students' performance in terms of understanding the content. During each lecture the facilitator administered the content by first explaining the potential outcomes to be achieved. Significantly, the facilitator was continuously aware of the learning outcomes and was therefore spearheading them into the lectures. This was done in accordance with the aims and objectives of the module. This indicates then that there was a good balance between the content, aims/objectives and learning outcomes. The researcher observed that students first learned the content and were then evaluated

according to the assessment tasks allocated. This suggests the relationship between these components were important to the learning process. Khoza (2013a) regards this alignment as pivotal in promoting a good learning signal.

The researcher explored further into the reality of students' achievement of learning outcomes. It was discovered through document analysis that students truly were able to analyse, reflect, and explain curriculum policy, change and practise in South Africa and other countries. They were able to critique pertinent changes that were currently happening in South Africa like the Curriculum and Assessment Policy Statement (CAPS), and the extent to which they perceived this to be a good learning framework. Their PowerPoint presentations revealed an in depth demonstration of analysis of other researchers in the field of curriculum, and how their perspectives influenced the students' choice of research. All students submitted their assessment tasks and passed the module successfully. This affirms that they achieved the intended learning outcomes of the module because they understood the requirements in advance when they were first issued with the course outline. It further postulates that it is important for students to be aware of the learning outcomes early because this influences the extent to which they are able to achieve them.

The facilitator used face-to-face and online design theories (HW, SW and IW) to support the content being taught. Various online tools were used to teach students about theoretical frameworks and scholarly articles about research methodology. Consequently students were able to apply this knowledge in constructing their research proposals, and illicit an investigation which analysed the subjects they were currently teaching. Simultaneously, they were in the process of achieving the learning outcomes of the module. This suggests that there was a dynamic equilibrium between teaching strategies, assessment and learning outcomes. Kennedy, Hyland and Ryan (2006) concur that the assessment tasks should reflect the learning outcomes because students believe the assessment is the curriculum.

Importantly this theme has expressed that learning outcomes are achievable if they are clearly stated in support of criteria and assessment when used with HW, SW and IW resources to facilitate teaching and learning. Further when facilitators articulate the learning outcomes prior to the learning activity, then students are aware of what is expected of them and are likely to offer a better performance of the task. This supports the ideology behind a student-centred approach in the current ethos of teaching and learning. In summation, the findings that have emerged show that various components such as the teaching strategies/theories, content and assessment tasks are required to make the whole learning process successful, which is indicated by the learning outcomes achieved. As a result this supports the premise of the theoretical framework of activity

theory underlying this study which advocates that an activity system involves a reciprocal process (Kain & Wardle, 2008). As such the components are dependent and interdependent upon one another to achieve the desired outcomes of the learning activity.

5.3.5 THEME FIVE: RULES

Interactions are influenced by the *rules* that regulate actions within an activity system (Li and Bratt, 2004). The component of rules in an activity system is crucial to mediation. Rules are explicit and implicit norms that stimulate actions and interactions within an activity system (Engeström, 1993). Barab, Barnett, Yamagata-Lynch, Squire and Keating (2002) imply formal rules as systematic, general or expected; informal to mean idiosyncratic adaptation; and technical as mandated and written. Kain and Wardle (2008) concur that rules symbolise a mutual agreement about how an activity will materialise in an objective direction. Therefore it is important to consider the component of rules in a learning activity since this is what drives students to achieve the learning outcomes envisaged.

Given this rationale supporting the role of rules in an activity system, the Curriculum Context and Change module comprised of some rules that students had to embrace in order to achieve the learning outcomes of the module. These are presented below.

5.3.5.1 Assessment

Assessment is commonly described through formative assessment and summative assessment (Kennedy, Hyland & Ryan, 2006). Formative assessment is referred to as assessment 'for' learning when students are assessed for collection and learning of relevant information. Instructors usually use the activities that take place during the learning process to provide feedback to students in guiding their development, and also modifying teaching strategies (Khoza, 2013b). Throughout the module students were perpetually engaged with receiving information using various means. The facilitator ensured that appropriate resources were used to enhance effective learning. Students were able to use the many online tools to access the prescribed reading material of the module and other scholarly articles, via search engines, to develop their understanding and competence of curriculum issues. This prepared them for the formative assessment aspect where they were expected to support each other by giving meaningful critique to each others work. In this way they were not only receiving information but giving information too. One of the major formative assessment tasks included submission of assignments via discussion forum. Here each student was required to submit their research proposal for critique by their peers in the class. Each student had to critique at least two pieces of work. This would help identify areas that needed improvement to increase their overall value of the assessment. Although guided by the facilitator, this process invoked a student-oriented

approach, where students could learn from each other and with each other. The peer assessment also helped the facilitator to grow, suggesting 'assessment as learning'.

Summative assessment is a summation of student learning usually conducted at the end of a learning period (Kennedy, Hyland & Ryan, 2006). This reflects how the student has performed as a result of their understanding and development of the learning field through their final piece of work. The course examiner determines this performance by evaluating their submissions and providing an overall mark. The summative assessment of the module was twofold; comprising of a class presentation and written assignments. The class presentation represented 20% of the final mark. Students were required to provide a PowerPoint presentation of a selected reading that would be relevant to his/her independent research topic. The written assignments included two tasks. The first one was a development of the research proposal and the second represented an analysis of the student's subject/learning area using either activity theory or curricular spider web as a framework for their exploration.

Students had to meet both the formative and summative assessment requirements for successful attainment of the learning outcomes that would contribute to their overall performance of the module. Students had to also submit their assignments on the due date prescribed. If they needed an extension, students had to approach the facilitator by giving in a written request prior to the stipulated due date.

5.3.5.2 Engagement with Prescribed Readings

It was compulsory for students to engage with the prescribed readings as a foundation for understanding curriculum policy, practise and change. Some of the prescribed readings included:

- "Curriculum in Development" by Van den Akker *et al* (2009)
- "Writing and using learning outcomes" by Kennedy, Hyland and Ryan (2006)
- "Theory and practise of Online" by Anderson and Elloumi (2004)
- "The politics of curriculum review and revision in South Africa in regional context" by Chisholm (2005)
- "Who promotes web-based teaching and learning in higher education?" by Khoza (2011)

The above is only a sample representation of some of the prescribed readings that were accessible online via the learning space and search engines. Students also received hard copies of certain articles. They were expected to engage with them in order to not only learn about curriculum issues, but also about the principles of conducting research.

5.3.5.3 Attendance

Attendance was compulsory for all 14 contact sessions for face-to-face students. A register was taken at each lecture to ensure attendance was maintained. Although this was clearly stated in the course outline and articulated by the facilitator during lectures, the researcher observed that certain students were absent more than once. On such a condition they were expected to at least appear online for the lecture, but this did not happen. However, they managed to compensate for lost time by following up with their peers and visiting the online learning space to follow up on activities they may have missed out on.

5.3.5.4 Implications for Attainment of Goals

The component of rules in the activity system (Curriculum Context and Change module) was very important in helping students achieve the learning outcomes. The assessment tasks were articulately provided through the online learning space and hard copy course outline that each student had. This provided awareness to them of what each assessment required and the value it held. As a result every student passed the module successfully. Further attendance ensured that most students attended almost all lectures. Absenteeism was not a grave issue because even if they were, they could attend the module online. The prescription of certain reading material was relevant in laying a foundation for understanding and recognition of curriculum policy, change and practise in South Africa and other countries. By conversing with them this led students to dig deeper by exploring other scholarly related articles to broaden their knowledge. The findings also affirm the ideology of activity theory because interactions are influenced by the rules that regulate actions within an activity system (Li and Bratt, 2004). The component of rules in an activity system is crucial to mediation. The subject (students and facilitator) are supported by the community (technical staff, university faculty, curriculum department) and is influenced by rules (attendance, assessment, prescribed readings) that direct the activity towards overall goals (learning outcomes) (Thuraisingam *et al,* 2012).

5.3.6 THEME SIX: COMMUNITY

Activity theory rests on how people work together, using tools to achieve outcomes and this involves a sense of *community* (Kain & Wardle, 2008). According to Thuraisingam *et al* (2012), within the community role of the activity system the subjects (people) combine in a unified approach to achieve the object. The subject is an extension of a larger community joined by the work they have in common (Yamagata-Lynch, 2010). The community's interests give purpose to the activity by dividing the workload into specific duties within the reach of objectives (Kain & Wardle, 2008). Joyes (2006) argues that within the community of an activity system a researcher should consider the nature of the learning platform, determine the learners' expectations in relation to the community, and figure how their roles can be supported. Thuraisingam *et al* (2012)

posit that even though people who are part of the activity system may be physically separated, their relationship and roles change if they converse in a common effort. In effect, they form a community and hence support the activity system.

Drawing from these assumptions the researcher has identified the community as a support base for the Curriculum Context and Change module, which ultimately affects students' achievement of learning outcomes. Therefore the community members include technicians, peer students, external examiners, conference presenters and scholars in the field of curriculum, the academic cluster of Curriculum Studies, and the researcher. The technical staff will include personnel appointed by the university, as well as the Lan Manager and an expert for the AV component aspect. The technicians are part of the community because if there are any technical problems (i.e. with the computers, LMS, data projector or anything technically inclined) their services will ensure that the devices are attended to and fixed to solve the problems. This will ensure that the resources are in a good enough condition to be used so that a smooth operation of the teaching and learning process can be maintained. However, the researcher observed during a lecture that there was a technical problem with the data projector because it suddenly stopped displaying images from the computer to the white screen. As a result for a few minutes the facilitator was engaged with trying to solve the problem, whilst the students were interacting online. Further there was no Lan manager in their assigned office perhaps due to it being an evening lecture, but fortunately since the facilitator is experienced in the field of technologies, the problem was resolved. It is important to consider this experience because it has implications on a few things. It suggests firstly, that facilitators need to be aware of situations as such, because should a technical challenge arise during a lecture, they have to be prepared to handle it, in order not to waste time or limit the learning process (Leitch, 2011; Kim & Bonk, 2006). Secondly, the university faculty should ensure that there is available staff at all times. However, technical staff was available to assist but this would have also taken time to source them. And thirdly, if an online environment is implemented in teaching and learning, students should be appropriately taught how to use the tools, so that if there is a technical difficulty they can still continue learning on their own (provided the challenge does not affect them) as in this circumstance.

Peer students in the community indicated support for learning from other students in the class. This was evident when students submitted their proposals online through the discussion forum and others had to critique their work. This critique helped students rectify errors and improve on other areas of their research that needed attention. The researcher also observed that some students helped others during the early stages of the module when they did not remember how to access the online learning space and the use of online tools. Further when they were preparing their assessment tasks they were conversing with each other online and face-to-face to offer

guidance and assistance. External examiners were influential in the role of community because they mark all the students' projects after the facilitator's marks. The final grading for each student is the average created by the marks given by the facilitator and the external examiners. Conference presenters were instrumental because they held seminars related to curriculum and invited students and other facilitators to be apart of this. This not only influenced the perspectives associated with discipline of Curriculum Studies but also shared knowledge with students who were engaged in research in the same or similar arenas. Students were perpetually immersed with scholarly articles from books, journals and publications, through online sources and hard copy. This developed their understanding and knowledge of curriculum issues and assisted them in conducting research. It further impacted their role of educators in a positive way because one student commented the following:

P5: *"After learning about the changes and actual practise of curriculum from different experts, it has motivated me to change not only my methods of teaching, but the impact it will have on students. Sometimes we teach just to cover content, but really are the students learning anything concrete? I mean are we teaching because of political ideals or the real value of educating?"*

The academic cluster of Curriculum Studies ensure that appropriate content is selected for the module and follows up with the facilitator that this is administered. Students can also seek their assistance if they are unhappy with what they are being taught, assessed or the methods employed. In other words, they also provide a base of support for students and the facilitator. The researcher is part of the community because the work that this undertaken is to acknowledge and improve the module. The researcher's study can shed light on possible areas for improvement and therefore can make plausible recommendations. As this study examines the use of online resources in teaching and learning, this could help similar contexts apply the same pedagogical strategy if they are pleased with the outcomes.

From the findings and analysis it can be established that the role of the community in an activity system is one of support (Thuraisingam *et al*, 2012). Each 'member' has their own ways of providing guidance to students to help them to achieve their goals (learning outcomes). Technical staff control problems that can be experienced with technological devices; scholars gave perspective to learning in an online environment; the external examiner evaluated students' projects using a variety of resources to accommodate their achievement; the academic cluster encouraged the use of an online platform for teaching and learning; peers were a powerful resource in helping each other learn; and the researcher investigated the use of online resources to highlight the possible challenges and benefits of implementing this type of resource. Therefore they were all vital in increasing the learning opportunities of students (Kain & Wardle, 2008). It further recommended that there was some kind of interdependence between members that

contributed to the overall activity. This suggested that they needed each other because without an online learning environment technical staff might not be required; if students' do not successfully complete their projects with fast, reliable online resources, external examiners will not be able to mark, and peers have not much to support; conference seminars will not attract as many students; and the researcher will not have a research task to investigate. Thus the position of community in the teaching and learning context is very important.

5.3.7 THEME SEVEN: DIVISION OF LABOUR

The division of labour explains the distribution of tasks and roles between members of the community and the division of power and status (Murphy & Rodriguez-Manzanares, 2008). Amory (2006) explains that the community is an implicit or explicit organisation instrumental in rearing the transformation process of the objective into an outcome. It is important to comprehend these assumptions and characteristics of what constitutes the division of labour in an activity, so that each member understands and performs their tasks towards the expected outcome (Wang, 2008).

Thuraisingham *et al* (2012) propose that there is an element of *division of labour* within the community, accompanied with responsibilities, tasks and power perpetually being addressed. This suggests that the community members also represent the division of labour, because their roles are not only defined by support to the learning context, but duties and responsibilities to ensure that it is carried out (Amory, 2006). Therefore the researcher has established that although the technical staff, peer students, external examiners, conference presenters, scholars of academic articles, and academic cluster of Curriculum Studies have effectively contributed to students learning of curriculum in terms of support, simultaneously their duties and responsibilities also have had a major impact. The function that each performs has an effect on what, how and why students learn. Each one has a critical position that ensures there is a smooth operation of the teaching and learning environment. For example challenges encountered with the computer or LMS will require the duties of the technicians to determine the problem to be resolved. Without them the resources employed, such as the online tools, will be affected to the extent that they will not be operational. These have been discussed in theme six.

The researcher also included the facilitator and students as part of the division of labour. Kain and Wardle (2008) argue that in higher education labour is divided among the participants. Students assume the task for completing assignments and instructors are responsible for grading assignments. Hardman (2008) condones this view by describing the instructor as one to teach and students are the recipients of learning in an activity system. Consequently the researcher identified the facilitator as one who uses face-to-face and online resources to engage teaching

strategies to administer content. The students are the recipients of learning by using different resources (search engines, chat room, discussion forum, YouTube, teaching/learning theories/content) to develop their understanding and knowledge of curriculum change, policy and practise.

This suggests that the division of labour was then distributed between the technical staff, peer students, external examiners, conference presenters, scholars of academic articles, academic cluster of Curriculum Studies, the facilitator and students. It is integral to consider how labour is divided in an activity system because this accounts for the influences that shape the activity in a broader context. The findings further indicate that the ideology of human interaction proposed earlier supports activity theory as a framework for describing how people work together (division of labour), using tools (e.g. chat room) to achieve outcomes (learning online) (Nardi, 1996). Therefore, it is vital to consider the role of the division of labour in the activity system in order to produce an effective teaching and learning environment.

5.4 ANALYSIS AND INTERPRETATION OF FINDINGS

The researcher developed the following activity system of the Curriculum Context and Change module in Figure 5.16. The literature review pertaining to the reciprocal process of how an activity system operates and the findings generated from this study helped establish how the use of online resources influenced the achievement of outcomes in the module.

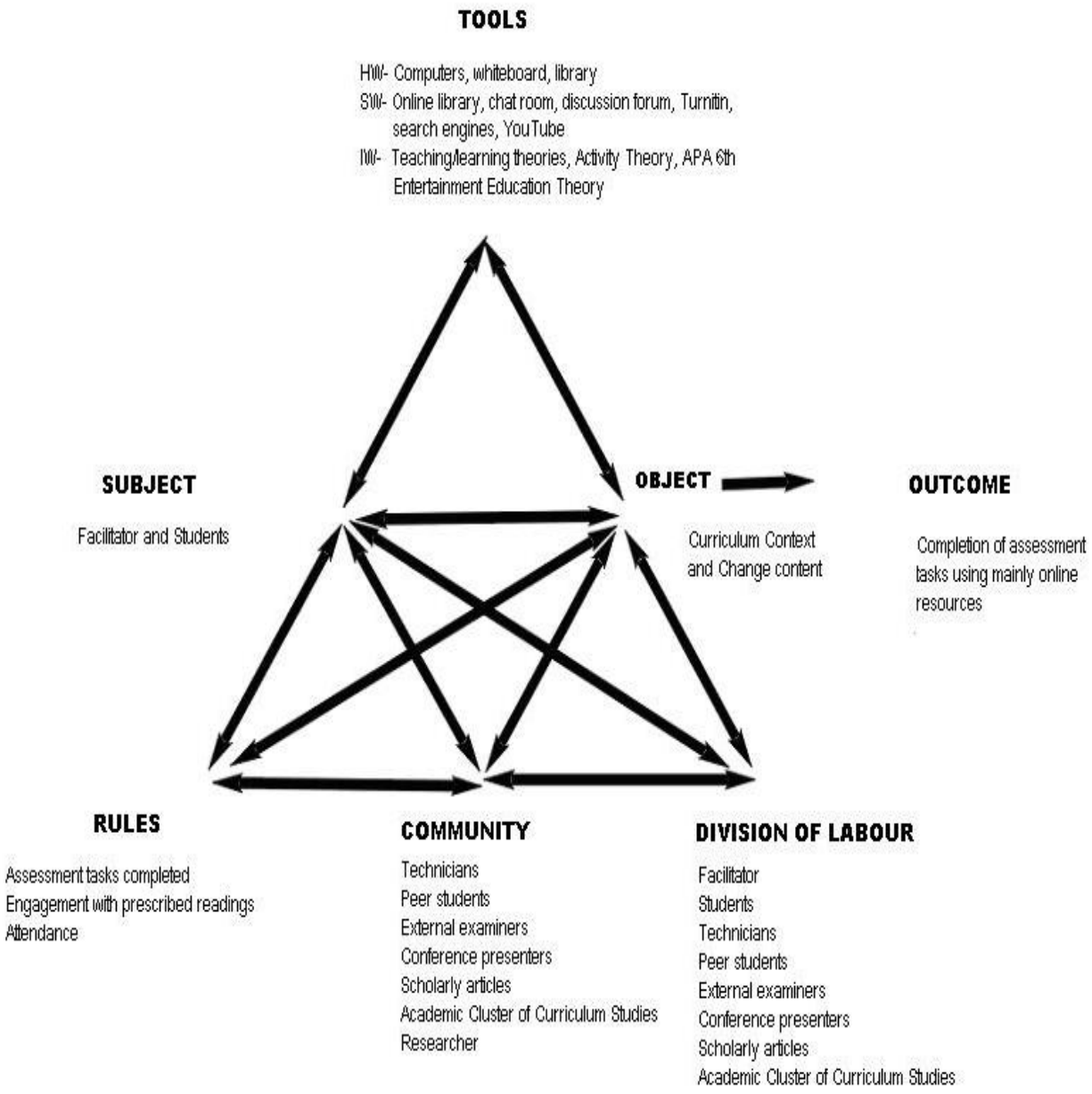

Figure 5.16: Activity System of the Curriculum Context and Change module developed by the researcher

Activity theory has provided the researcher with a lens to determine how motives (what, when and how online tools are being used) shape actions in the context of social rules, expectations and collective action, and how the direction from the motives to objects (curriculum content) and outcomes (completion of assessment using online resources) is mediated by tools (Tsai *et al*, 2010). This is represented in Figure 5.16, the activity system of the Curriculum Context and Change module. This suggests that initially students were using online tools for social interaction (chat room) which developed into tools for learning about the curriculum so that they could complete the assessment tasks designed, with the knowledge they gained from throughout the learning process. Tsai *et al* (2010) affirms this view by explaining that students use online

learning to help each other and to provide social interaction and feedback. As a result the social interaction encourages higher levels of participation in the module activity. This perception is consistent with the findings generated from this study because the facilitator conveyed that he introduced the chat room to inculcate social interaction between students in the first two or three lectures. Students were exchanging greetings and threads of personal information about themselves. In this way they were familiarising themselves with their peers and assimilating with an online tool. This tool was then itself used to introduce other online tools that were to be used for learning.

The rules (assessment, engagement with prescribed readings and attendance) spelt out the guidelines through which the learning activity evolved. The subjects (facilitator and students) were influenced by the rules because this led to achievement of the learning outcomes. The facilitator had to ensure that the content topics set out in the course guideline were covered throughout the module as indicated. Furthermore, the facilitator had to make students aware of the criteria concerning assessment so that they were prepared to undertake the tasks. The attendance register had to be undertaken each lecture to follow up on students who may have been absent more than twice. The students abided by the rules by engaging with the prescribed readings to submit their assessment tasks to successfully pass the module. In addition they adhered to compulsory attendance to ensure that the outcomes of the module were achieved.

The activity system diagram represents several arrows articulating the interaction that takes place between components. It is concerned with how people work together to achieve outcomes as a result of interactions. Through guidance by the facilitator, students developed their own strategies for acquiring help. The discussion forum was the most frequently used tool in which students posted their topics for the research task. Besides the lectures, it was difficult for students to meet face-to-face in order to help each other because almost all the students were involved in the course on a part-time basis as they worked full-time. Also many are parents and therefore have family responsibilities which made it difficult to arrange to meet their peers. Consequently students' preferred to meet with their peers online via discussion forum. Other students critiqued their work so that each could rectify errors and make improvements. This improved the overall assessment of each students work because their peers frequently commented on all aspects of assessment. This activity led students to engage with the online learning space at different times. In fact most students were responding to discussion forum after lecture hours, some late at night and others during the day because they had personal computers with internet connection either at home or in schools. This has an important implication for the findings. It suggests that the use of online resources was very effective in maintaining perpetual interaction between students at all times, despite the lecture being held

once a week. They were getting to know each other through the chat room and therefore felt more comfortable in helping and critiquing draft research proposals via the discussion forum.

According to Kain and Wardle (2008), the activity system involves a reciprocal process through which the subjects(s) use tools to accomplish the objectives and desired outcomes. Through interviews, learning space analysis and observation the researcher ascertained that the facilitator used the online tools to supplement face-to-face teaching. The objective of the facilitator (subject) was to use online tools in conjunction with face-to-face strategy to teach about curriculum policy, change and practise (objective) so that students could gain enough knowledge from this to successfully complete their assessment tasks (outcomes). The facilitator was aware of the principles for learning because an atmosphere for TOE (rather than TIE) was inculcated because HW, SW and IW resources were combined to discuss curriculum concepts and experiences. The focus then was on the content, not on the technology itself. This advocates then that facilitator implemented a more student-centred approach since he was aware of the learning outcomes whilst driving HW, SW and IW resources to enhance learning. The facilitator was careful to use all three types of resources to compensate for different teaching and learning styles, and more especially that learning is about curriculum and not about technology. Again, the students (subject) position in the activity system indicated that they were using online resources (tools) to learn about curriculum (objective) to successfully interrogate their assessment tasks (outcome) to deepen their knowledge and inform their roles as educators.

5.4.1 DIGITAL IMMIGRANTS, DIGITAL NATIVES OR DIGITAL AWARENESS USERS? INFLUENCE OF PERSPECTIVES FROM THE LITERATURE

The literature review presented various competing terms explaining the use of online resources in higher education. Prensky (2001) brought about a controversial argument regarding the type of students universities encounter. Prensky (2001) suggested that some students already knew how to use various technologies from a young age (digital natives) and will therefore assimilate better with online learning platforms at higher education. Conversely other students who did not have the same experiences growing up will be new to the online learning field and can take a longer period of time in immersing with the new technologies, which could be a disadvantage to their progress. However the researcher cannot apply Prensky's (2001) ideology to this study in terms of categorising students. Students were not 'digital immigrants' of learning in an online environment, since they all possess some skills in using online tools like Facebook, YouTube, Twitter and Google for social interaction, and they did not experience serious problems in accommodating to an online style of learning. Neither could students be termed 'digital natives' because it was a first experience for most students in the use of online tools in teaching and learning. Yet the findings suggest what Khoza (2013b) calls 'digital awareness users' (DAU)

because they were consciously aware of the e-learning signals that were constantly pushed forward by the facilitator. The HW, SW and IW resources were used to achieve learning outcomes and this is consistent with the fundamental premise of a DAU which is an important element in the activity system. This was possible because the facilitator built e-learning signals by combining HW, SW and IW throughout the learning process. E-learning signals included the spider web theory, activity theory and entertainment-education theory which was used to articulate curriculum issues within the content. Therefore the DAU's learning was headed by strong IW that highlighted all the relevant e-learning/learning signals supported by HW and SW to achieve the intended learning outcomes. Consequently, TOE was promoted because the foundation for learning was embedded with theories and principles for learning (IW).

The literature revealed some important qualities that an instructor should have in order to successfully operate a WBTL environment (Bonk, 2001). These traits involve pedagogical tools, WBTL guidelines from the tertiary institution, qualification and training in WBTL platforms, advice structures, expert answers and management of peer-student communities using WBTL technologies. The facilitator in the study was qualified and experienced in the field of Educational Technology and was therefore able to manage a WBTL context. He was able to teach students how to use the online tools for learning purposes, from what they knew (social interaction) to something new (learning with online tools). Students were continuously interacting with the learning site at all different times, providing feedback to their peers, and following up on daily posts by the facilitator and other students. This suggested that online learning space was managed well by the facilitator because he encouraged and guided students to engage with each other frequently. The facilitator prompted this response because the site was updated with new articles, reference for assessment tasks, and encouragement for preparing for each weeks lecture. He devoted a considerable amount of time in ensuring that the online learning space was interactive and that students were able to receive useful and timely feedback. When students logged on to the site they were also reminded to prepare for their PowerPoint presentations. The issue of qualified instructors addressed by the literature was further evident during the lecture when the data projector became a challenge. Although there was no visible technician in the computer venue of the lecture, the facilitator was able to quickly resolve the problem. Thereafter the data projector was able to display images from the computer to the white screen. This indicated that it is important for the facilitator to handle such situations which was possible because of his experience and skills. It also saved time in having to wait for a technician to arrive, which could have lost valuable learning. Further, since at this point students were aware of how to use the online tools for learning, they continued to pursue their assignments and critique their peers' work whilst the facilitator attended to the technical problem. Therefore the findings suggest that qualification and training were not only relevant but mandatory for an instructor to possess. It

also highlighted that devotion of time and perpetual monitoring of online learning space are pivotal factors in sustaining interaction and feedback amongst peers, and between the facilitator and students.

5.4.2 IMPLICATIONS FOR IMPROVING PRACTISE AS EDUCATORS

From the focus group interviews and individual interviews that culminated, students expressed that the skills developed from using online resources as means for teaching and learning have transformed their ideas about education and about themselves as educators. All participants indicated that they prefer to use an online platform because it is the way forward in the current nature of education within the global context. However due to insufficient finances, infrastructure and training to operate in such environments, some students were concerned whether this would become a reality in the near future. Students stated that all their schools had a computer room for Information Technology (IT) or Computer Applications Technology (CAT), however integration for ICT into other subjects were difficulty due to lack of sufficient resources. Creating portals to online education leads to teacher development and better acclimation to principles of a student-centred teaching approach (Anderson, 2005). Participants' hope and aspiration as educators incline to use of online resources in teaching and learning in schools in order to prepare their learners for tertiary institutions and the world of work as the way forward in a competitive market place.

5.5 KEY FINDINGS OF THE STUDY

The section below gives a summary of the key findings derived from this study:

- HW, SW and IW resources must be used to support each other to promote TOE, rather than TIE. Learning should be about the IW and not the technology itself.
- Facilitators should be aware of HW, SW, and IW because these create e-learning signals that must be identified to help teaching and learning.
- Online resources support face-to-face teaching and learning, by creating better interaction and ongoing means of communication amongst peers, and between the facilitator and students.
- It is important for facilitators to be qualified and well trained in the field of Educational Technology to manage WBTL environments and to operate an online platform and circumvent/overcome minor technical challenges.
- The chat room is not a very powerful tool in exhibiting teaching and learning. Students predominantly used it for socialising which did contribute to their sense of community but did not in itself enable learning.

- Discussion forum was a very effective tool in exchanging documents and eliciting online communication between peers and the facilitator. This was the most frequently used tool for interaction.
- Students used SW (online resources) more than HW (library, books) because they were quick, easy to use and accessible from home and work places.
- Google, Google Scholar and Soople were the most commonly used search engines.
- The YouTube videos on research were informative but only viewed at least once on the learning space.
- When students were aware of the intended learning outcomes they were able to prepare and plan accordingly, thereby submitting their assessment tasks timeously.
- Turnitin is a very useful tool in helping students identify areas of unintentional plagiarism in their work. This improved their overall assessment marks for the module.
- It was relevant for students to learn about Activity Theory and Spider Web Curriculum (IW) because they did not only use it for their research proposals but understood their position in the activity system, and how their development can influence their practise as educators.
- Observable and measurable learning outcomes are relevant in enhancing students' performance.
- When each 'member' (community) performs their duty (division of labour) in the activity system it leads to the achievement of aims and objectives (learning outcomes).

5.6 CONCLUSION

South Africa has succumbed to the needs of information and communications technologies (ICT) in this progressive information age (Darries, 2004). High recognition and priority has been given to tertiary institutions to educate and train South African citizens to not only take full advantage of ICT resources but to prepare students to compete globally. This study has revealed that the university in which the research has taken place has acclimated to such changes by incorporating an ICT policy regarding teaching and learning. The Curriculum Context and Change module has been selected to examine the nature and extent to which online resources are effective for teaching and learning. A blended learning approach has been adopted by the module using HW and SW resources driven by strong IW resources to facilitate the process of teaching and learning. The findings indicate that HW and SW resources cannot be used in isolation but in collaboration with IW resources to support learning of curriculum policy, practise and change. The use of online resources further postulate that it supports both distance education and face-to-face students because it is quick, easy to use and accessible from almost anywhere and at any time.

The literature contended that instructors are still engulfed in traditional means of educating that do not condone the principles of a learner-centred approach envisioned for the current generation of students. Emphatically, the findings from this study affirm that the facilitator implemented a student-centred strategy of facilitating the module because once students were introduced in how to use the online tools, they were able to take charge of their own learning because they were able to interact, at all times, outside the facilitator's presence and input. This suggests that the use of online resources was a powerful force in the development of interaction between students and their ongoing communication and feedback. Further, the data presented revealed that when the facilitator is qualified and experienced in the field of educational technology, it strongly supports the achievement of learning outcomes by all (facilitator and students) involved in the activity system. Although many students were first-time users in learning in an online environment, it was not difficult to comprehend use of the tools. This posits that operating a WBTL platform is easy and manageable to use, provided that all community members and division of labour represent their respective roles.

The following chapter provides a summation of the entire study. It captures the major features in the study, to include the introductory chapter; the significance of the study; paramount issues from the literature reviewed; the theoretical framework that guided the study; the methodology and research design employed to collect data for this study; major findings and interpretation of findings as well as a summary of themes that emerged from the data. Finally, recommendations will be drawn and conclusions presented.

CHAPTER SIX
CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

The findings presented in the previous chapter postulate that the use of online resources in teaching and learning is pivotal as it strongly support the articulation and values of a student-centred approach. Moreover, ICT integration into policy and practise throughout all higher education institutions in South Africa has been supported by the university in this study to the extent that every instructor applies (even if only to a minimal degree) the use of online resources during their coursework. This was evident, for example, when the university compelled each academic discipline to overcome plagiarism by ensuring that their students submit their assignments through the online Turnitin program. The research undertaken sought to identify and explain the experience of the facilitator and students in using online resources to explore curriculum policy, practise and change. In the infancy stages of the module the facilitator employed a teacher-centred approach to introduce students to online tools and guide them through their learning. However, as the lectures progressed, with students skills and knowledge simultaneously developing, the teaching and learning environment braved a new direction - a learner-centred approach. Students became independent learners because the opportunities were created for them to take charge of their own learning. Furthermore, a high level of interaction culminated between students as they supported one another through peer involvement in assessment tasks via discussion forum. They were engaging with content, assessment and interactive dialogue online at different times and places.

One of the major findings of this study reveals that HW and SW resources cannot be used independently, but that they also have to have strong IW resources as their support. Therefore facilitators have to be careful as to how they implement online resources in the teaching and learning context so that learning is about the theories and principles the module strives to articulate, instead of the technological devices used for learning. This chapter provides a summation of the whole study by highlighting the methodology adopted, the significance of the study, major findings, and implications for future endeavours in the form of recommendations. Significantly, as a consequence of the findings that emerged, the researcher has developed a framework to support the assumptions regarding the use of online resources in the module, known as the online / e-learning framework.

6.2 METHODOLOGY

The study investigated the use of online resources in the teaching and learning of the Curriculum Context and Change module at a higher education institution in Durban. The study was guided

by the following research questions and will be discussed further once a summary of the themes have been presented:

1. What online resources are being used by facilitators and students in the teaching and learning of the Curriculum Context and Change module?
2. How do facilitators and students use online resources in the teaching and learning of the Curriculum Context and Change module?
3. Why do facilitators and students use online resources the way they do in the Curriculum Context and Change module?

The study selected a case study methodology because it involved a small number of students at a university in Durban. It was qualitative in nature because it investigated the facilitator's and students' experiences, attitudes, beliefs, perceptions and opinions in using online resources in the teaching and learning of pertinent curriculum issues. The findings from the study emerged through the data generation methods of semi-structured individual and focus group interviews; lecture observations; document/learning space analysis; and reflections on the students' online work and conversations. Thirty-five participants took part in the study, of which only five students and the facilitator participated in the semi-structured individual interviews. These five students were also part of focus group interview in which six other students gave consent. All students agreed to have their documents and online reflection analysed for the purpose of this study.

The analysis of data followed a guided analysis approach. The study is supported by two theoretical frameworks, namely, activity theory/cultural historical activity theory and the spider web curriculum. Themes were derived upon analysis of the theoretical frameworks and were used to present the findings. The tool of analysis (themes) consisted of the following components adopted from activity theory: subject; object; tools/resources; outcomes; rules; and division of labour. The principles of the spider web curriculum were also used to support these themes. Other themes that emerged from data include HW, SW and IW; assessment; engagement with prescribed readings of the module; learning outcomes; and assigned roles of community members and division of labour in supporting the achievement of outcomes. The facilitator's and students' immersion with online tools demonstrated that it is an efficient, cost-effective method of enhancing teaching and learning by establishing better channels of communication and interaction at convenient times. This was corroborated by the data generation methods the researcher engaged in, and further confirmed by the literature review.

6.3 SIGNIFICANCE OF THE STUDY

As a consequence of the developments of technology in education, the nature of learning and the acquisition of knowledge are changing due to the teaching and learning tools that have

influenced this process (Tutkun, 2011). The field of education has experienced rapid transformation with the development of information and communication technologies (ICT) during the 21st century. Perceived as the era of 'knowledge revolution', almost all the members of our globalised society have, in one way or another, been influenced by the need for electronic literacy, informatics and communication technologies, whilst still striving to attain the necessary knowledge and skills to use these efficiently (Tutkun, 2011). Globally governments have recognised the stringent position education holds in achieving economic growth and competitiveness (Bennet *et al*, 2006). Through policies and forums governments have become instrumental in their stance towards the innovative use of teaching strategies that encourages online instruction (Bennett *et.al*, 2006). South Africa has embraced ICT initiatives by developing policies and structures to support higher education institutions to implement online teaching and learning strategies in the form of funding, expert knowledge and skilled education technologists, and infrastructure.

Significantly, this study has highlighted that it is possible to successfully operate a WBTL environment with all stakeholders (community) active in their relevant positions (division of labour). The university, through which this study culminated, supports facilitators who want to improve their skills in any field, particularly in educational technology, by funding and incentives. The study revealed that out of the four facilitators who are involved in curriculum teaching at Honours level, only one is qualified and fully utilises online resources. Therefore this study hopes to encourage other facilitators in the filed of curriculum and similar contexts to engage with online teaching and learning to meet the needs of a tech-savvy generation. Further, the use of online tools ensured that the facilitator of the module was able to have a closer, more frequent, interaction with students and allowed an almost daily follow up on their learning activities through the learning space. Since students were accessing the site at different times throughout each week, the facilitator was able to guide them in achieving the learning outcomes of the module. Consequently every student passed the module successfully, to the extent that the use of online tools influenced their own practises as educators.

Importantly, the findings that emerged suggest that the use of online (SW) and physical (HW) resources must be support by concrete IW resources, otherwise learning then becomes about the technology and ignores the relevant concepts and knowledge the module aims to articulate. In order for facilitators and students to use online tools they must have learning theories/frameworks to support teaching and learning to achieve the learning outcomes.

The study also gave perspective as to how learning theories such as activity theory, the spider web curriculum and entertainment-education theory, influence students' learning in the digital

era. These theories postulate that a high level of interaction, peer involvement, wider access to content knowledge and skills take place because students were using the online tools of discussion forum and chat room to converse with each other. In addition students were retrieving information for their assessment tasks at a quicker and easier pace. Therefore, higher education institutions in South Africa need to recognise the benefits e-learning holds and to provide the means and infrastructure to support this method of instruction.

6.4 SUMMARY OF MAJOR FINDINGS OF THE STUDY

The following section is represented by the themes that emerged as a consequence of the findings of the study.

6.4.1 Subject

The subject/s within an activity system is represented by the people who inform the teaching and learning process. Therefore the researcher identified the facilitator and students of the Curriculum Context and Change module as the subjects because it is their view points that have become the unit of analysis in this study. Essentially the subjects conveyed their particular beliefs, values and assumptions that brought a different history to the activity system, and it is within this spectrum the researcher determined how the subject is related to other components of the activity system (Thuraisingam *et al*, 2012). The researcher examined their experiences with the use of online resources in consistency with the claims made by the literature review. The findings suggested that teaching and learning does not require advanced online technologies in the sense that although most students were first-time users of online tools for learning, it was not difficult to use. It was important to analyse participants' profiles because this helped the researcher analyse the skills students already had, and how this would shape their experience in an online learning platform. In addition, the attributes of the facilitator, such as qualifications and education technology experience, informed the researcher about the importance this holds in managing online teaching and learning contexts.

6.4.2 Object

The object in the activity system of the module comprised of the content. The content determines what students learn and the learning activities suggest how they are learning (Van den Akker *et al*, 2009). The purpose of the content is to develop and reinforce students' knowledge to achieve the learning outcomes and inform their practise as educators. Students were given hard copies of the learning guide, which was also available on the online learning space, so that they were aware of curriculum topics (with tentative dates) and issues that would be covered throughout the module. The purpose was to prepare both the students and the facilitator for each week's session. It is important that students were informed in advance about the content to be covered

each week because it ensured that the learning became about the knowledge gained as opposed to the online resources used. With this in mind, the facilitator was careful to prioritise the aims of the content over the technology. Further, there is a direct relationship between content and learning outcomes because the components of an activity system are inter-dependent and interactive with each other (Thuraisingam *et al*., 2012). As such when content was being driven, learning outcomes were highlighted to keep students in the right direction of achieving these. This edified a good learning signal to achieve the aims and objectives of the module.

Significantly the content was represented by theories of learning such as Activity Theory, Entertainment Education Theory, Curriculum Design Research, Online Curriculum Design theories, and research paradigms to help students with their understanding of curriculum issues. This is symbolic of IW resources that are integral in providing strong support to the use of HW and SW resources. Engagement with content led students to become critical thinkers and independent learners because they were able to interact through class debate/discussion on their own. They were agreeing and disagreeing to curriculum changes, policy and practise like the old framework of Outcomes-based Education (OBE) and the newly introduces Curriculum and Assessment Policy Statement (CAPS). They were making comparisons in determining whether this was another political endeavour or a curriculum that can actually work in South Africa. This suggests that the module encompassed a student-centred approach because students took responsibility for their own learning which ultimately contributed to the creation of an interactive environment.

6.4.3 Tools/Resources

Any person or thing that articulates learning becomes a teaching and learning resource (Khoza, 2012). This indicates that tools are represented by resources that help teaching and learning to take place. The module comprised of three types of resources that were used, HW, SW, and IW resources. HW resources refer to any machine or tool used for teaching and learning. The HW resources used in the module include the library, white screen, data projector and computers. SW refers to any material that is produced for the HW to display information or communicate learning. These are the online resources used in the course. As such the SW resources employed were the online library, chat room, discussion forum, Turnitin, search engines and YouTube. The ideological-ware (IW) of teaching and learning resources includes theories about learning, teaching and learning strategies, and research findings and experiences. These involve activity theory, the spider web curriculum, entertainment-education theory and the APA 6th edition of referencing that were interrogated to support the content of the module. HW and SW articulates teaching and learning that one can see and touch, whilst IW is symbolic of that which cannot be seen or touched. HW and SW fall in the domain of Technology in Education (TIE) and

IW lies within the spectrum of Technology of Education (TOE), as addressed in the literature. It is important to understand these assumptions in light of the study because the findings suggested that there was powerful support for TOE than TIE. The facilitator was using HW and SW tools in conjunction with IW resources. HW and SW resources were not used independently in this study; however IW resources can be used on their own but were not. When HW and SW resources are used apart from IW then learning becomes about the technology itself.

Drawing from the findings the study revealed students as Digital Awareness Users (DAU) because their facilitator constantly built e-learning/learning signals through learning theories. Therefore the DAU were encouraged by powerful IW resources, with combined HW and SW to achieve the intended learning outcomes of the module. All students submitted their assignments through discussion forum and Turnitin, with hard-copies given to the facilitator. This suggested that HW, SW and IW resources were strong in supporting students' learning and assessment.

The study also indicated that the most widely used online tool was discussion forum because, firstly it was compulsory, and secondly students were able to engage in peer involvement by critiquing each other's work. The chat room was the tool used the least for learning as it was mostly used for social dialogue amongst students. All students used the online tools of search engines, the chat room and Turnitin, whilst most used YouTube and the online library. The study revealed that the use of online resources proved more efficient and quicker than physically visiting the library to search for books, journals and other publications. Further, it led to close interaction between the facilitator and students, and inculcated a high sense of peer involvement. As a result of the online learning space, students were able to converse with each other at different times from their personal computers/laptops. This freedom of space and time created a greater interaction amongst students. Ultimately this affected the achievement of learning outcomes to a great extent in that all students successfully passed the module.

6.4.4 Outcomes/aims and objectives

A learning outcome represents statements of what is expected that the student will be able to do as a result of the learning activity (Jenkins & Unwin, 2001). Learning outcomes in the current plethora of education symbolise a student-centred approach. The module adopted this approach because it contained eight specific learning outcomes that students were made aware of in their very first lecture through the course guideline (Van den Akker *et al*, 2009). The facilitator considered it vital for students to know these prior to the process of teaching and learning so that they realise what is expected of them and can prepare according to achieve the learning outcomes. Therefore the content of the module was administered first and then students were evaluated through assessment tasks and this led to the achievement of the outcomes. This also

highlighted a good learning signal (Khoza, 2013a). Learning outcomes of the module included analysis of curriculum policy, practise and change; engagement with online design theories that supported the use of an online learning platform; and debate about curriculum in a progressive society, amidst others.

Aims and objectives included critical debate about curriculum issues such as the changes South Africa has experienced since 1994, starting with National Curriculum Statement to the current Curriculum and Assessment Policy Statement. Students engaged in critical and independent thinking because on their own they were responding to lecture topic/content without fear. Further they were able to prepare PowerPoint presentations regarding research in the subject area they taught. This led to greater participation by students that affected their understanding of the module to complete their assignments. The facilitator had his own personal learning outcomes in terms of administering the content, using different pedagogical methods, and evaluating assessment tasks. These were achieved because he completed the content of the module in time, used a range of teaching resources (online and offline), and evaluated all assignments on time.

The findings that culminated regarding learning outcomes suggest various components (such as the teaching strategies/theories, content and assessment tasks) are required to make the whole learning process successful, which is indicative by the learning outcomes achieved. Students were able to complete their assessments and pass the module, whilst the facilitator achieved his objectives of teaching using the relevant resources. The theme has also highlighted that learning outcomes are achievable only if they are clearly stated in support of criteria and assessment when used with HW, SW and IW resources to facilitate teaching and learning. Therefore, the use of online resources helped attain the intended goals (outcomes) of the module. Consequently this supports the premise of the theoretical framework of activity theory underlying this study which advocates that an activity system includes a reciprocal process that involves interdependent components (Kain & Wardle, 2008).

6.4.5 Rules

Kain and Wardle (2008) postulate that rules symbolise a mutual agreement about how an activity will evolve in an objective direction towards achieving the outcomes. Therefore it is pertinent to consider the component of rules in a learning activity since this is what drives students to achieve the learning outcomes envisaged. The rules of the module included completion of assessment tasks (formative and summative), compulsory attendance and engagement with prescribed readings. Students were introduced to various tools (online and offline) such as search engines, discussion forum, YouTube, online library, books, journals and other learning resources to help

them with their assignments. The prescribed readings provided a clear direction into the type of learning materials students should engage with to better understand and complete their assessments. For face-to-face students attendance was compulsory to ensure they were part of the class discussions and able to complete the PowerPoint presentations that were part of their assessment. These were effective in helping students achieve the learning outcomes of the module. The component of rules in an activity system is crucial to mediation. The subject (students and facilitator) are supported by the community (technical staff, university faculty, curriculum department) and is influenced by rules (attendance, assessment, prescribed readings) that direct the activity towards overall goals (learning outcomes) (Thuraisingam *et al,* 2012).

6.4.6 Community

Activity theory depends on how people work together, using tools to achieve outcomes and this involves a sense of *community* (Kain & Wardle, 2008). The subject is an extension of a larger community joined by the work they have in common (Yamagata-Lynch, 2010). The community's interests give purpose to the activity by dividing the workload into specific duties within reach of the objectives. The researcher has identified the community as a support base for the Curriculum Context and Change module, which ultimately affects students' achievement of learning outcomes. Therefore the community members include technicians, peer students, external examiners, conference presenters and scholars in the field of curriculum, the academic cluster of Curriculum Studies, and the researcher.

As a result of the findings and analysis it can be established that the role of community in an activity system is one of support (Thuraisingam *et al*, 2012). Each 'member' has their own ways of providing guidance to students in order to help them achieve their goals (learning outcomes). Technical staff control problems that can be experienced with technological devices; scholars provide perspective to learning within and from an online environment; the external examiner evaluated students' projects by using a variety of resources to accommodate their achievement; the academic cluster encourages and supports the use of an online platform for teaching and learning; peers provide a powerful support base in helping each other learn; and the researcher investigated the use of online resources to highlight the possible challenges and benefits of implementing this type of resource. Each of these roles symbolise interdependence, and contribute to the overall activity system. This explains then that without an online learning environment technical staff might not be required; if students' do not successfully complete their projects with fast, reliable online resources, external examiners will not be able to mark their work, and peers will not have much to support; conference seminars will not attract as many students; and the researcher will not have a research task to investigate in the area desired. Therefore the position of community in the teaching and learning context is very important.

6.4.7 Division of Labour

The division of labour explains the distribution of tasks and roles between members of the community and the division of power and status (Murphy & Rodriguez-Manzanares, 2008). This suggests that the community members also represent the division of labour, because their roles are not only defined by support to the learning context, but duties and responsibilities to ensure that it is carried out (Amory, 2006). The researcher has established that although the technical staff, peer students, external examiners, conference presenters, scholars of academic articles, and academic cluster of Curriculum Studies have effectively contributed to students learning of curriculum, simultaneously their duties and responsibilities also have had a major impact. This suggests that they were not only responsible for supporting students' learning, but performing their specific duties. For example the facilitator was understanding and supportive when some students submitted assignments late, but also performed his duty of ensuring that the students hand in their assignments to meet the learning outcomes of the module. The function that each performs has an effect on what, how and why students learn. The researcher also included the facilitator and students in division of labour because students are responsible for completing their assignments and the facilitator ensures that the most appropriate teaching and learning strategies are employed to convey successful delivery of content. The findings postulate that the ideology of human interaction proposed earlier supports activity theory as a framework for describing how people work together (division of labour), using tools (e.g. chat room) to achieve outcomes (learning online) (Nardi, 1996). It is therefore eminent to consider how labour is divided in an activity system because this accounts for the influences that shape the activity in a broader context.

6.5 ADDRESS OF THE RESEARCH QUESTIONS

The above discussion summarises the major themes postulated by the findings. They suggest that the activity system in which the Curriculum Context and Change module emanates is a consequence of the components that are in constant interaction. They are simultaneous with the principles of the spider web curriculum that suggests that each component is as strong as its weakest link. Therefore the components are dependent and interdependent in ultimately achieving the outcomes of the teaching and learning process. This study was significantly interested in the use of online tools as a pedagogical approach for this type of learning environment. As such the address of the research questions in the next section will help present a more articulated view.

6.5.1 What online resources are being used by facilitators and students in the teaching and learning of the Curriculum Context and Change module?

The study revealed that there were three types of resources used, namely HW, SW and IW resources. Although particular interest was given to examine the use of online resources (SW), it was important to consider HW and IW in supporting this strategy. The HW (offline) resources included the white screen, data projector, computer/laptops and the library. The SW (online) resources employed were the online library, chat room, search engines, YouTube, discussion forum, and Turnitn. The IW resources involved activity theory, entertainment-education theory, the spider web curriculum, APA 6th reference system, and other teaching and learning theories. Without the HW resources it would be difficult to operate an online platform for teaching and learning an entire class. Although it can be accessible from a mobile phone, the effect and intentions will not be the same. In addition certain documents cannot be downloaded on to a mobile phone because the SW capability is not the same as a computer hard-drive. IW is extremely important is supporting teaching and learning strategies such as the use of online resources, otherwise learning becomes about technology and not the intended curriculum.

6.5.2 How were online resources used by the facilitator and students in the teaching and learning of the Curriculum Context and Change module?

It is important to determine how the HW resources were used as this supported the online resources (SW). The computer was used to access the online learning space in which the facilitator and students could engage with the online tools. The white screen was used to display information through the data projector from the computer. This was used to co-ordinate whole class discussion. The facilitator also used the white screen to make inferences between what was displayed on the computer screen with teaching and learning theories. The HW resources enabled face-to-face teaching and learning because the facilitator and students engaged in critical discussion about curriculum policy, practise and change in South Africa. The white screen was further used to display diagrams such as the activity system and spider web, in which the facilitator could directly point at how the components functioned. The students used the computer, data projector and white screen for their PowerPoint presentations to achieve the learning outcomes of their assessment task. These presentations invoked whole class discussion where students could learn about each other's subject area and how research was being undertaken. Although the university library was available till late hours of the evening only a few students 'visited it'. Only one student indicated that he had borrowed a book from the library because it was convenient as he was a resident of the campus and had the available time. The others used the library just to show that they had some sense of what it comprised, but hardly used it for learning purposes.

The SW resources were used in the following way. Students accessed the online library via the university web page. It contained a series of books, journals, periodicals and publications by thousands of scholars that were retrievable. Students were able to find out about a particular source of information they required and if it was not available at the university, the library highlighted its availability (most often a book) at the other affiliated campuses. Other materials were downloadable for greater accessibility by the student. The chat room was used by the facilitator to introduce students to the 'feel' of using online tools because it is simple to use. It was also a mechanism for interaction between the facilitator and students and between students themselves. As such students used the chat room to get to know each other by establishing their names and other personality traits. The chat room displayed the students' names, pictures (optional) and comment posted. Through the chat room, they exchanged information about each other and engaged social dialogue.

Search engines were a valuable tool in searching for scholarly, published articles, books, journals and other materials. The most commonly used search engines by students were Soople and Google, whilst the facilitator used these as well as Eric, Springer Link, and Jstor amidst others. Google and Soople were accessible via the online learning site, whilst these and others could be retrieved from the internet. Students used search engines to download information that helped them greatly with their assessment tasks. The facilitator used this tool to provide the prescribed readings and other learning materials of the module. YouTube was the only video resource provided through the learning space. Two videos concerning research paradigms and methods of conducting research were uploaded onto the site. This represented a visual teaching method of how students could undertake research. Students were able to see and hear how experts in the field of research conveyed their epistemologies. This symbolised an alternative strategy of teaching.

The online discussion forum tool was functional in accepting students' assessment tasks and eliciting communication between participants. Students used the tool to submit their tentative assignments, and with which the other students and the facilitator could view, critique and make recommendations. Each student made improvements, based on the feedback they received, which then improved their overall assessment mark. Students also posted their topics for inspection by their peers to determine whether it was relevant in the context in which research was being conducted. Feedback was provided where everyone in the course could view the comments posted on the discussion forum. The facilitator also used to tool to update students on activities that were taking place and as a way to remind students when their learning tasks were due. He also provided comments to students' work. The Turnitin program was used to receive students' assignments once they had made changes from the feedback they received during the

discussion forums. Only completed assignments' were allowed to be submitted the Turnitin program which would then attempt to detect plagiarism. The program manages the process of submission and tracks papers electronically. Each student sends in their assignments through file upload or 'cut and paste'. The service then compares the paper's text submitted to an enormous database containing over 12 billion digital content, 110 million papers in the student paper archive, and over 80 000 academic, professional and commercial journals and publications (iParadigms, 2010). On its own Turnitin does not detect plagiarism, instead it matches text to help the facilitator determine if plagiarism has occurred.

6.5.3 Why were online resources being used by the facilitator and students in the Curriculum Context and Change module?

The use of online resources (SW) in the module was only effective because they were motivated by powerful IW resources. IW resources included the teaching/learning theories, teaching/learning strategies, research findings, scholarly articles, and paradigms of learning. It was necessary for students to engage with the IW material to explore curriculum issues in the context of change, policy and practise. This was the main purpose of the module, and the teaching and learning strategies (online resources) were used to disseminate the content. These were important in primarily achieving the learning outcomes of the course, and inadvertently transforming their practise as educators.

Certain online resources were compulsory, therefore they were used. The Turnitin program was mandatory as the university had stipulated that it should be used for every module. This was a good way of detecting plagiarism and made marking efforts much easier for lecturers. The university is very strict concerning plagiarism so this program was implemented for students and lecturers to learn the ethical means of conducting research and assessments. Discussion forum was also considered vital for every student to use. Without this tool they were not able to meet the learning outcomes of the module. The facilitator emphasised throughout each week's lecture that assessment tasks had to be first submitted to the discussion forum before handing it in to him. This was to enable peer involvement and critique of each other's work so that a fair assessment can be drawn for each student. This symbolises a student-centred approach consistent with the learning theories that were projected throughout the module. The online learning space (LMS) was also compulsory since this encompassed the use of online tools. The site contained most of the IW resources that students and the facilitator interrogated, as it contained all the relevant theories, articles and publications. Also the YouTube videos on research paradigms and methods of conducting research could easily be accessed via the online learning space.

Other online tools were not compulsory, yet still important for students to use. Relevant information for students can be gathered from the university library (HW), but students mostly used search engines. The assumption lies in a quicker, easier and more efficient means of accessing information with only a touch of a few buttons. This was particularly viable for part-time students who were full-time workers with family responsibilities such as marriage, children and household chores. Whilst the library may have taken investment of hours searching for appropriate learning materials, students could use search engines to generate all their information from the comfort of their homes with personal computer/laptop and internet connectivity. In the same token, the online libraries were also easier to use than the physical building, because students could type in the information they required and could access this from immediately available online books, journals, publications and scholarly articles. Further if they required the physical book, the online library would give the precise location, shelf number and number of available copies. The chat room was used only to introduce the module and for students to learn about other online learning tools. Simultaneously they were also predominantly used for social discussion such as exchanging greetings and personal information. Therefore the chat room was used in this way to bring about a sense of interaction amongst students, particularly for those who were shy and introvert, but not a very valuable too for teaching and learning in the Curriculum Context and Change module.

6.5.4 Discussion of Findings

From the findings of the first research question of this study it emerged that it is important to identify the HW resources (computer, data projector, modem) because without these an online teaching and learning platform cannot be established or exhibited. These HW resources are needed because they are components through which online tools operate. The results from the second research question intertwine with the first because SW resources carry information only when the HW resources they utilise are operational. This suggests that HW and SW resources are important, but on their own they demonstrate teaching and learning about technology and tools. Therefore the third research question overlaps with the first two because it brings into perspective the prominence of IW resources that is compulsory in propagating the teaching and learning of curriculum issues which is the aim of the course. Consequently, the study has answered the what, how and why online resources are being used in the teaching and learning of the Curriculum Context and Change module. The study revealed that teaching and learning is not about online tools alone, but instead about how the same tools can support and enhance the content being administered. Therefore the finding suggest that HW and SW resources can only be used if they are built upon foundational IW resources (curriculum content, teaching/learning theories), thereby articulating TOE.

Interestingly the data generated further indicate that certain resources such as Turnitin, discussion forum and IW resources were considered mandatory in use by the module, motivated by the university. Certain tools were also important but not compulsory to be used such as the search engine, because this could have been substituted for the online library. Other tools were operational but not used such as the facilitator and student profiles. The university is supporting the governments' initiatives of incorporating ICT into higher education because the use of an online learning environment has been inculcated. It also posits that they are sensitive to needs of a tech-savvy cohort of students entering the tertiary world. Moreover an important discovery has culminated for the researcher in drawing from these interpretations. Thus far the study has recognised and put forth the HW and SW resources must be used in conjunction with strong IW resources. However, interestingly the researcher ascertained from the emerged findings that there are wanted resources, needed resources and demanded resources. This is an integral assumption that can be supported by the following framework developed by the researcher, worth interrogating to some degree. It is beyond the scope of this study to entail a deeper investigation, yet a brief analysis to enhance the assumptions made thus far should provide critical investigation for future endeavours worth pursuing. This is provided in the form of a recommendation.

6.6 RECOMMENDATIONS

6.6.1 Online/E-learning Resources Framework

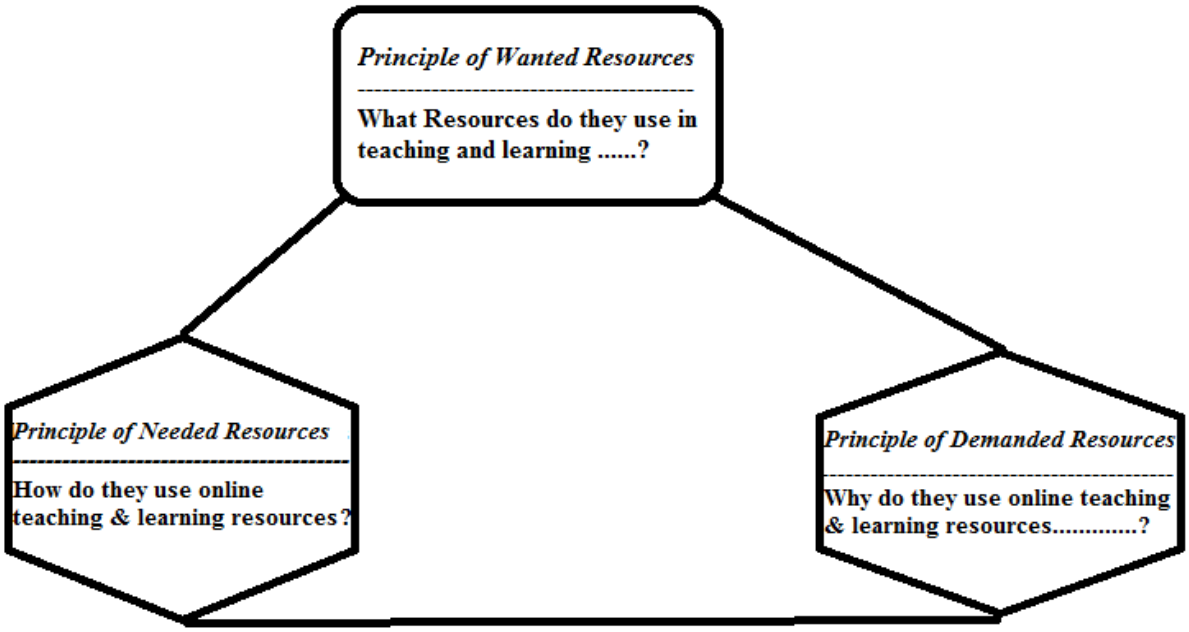

Figure 6.1: Online or E-learning Resources Framework

The above Figure 6.1 projects the E-learning Resources Framework that can be used to support online teaching and learning contexts, as a consequence of the findings that developed from the

data generated. They are consistent with the research questions addressed in this study, and can therefore be applied to similar online teaching and learning environments.

6.6.1.1 Principle of Wanted Resources (Hard-ware – HW)

The ideology behind this principle suggests that there are various available HW resources, but they may not all be needed/demanded by the module. This study identified three types of resources, HW – library, whiteboard, computers; SW – online library, chat room, search engines, discussion forum, Turnitin, YouTube; and IW – teaching/learning theories/strategies, activity theory, entertainment-education theory, spider web curriculum and APA 6th reference system. Each of these resources hold value and merit in some way to contributing to teaching and learning. In the context of this study they have been highlighted and discussed, however not all were needed for the module. For instance the chat room particularly elicited social communication and therefore did not contribute in any significant way to informative discussion about curriculum. Students merely exchanged greetings and enquired about each other's day. There was no evidence of learning taking place regarding the module content. The white screen was used only because it was available. It was used to provide information holistically for the entire class to view, however it was not detrimental to be used for teaching.

6.6.1.2 Principle of Needed Resources (Soft-ware – SW)

This principle applies to the second research question of this study determining how online resources are used for teaching and learning (SW). This suggests the use of soft-ware (SW) is always needed in driving hard-ware (HW) to display information. Although there are a myriad of online resources (SW) that can be implemented for education, there are some that are specifically needed. This study encompassed both face-to-face and distance education students. Online education was birthed through distance learning correspondence. As such in this study the use of online resources were needed to accommodate distance and face-to-face students. In particular, the distance education students needed the online resources to be included in the class via the learning space. On a regular basis these students accessed the site to follow up on learning activities to prepare for assessment tasks. Alternatively the face-to-face students needed the online resources because many of them were part-time students with full-time responsibilities such as work and family. Therefore the online resources made it convenient for them to access the learning space in the comfort of their own homes, in their own space and time. This led to independent learning and better achievement of the learning outcomes.

6.6.1.3 Principle of Demanded Resources (Ideological-ware – IW)

The third research question of this study investigated why online resources are being used in teaching and learning and this is consistent with the principle of demanded resources. These refer to the most important, compulsory resources that must be used for the module. The researcher identified teaching/learning theories, content, teaching/learning strategies, discussion forum, Turnitin, and email as the most relevant resources that must be used in the module. This implied that all IW resources were crucially important and as well as certain SW resources. The HW resources then became compulsory because without these it would be difficult to effectively implement a sustainable online learning plethora. The IW resources demanded the SW and HW resources because the university was sensitive to the needs of a technologically immersed generation of students being encountered. The government also support the rationale of ICT integration into higher education pedagogic practises. Furthermore, students were interested in this type of learning because they were already familiar with, and regularly used, online tools used for socialising.

6.6.1.4 Implications for the Study

The online/e-learning framework supports this study because it suggests that the most important resources are IW in teaching and learning. HW and SW resources are only effective if they are used in conjunction with IW resources. This explains then that knowing the resources used (principle of wanted resources) is of lesser importance than how (principle of needed resources) and why (principle of demanded resources) they being used. The online/e-learning framework concurs that although many resources are available (principle of wanted resources – chat room, white screen), not all will be used for teaching and learning, since there are those that are needed (principle of needed resources – SW & IW for distance education), and those that are mandatory to be used (principle of demanded resources – theories of teaching/learning, discussion forum, Turnitin, online learning space). This highlighted firstly, the online resources that were more valuable than others, such as the discussion forum and Turnitin, and secondly the teaching and learning theories/strategies that were critical to the facilitator's and students' experience of the course. Perhaps one's decision should be influenced by the principle of demand in order to successfully improve the teaching and learning situation. This assumption hopes to alert lecturers in similar contexts to review their pedagogic practises to create better learning opportunities for their students.

6.6.2 Improving the Chat Room Tool as a Valuable Resource

The findings in this study revealed that the chat room was not a very useful teaching and learning tool in the Curriculum Context and Change module. It was merely used for social discussion at a minimal level to exchange greetings. The facilitator believed the chat room was helpful in

introducing students to each other to create classroom interaction. Interaction was important for the online discussion forum as peer involvement/critique of each student's work would support the overall progress of students. However, the chat room could be implemented in a way that would add more value to the teaching and learning environment. The study recommends that with careful planning and strategic discussions the chat room can foster meaningful discussions. The facilitator or students can initiate discussions on a particular topic, research issue or conversations about assessment tasks. The transcripts of the dialogue can be uploaded to a class web page or lecture conference (Weber & Lieberman, 2000). This will afford those students who were absent for the chat session to view the transcripts at a later stage. Inadvertently this will exhibit greater interest, active participation and a better sense of community amongst students.

Chat sessions are supportive in many ways. For small group learning students can be divided into groups of three to four to work on projects, devise strategies and brainstorm ideas. In the case of exam preparation students can be assigned to pose different questions and topics to incur useful insight (Weber & Lieberman, 2000). This instils a virtual study session that students can access from the comfort of their homes. Through the chat room the facilitator can initiate oral quizzes of the course content in a matter of a few minutes. Students can be informed in advance of the date and time of the quiz to meet online. This will alert the facilitator about the progress of students' knowledge and understanding of the course, to determine whether the outcomes are being achieved. Virtual guest speakers such as another facilitator/instructor or expert in the field can be invited to participate in the chat discussion. Students can prepare the questions that they want to ask in order to gain better knowledge about the content.

The online chat room tool can be very helpful in supporting students who experience problems with the medium language of the institution in which they are studying. Further it can facilitate learning and enhance communication (Wang, Newlin, & Tucker, 2001). However students and facilitators need time to become proficient and confident in using this online learning tool. Also it needs to be managed appropriately, with an investment of time, so that all students are engaged with the learning process. Therefore the facilitator has to be quick and alert in drawing students to the initial topic if they deviate and waste time.

6.7 CONCLUSION

In conducting this investigation, the study was able to identify, understand and explain the use of online resources in the teaching and learning of the Curriculum Context and Change module. The data was generated from a university in Durban. Thirty-five participants took part in the study, while only five students and the facilitator participated in the semi-structured individual

interviews. These five students and six others, with the facilitator, participated in the focus group interview. All thirty-five participants gave consent for their documents to be analysed, including the online reflections. In addition they all were also part of the observations that culminated. The study implemented a qualitative case study methodology that employed observations, semi-structured individual interviews, focus group interviews, document/online learning space analysis and an online reflection. These were used to collect data and answer the following research questions that guided the study:

1. What online resources are being used by facilitators and students in the teaching and learning of the Curriculum Context and Change module?
2. How do facilitators and students use online resources in the teaching and learning of the Curriculum Context and Change module?
3. Why do facilitators and students use online resources the way they do in the Curriculum Context and Change module?

The data was analysed following a guided analysis that articulated seven themes and categories that promoted them. The study purposed to explore the potential benefits and possible challenges into the use of online resources for teaching and learning of curriculum issues. Without a doubt, the research findings indicate that the benefits far outweighed the challenges. In fact, this small case study revealed that there were only minor challenges because the facilitator implemented the resources in an efficient way which achieved the outcomes of the module. The benefits/advantages of the use of online resources included greater participation by students; work and study were combined to save time and ensure completion of tasks; peer involvement; immense interaction between students themselves, and between the facilitator and students; independent learning led to richer experience; informed practise as educators; more accessibility and saving costs; and achievement of learning outcomes of the module. The challenges included minor technical difficulties with the projector in one instance; and students being distracted by social networking sites to a minimal extent. Although the research identified numerous problems that can incur in an online learning platform, they were not consistent with the findings of this study because the facilitator was careful to use HW and SW resources in co-ordination with IW resources. The study therefore proposes that since the potential benefits significantly outweighed the challenges the use of online resources is highly recommended for teaching and learning in if they are supported by concrete IW resources.

The literature assumed a crucial position in analysing and comparing the findings emerged in this study. The use of online resources in different contexts included the experiences of South Africa and international countries. Although there is good support for ICT integration into higher education in South Africa, there is still a shortage of educational technology lecturers. Consequently many unqualified and inexperienced facilitators are using online teaching tools

which can present serious challenges in reflecting the potential worth of this pedagogic strategy. In addition many lecturers are not using this mode of delivery because they are still consumed by traditional ways of instruction. Therefore this study hopes to encourage other facilitators of a similar context to either upgrade their skills in educational technology or embrace teaching and learning strategies that support online education. Higher education is moving in the direction of increased ICT integration, therefore lecturers in South Africa should succumb to this transformation.

The study encountered some limitations that need to be acknowledged. Firstly, the sample size for the individual semi-structured interviews was limited to only five students. Secondly, some students expressed that they were unable to participate in the interview because they do not have the time as they were often working full-time and studying part-time. This curtailed the scope of the study. The researcher conducted limited interviews because students were unavailable, to the extent that students cancelled interview appointments or did not turn up. Another limitation was time factor. The researcher is a full-time worker with other responsibilities; therefore the time in which the study was conducted was limited. Nevertheless the researcher attempted to provide the best possible analysis and interpretation of the findings.

The research entailed a case study methodology in an interpretive paradigm. As such the experiences, beliefs, attitudes and opinions of the facilitator and students will contribute to the literature concerning the use of online resources in curriculum studies. Interpretation from the findings regarding the benefits in using online resources in teaching and learning could better inform teacher training institutions with reference to pre-service teacher preparation and in-service professional development. It is through teacher training institutions, and workshops and seminars held through the Department of Education that awareness of teaching methods and principles associated with an online teaching and learning perspective can be carried out. The researcher hopes that findings generated from this study will provide a gateway for critical debate on mechanisms that will increase lecturers' use of online teaching in curriculum and perhaps other domains. The insights provided by the study assert that lecturers should be cautioned in how to use online resources, because the IW resources must maintain prominence over the HW and SW resources, otherwise learning then becomes about technology.

Should the recommendations from this study be brought to light, more facilitators will embrace online teaching and learning in the appropriate way. Students will have increased opportunities to learn, at convenient times, with peer support and involvement. The online teaching and learning platform instils greater participation of students, immense interaction between them and the facilitator, and better achievement of learning outcomes because of constant communication.

The online learning context further invokes social skills, improved inventive thinking such as problem solving, critical thinking, sound reasoning, meaningful communication; and creative and confident students who will strive in the global community as envisaged in South Africa's response to ICT initiatives.

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APPENDIX A

19 Madho Road
Shallcross
4093
Durban

Dear Dean of Education: Professor G. Kamwenda

I am undertaking a research project on "the use of online resources by facilitators and students in the teaching and learning in Curriculum Context and Change". Therefore, it will be highly appreciated if you could read this document, sign the declaration below and email it as an attachment to my email address ramona.budden@gmail.com.

The research is influencing the ways in which people are being educated and trained. South Africa, like any other developing countries, is forced to conduct studies of this nature in order to critically evaluate and improve access to methods of teaching and learning that accommodates the needs of a tech-savvy generation. Therefore, this study aims at providing valuable information on the use of online resources in the teaching and learning of Curriculum Context and Change.

Please take note of the following issues:

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

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

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

R. Budden
University of KwaZulu-Natal
Tel.: (031) 260 7585
Cel.: 076 172 1144
Email: ramona.budden@gmail.com

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

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

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

…… **……**

SIGNATURE OF DEAN **DATE**

APPENDIX B

19 Madho Road
Shallcross
4093
Durban

Dear Academic Cluster Leader: Education Studies: Professor R. Sookrajh

I am undertaking a research project on "the use of online resources by facilitators and students in the teaching and learning in Curriculum Context and Change". Therefore, it will be highly appreciated if you could read this document, sign the declaration below and email it as an attachment to my email address ramona.budden@gmail.com.

The research is influencing the ways in which people are being educated and trained. South Africa, like any other developing countries, is forced to conduct studies of this nature in order to critically evaluate and improve access to methods of teaching and learning that accommodates the needs of a tech-savvy generation. Therefore, this study aims at providing valuable information on the use of online resources in the teaching and learning of Curriculum Context and Change.

Please take note of the following issues:

11. There will be no limit on any benefit that the participants may receive as part of their participation in this research project;
12. Answer all the questions;
13. Respond to each question in a manner that will reflect your own personal opinion;
14. Your identity will not be divulged under any circumstance;
15. There are no right or wrong answer;
16. All your responses will be treated with strict confidentiality;
17. Real names of the participants will not be used, but symbols such as A, B, C or X, Y, Z … will be used to represent participants' names;
18. The participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves;
19. The participants will not be under any circumstance forced to reveal what they don't want to reveal; and
20. No audio or video recording will be made.

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

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

R. Budden
University of KwaZulu-Natal
Tel.: (031) 260 7585
Cel.: 076 172 1144
Email: ramona.budden@gmail.com

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

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

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

…… **……**

SIGNATURE OF ACADEMIC CLUSTER **DATE**

APPENDIX C

19 Madho Road
Shallcross
4093
Durban

Dear Participant

I am undertaking a research project on "the use of online resources by facilitators and students in the teaching and learning in Curriculum Context and Change". Therefore, it will be highly appreciated if you could read this document, sign the declaration below and email it as an attachment to my email address ramona.budden@gmail.com.

The research is influencing the ways in which people are being educated and trained. South Africa, like any other developing countries, is forced to conduct studies of this nature in order to critically evaluate and improve access to methods of teaching and learning that accommodates the needs of a tech-savvy generation. Therefore, this study aims at providing valuable information on the use of online resources in the teaching and learning of Curriculum Context and Change.

Please take note of the following issues:

21. There will be no limit on any benefit that the participants may receive as part of their participation in this research project;
22. Answer all the questions;
23. Respond to each question in a manner that will reflect your own personal opinion;
24. Your identity will not be divulged under any circumstance;
25. There are no right or wrong answer;
26. All your responses will be treated with strict confidentiality;
27. Real names of the participants will not be used, but symbols such as A, B, C or X, Y, Z … will be used to represent participants' names;
28. The participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves;
29. The participants will not be under any circumstance forced to reveal what they don't want to reveal; and
30. No audio or video recording will be made.

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

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

R. Budden
University of KwaZulu-Natal
Tel.: (031) 260 7585
Cel.: 076 172 1144
Email: ramona.budden@gmail.com

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

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

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

…… **……**

SIGNATURE OF PARTICIPANT **DATE**

APPENDIX D

SEMI STRUCTURED INTERVIEW
FOCUS GROUP INTERVIEW SCHEDULE WITH THE FACILITATOR AND STUDENTS
(For critical research question two)

How do facilitators and students use online resources in the teaching and learning of Curriculum Context and Change at a university in Durban?

Welcome to our focus group interview. I am extremely grateful for your time and effort in volunteering your presence here today. As you are aware, I am a Masters student at the UKZN, Edgewood campus and am currently undertaking a research regarding the use of online resources in the teaching and learning of Curriculum Context and Change at a university in Durban. The purpose of this interview is to stimulate memories and ascertain experiences to elicit data to answer the research questions, in order to understand beliefs and attitudes you posses about online learning and its relationship to teaching and learning in Curriculum Context and Change. It is anticipated that your input will enhance the value of my study and I will be obliged to share the findings of my study with you. Kindly take heed that all your responses will be treated with strict confidentiality and the names of you and your university will not be divulged under any circumstances.
Thank You.

1. **Introductory Inquiry**: The researcher introduces herself and in turn the participants introduce themselves. The researcher requests that they introduce themselves in terms of name, marital status and qualification. The researcher further probes the following questions:
    - Which institution of higher education did you complete your undergraduate degree?
    - When were you admitted into the teaching profession?
    - What subjects do you specialise in? What subjects are you currently teaching?
    - What persuaded you to pursue your studies to undertake the Honours Programme?
    - Why did you choose the field of Curriculum Studies?
    - What are your interests/hobbies?

The researcher generated the following questions using Activity Theory and the Spider Web Curriculum.

2. Subject (Participants / Facilitator & Student Roles)

- Can you identify what online resources are used by the facilitator in teaching and learning?

3. Object (Use of online resources / Content)

- What resources does the facilitator use to teach online curriculum and proposal development?

4. Tools (Materials / Resources, Location, Assessment)

- Describe the resources you use to learn?
- Describe the online resources you use to learn?
- What do you enjoy about using online resources for learning about curriculum issues?
- Can you identify any challenges in using online resources?
- Other than lectures, if so, where do you access the online course from? (E.g. Home, library, internet cafes, etc)

5. Rules (Time, Assessment, Learning Activities)

- Do you find the assessment tasks conducive to an online learning approach?
- Are the assessment tasks relevant to Curriculum issues?
- Other than lectures, how often do you access the online course for Curriculum Context and Change?
- What learning activities are used to explore curriculum issues?

6. Community (Grouping)

- What online resources do you use to communicate with fellow students of the class? Explain in terms of:
  - Accommodating learning styles
  - Peer learning
- During lectures did any technical difficulties arise that caused a disruption to teaching and learning?
- How effective was the Lan manager or technical support?
- How did the facilitator respond to the challenge?
- Did you use the university library to assist you in completing your assessments? If so, how often?

7. Division of Labour

- As a facilitator what are the benefits in using online resources for teaching and learning? Explain in terms of:
  - Teaching methods and strategies
  - Learning environment
  - Collaboration
- What additional or specialized knowledge or skills do you think are needed to support students in fully utilizing online resources for learning?
- Has the technical support team been helpful in assisting students with computer/technology related challenges? Explain.

8. Outcomes (Aims & Objectives)

- To what extent has the use of online resources helped you in understanding curriculum issues of change, development and progression?
- Describe the influence of online resources in assisting you to complete your proposals and other assessment tasks?
- What online resources did you use the most to engage in achieving the aims (assessment) of the course? Why?
- What online resources did you use the least to achieve the aims (assessment) of the course? Why?

APPENDIX E

SEMI STRUCTURED INTERVIEW

INDIVIDUAL INTERVIEW SCHEDULE WITH STUDENTS

(For critical Research Question Three)

Why do facilitators and students use online resources in the teaching and learning of Curriculum Context and Change at a higher education institution in Durban?

The purpose of this interview is to understand the benefits and challenges that you encountered in utilizing online resources in the teaching and learning of Curriculum Context and Change on the basis of your experiences, beliefs, attitudes and benefits you hold about this technology.

1. When were you first introduced into using online resources as a mechanism for teaching and learning? Explain.
2. What do you like most about learning with online resources? Were there IW resources used to support this learning?
3. What do you like least about learning with online resources?
4. The Curriculum Context and Change course is accessible online, can you explain how do online resources support :
    - Different learning styles
    - Peer learning
5. Do you find the course content appropriate to the use of online resources as a pedagogic means of educating? (Explain in terms of theories of learning)
6. Do you find the assessment task relevant to the course?
7. To what extent has online resources assisted you in successfully completing the assessment requirements of the course?
8. Which online tools did you use the most to help you in your learning activities and assessment tasks? Why?
9. Can you explain the challenges or barriers you experienced in using online resources in the course? (In terms of technical problems, ICT skills, lack of access)
10. Did you find the facilitator supportive during challenges students experienced in using online resources? Explain.

11. Describe the facilitator's knowledge, skills and attitude towards using online resources as a tool for teaching and learning?
12. What additional or specialized knowledge or skills do you think are needed to support students in fully utilizing online resources for learning?
13. As an educator, how does online teaching and learning inspire you to change your pedagogy in the classroom?
14. How does online teaching and learning encourage professional development?
15. What recommendations can you suggest that can improve the use of online resources in teaching and learning?
16. In your opinion, will you recommend the use of online resources as tool for teaching and learning to other higher educational contexts that are not currently using it? Explain.

APPENDIX F

SEMI STRUCTURED INTERVIEW

INDIVIDUAL INTERVIEW SCHEDULE WITH FACILITATOR

(For critical Research Question Three)

Why do facilitators and students use online resources in the teaching and learning of Curriculum Context and Change at a higher education institution in Durban?

The purpose of this interview is to understand the benefits and challenges that you encountered in utilizing online resources in the teaching and learning of Curriculum Context and Change on the basis of your experiences, beliefs, attitudes and benefits you hold about this technology.

1. How were you trained to use online resources as a tool for teaching? Explain also in terms of your experience.
2. What knowledge and skills do you need in order to use online resources for teaching and learning at higher education?
3. What do you like most about teaching with online resources?
4. What do you like least about teaching with online resources?
5. The Curriculum Context and Change course is accessible online, can you explain how do online resources support :
    - Different learning styles
    - Networking to share learning (assessment, learning activities etc.)
6. Explain the use of online resources in successfully administering curriculum content?
7. What are the advantages of using this approach for teaching?
8. Can you explain the challenges or barriers you experienced in using online resources in the course? (In terms of technical problems, students' ICT skills, lack of access etc.)
9. How did you help those students who were first-time users of an online learning approach, who may have experienced some difficulties in assimilating?
10. Describe your beliefs about using online resources as a means for teaching and learning?
11. What online tools do you predominantly use to teach the module? Why?
12. How does online learning inspire facilitators/lecturers to change their pedagogy? Explain
13. Do you collaborate with other facilitators in the Curriculum Academic Cluster via the online learning space? Explain.

14. What are your recommendations for those facilitators who do not implement ICT integration into their teaching and learning strategies?
15. Why are other facilitators hesitant or have not yet adopted using an online approach?
16. Explain the influence of online resources in assisting students with assessment tasks?
17. If students were physically absent for a lecture did they still log on to the learning space for the session? Explain.
18. What issues, if any, do you feel need to resolved for the use of online resources to be a more effective tool for teaching and learning at higher education?

APPENDIX G

SEMI-STRUCTURED OBSERVATION

(For critical Research Question Three)

What online resources do the facilitator and students use in the teaching and learning of Curriculum Context and Change?

This semi-structured observation is intended to help the researcher (observer) and those who are observed. The focus of this is to observe the mechanics of utilizing online resources in the teaching and learning of Curriculum issues.

CURRICULUM TOPIC: _____

DATE: _____ **TIME:** _____

No. OF STUDENTS: _____ **DURATION OF LECTURE:** _____

GENERAL OBSERVATION

Physical features:

- Type of lecture venue
- Lighting (Front/Rear)
- Equipment (White screen, projector, computers, other equipment)

Lecture venue arrangement:

- Position of the white screen (conducive to all students' visibility)
- Position of seating (how are students seated in relation to their own computers and the white screen, inclusive of face-to-face discussion?)

The researcher generated the following questions using Activity Theory and the Spider Web Curriculum to assist the observation process. These are represented in the following table.

Themes	Observation Questions
SUBJECT Facilitator and students	• What teaching strategies are used for learning?
OBJECT Content	• What teaching/learning materials are selected for the module? • Are these consistent with learning outcomes designed for the course? • Is the content relevant to students' expectations?
TOOLS Resources	• What resources are used to for teaching and learning of curriculum issues? (e.g. white screen, data projector, computer, university library, Learning Management System) • What online resources are mostly used? • What online resources are least used? • What learning theories (IW) are used to support teaching and learning?
OUTCOMES Learning outcomes	• Has the outcomes of the course for students been achieved? • What resources have been used to attain these?
RULES Assessments	• What specific resources did students use to complete their assessment tasks? • What teaching methods did the facilitator use to explain the assessment tasks? • Did students who were physically absent from the lecture attend the online discussions?
COMMUNITY Facilitator, students, academic faculty, technicians, researcher	• What roles does each of the members assume in order to support students' learning? • How do these support the learning outcomes of the module?
DIVISION OF LABOUR Technicians, Lan manager, students, facilitator, academic faculty	• Has the technical support team been effective during challenges/problems? • How long did it take to sort out computer/online related problems? • Was the Lan manager present or available in the event of technical challenges?

APPENDIX H

UNIVERSITY OF KWAZULU-NATAL

ETHICAL CLEARANCE APPLICATION FORM

2012

(HUMAN AND SOCIAL SCIENCES)

PLEASE NOTE THAT THE FORM MUST BE COMPLETED IN TYPED SCRIPT. HANDWRITTEN APPLICATIONS WILL NOT BE CONSIDERED

SECTION 1: PERSONAL DETAILS

1.1 Full Name & Surname of Applicant : **Ramona Budden**

1.2 Title (Ms/ Mr/ Mrs/ Dr/ Professor etc) : **Ms**

1.3 Applicants gender : **Female**

1.4 Applicants Race (African/ Coloured/Indian/White/Other) : **Indian**

1.5 Student Number (where applicable) : **205511283**

Staff Number (where applicable) : **N/A**

1.6 School : **Education**

1.7 Campus : **Edgewood**

1.8 Existing Qualifications : **B.ed (Honours)**

1.9 Proposed Qualification for Project : **B.ed (Masters)**
(In the case of research of degree purposes)

2. Contact Details

Tel. No. : **031 4098154**

Cell. No. : **076 172 1144**

e-mail : **ramona.budden@gmail.com**

Postal address (in the case of students and external applicants) : **19 Madho road, Shallcross Durban**

3. SUPERVISOR/ PROJECT LEADER DETAILS

NAME	TELEPHONE NO.	EMAIL	DEPARTMENT / INSTITUTION	QUALIFICATIONS
3.1 **Dr SB Khoza**	**031 260 7595**	**khozas@ukzn.ac.za**	**Education / UKZN**	**PhD**
3.2				

SECTION 2: PROJECT DESCRIPTION

Please do *not* provide your full research proposal here: what is required is a short project description of not more than two pages that gives, under the following headings, a brief overview spelling out the background to the study, the key questions to be addressed, the participants (or subjects) and research site, including a full description of the sample, and the research approach/ methods

2.1 Project title

An evaluation of the use of online resources by facilitators and students in the teaching and learning of Curriculum Context and Change: A case study at a higher education institution in South Africa.

2.2 Location of the study (where will the study be conducted)

University of KwaZulu-Natal (Edgewood Campus)

2.3 Objectives of and need for the study

(Set out the major objectives and the theoretical approach of the research, indicating briefly, why you believe the study is needed.)

- Identify and explain what online resources are being used by facilitators and students in the Curriculum X course.
- Explain how facilitators and students use online resources in the teaching and learning of Curriculum X.
- Explore the reasons why the uses of online resources are being implemented in the Curriculum X course in this manner.

Cultural Historical Activity Theory (CHAT) or Activity Theory (AT) will be used as a theoretical approach. CHAT has been employed as a theoretical framework in the design and development of technology-enhanced courses (Amory, 2006), relative for the study at hand. Central to the tenets of activity theory is the principle of tool mediation which describes human activity as driven towards an overall goal (object) and oriented by the use of tool (e.g. instruments or devices) (Wang, 2008). The initial relationship between subject-object-tool derived by Vygotsky (1933/1978) (Leont'ev, 1978 cited in Amory, 2006) has been expanded to accommodate rules, community and division of labour, designed by Engestrom (1987) (Karasavvidis, n.d). Wang (2008) confirms this ideology by way of a hierarchical structure of an activity system to include the five major components of subject, object, tools, rules and roles. Karasavvidis (n.d) acknowledges her activity system to involve the community and distribution of labour. The subject is a participant or a group of participants engaged in the activity and the object refers to the goal to be achieved (Wang, 2008).

2.4 Questions to be answered in the research

(Set out the critical questions which you intend to answer by undertaking this research.)

4. What online resources are being used by facilitators and students in the teaching and learning of Curriculum X course?
5. How do facilitators and students use online resources in the teaching and learning of Curriculum X course?
6. Why do facilitators and students use online resources the way they do?

2.5 Research approach/ methods

(This section should explain how you will go about answering the critical questions which you have identified under 2.4 above. Set out the approach within which you will work, and indicate in step-by-step point form the methods you will use in this research in order to answer the critical questions).

For a study that involves surveys, please append a provisional copy of the questionnaire to be used. The questionnaire should show how informed consent is to be achieved as well as indicate to respondents that they may withdraw their participation at any time, should they so wish.

Qualitative research is concerned with developing explanations of social phenomena that inform understanding about the world in which we inhabit and why things exist the way they are (Hancock, 2002), important for this study. Research in this field involves the opinions, experiences and feelings of individuals producing subjective data, relative to the ideology of the interpretive paradigm.

Context and Sampling : One B. Ed Hons facilitator and thirty five students of the Curriculum Context and Change course.
Purposive sampling involves selecting individuals or institutions to answer the research questions of a study, based on a specific purpose (Teddlie, 2007).

Methods of data collection / production

This research entails a multi-method study. The specific techniques for data collection / production that the study anticipates using will now be discussed (Document analysis, observation and semi-structured interviews).

Document Analysis

Document analysis is valuable for collecting qualitative data (Blundell, n.d.). Cohen, Manion and Morrison (2007) argue that documents are an integral source of information to a research. In identifying online resources used in the teaching and learning of Curriculum X, the documents to be analysed include student and facilitator files, the module outline, prescribed book for the module, articles for the module and assignments.

Online Questionnaire

An online questionnaire can revolve around various subjects or areas. The primary object of an online questionnaire is to derive information from a participant regarding their experience, views and suggestions. An online questionnaire contains specific questions based on the objective of the research that may have open-ended, close-ended or multiple-choice questions (Sample questionnaire, 2012).

Observation

Observation involves the researcher physically present at the place of research to observe what is actually taking place (Cohen et al, 2007). The researcher can report on things he/she has witnessed and record these, as opposed to what other people may have told her. The researcher will use unstructured observation that suggests a free description of what is being of observed (Christiansen et al, 2010). It is sometimes very difficult to capture everything being observed so the researcher may choose to focus on a few aspects.

Semi-structured Interviews

Semi-structured interviews are non-standardised and are commonly used in qualitative analysis (Kajornboon, n.d.). It is often preceded by observation, informal and unstructured interviewing of the topic of interest to create relevant semi-structured questions (Cohen, 2006). Consequently the interviewer and participants engage in a formal interview using an interview guide developed by the researcher. The interview guide contains a list of questions and topics that are addressed during the conversation in a particular order (Cohen, 2006). The interviewer is not restricted by the interview guide but may deviate to follow topical trajectories (Cohen, 2006). The study will interview one facilitator and thirty five students in a focus group at least three times. From the thirty five students four will be selected for one-to-one interviews at least three times. The facilitator will also be interviewed on a one-to-one basis three times. This will assist the researcher in determining the facilitator and students' experience in using online resources in the Curriculum Context and Change course.

Data Analysis

This study will use Guided analysis because units of analysis will emerge from both the theory (Bloom's Taxonomies) and data. According to Samuel (2009) guided analysis is flexible in terms of allowing researchers to modify principles of theories to accommodate important issues that emerge from the data. Units of meaning will be selected (De Vos, 1998). Concepts will then be grouped, related and categorised (Rice & Ezzy, 2000). Themes that emerge from data and theory will then be identified and recontextualised by referring to the literature (De Vos, 1998). Findings relating to identified themes will be reported.

2.6 Proposed work plan

Set out your intended plan of work for the research, indicating important target dates necessary to meet your proposed deadline.

Time Frame	***Guidelines***
7 March – 14 March 2012	Topic development/research questions
19 March – 30 April 2012	Research proposal (Draft)
5 April – 2 May 2012	Research proposal (2nd draft)
10 May – 14 June 2012	Submission of final research proposal/
July 2012 (last two weeks)	Defending of research topic/ethical clearance
September 2012	Literature review and theoretical framework
October 2012	Data collection period
November 2012	Analysis of data collection
January – March 2013	Write up and submission of chapters of the research
April 2013	Submission of all chapters after correction
May 2013	Submission of 1st draft report
June 2013	Submission of final research report

SECTION 3: ETHICAL ISSUES

The UKZN Research Ethics Policy applies to all members of staff, graduate and undergraduate students who are involved in research on or off the campuses of University of KwaZulu-Natal. In addition, any person not affiliated with UKZN who wishes to conduct research with UKZN students and / or staff is bound by the same ethics framework. Each member of the University community is responsible for implementing this Policy in relation to scholarly work with which she or he is associated and to avoid any activity which might be considered to be in violation of this Policy.

All students and members of staff must familiarize themselves with AND sign an undertaking to comply with the University's "Code of Conduct for Research".

QUESTION 3.1

Does your study cover research involving:	**YES**	**NO**
Children		**X**
Persons who are intellectually or mentally impaired		**X**
Persons who have experienced traumatic or stressful life circumstances		**X**
Persons who are HIV positive		**X**
Persons highly dependent on medical care		**X**
Persons in dependent or unequal relationships		**X**
Persons in captivity		**X**
Persons living in particularly vulnerable life circumstances		**X**

If "Yes", indicate what measures you will take to protect the autonomy of respondents and (where indicated) to prevent social stigmatisation and/or secondary victimisation of respondents. If you are unsure about any of these concepts, please consult your supervisor/ project leader.

QUESTION 3.2

Will data collection involve any of the following:	**YES**	**NO**
Access to confidential information without prior consent of participants		**X**
Participants being required to commit an act which might diminish self-respect or cause them to experience shame, embarrassment, or regret		**X**
Participants being exposed to questions which may be experienced as stressful or upsetting, or to procedures which may have unpleasant or harmful side effects		**X**
The use of stimuli, tasks or procedures which may be experienced as stressful, noxious, or unpleasant		**X**
Any form of deception		**X**

If "Yes", explain and justify. Explain, too, what steps you will take to minimise the potential stress/harm.

QUESTION 3.3

Will any of the following instruments be used for purposes of data collection:	**YES**	**NO**
Questionnaire	**X**	
Survey schedule		**X**
Interview schedule	**X**	
Psychometric test		**X**
Other/ equivalent assessment instrument		**X**

If "Yes", attach copy of research instrument. If data collection involves the use of a psychometric test or equivalent assessment instrument, you are required to provide evidence here that the measure is likely to provide a valid, reliable, and unbiased estimate of the construct being measured. If data collection involves interviews and/or focus groups, please provide a list of the topics to be covered/ kinds of questions to be asked.

QUESTION 3.4

Will the autonomy of participants be protected through the use of an informed consent form, which specifies (in language that respondents will understand):	**YES**	**NO**
The nature and purpose/s of the research	**X**	
The identity and institutional association of the researcher and supervisor/project leader and their contact details	**X**	
The fact that participation is voluntary That responses will be treated in a confidential manner	**X**	
Any limits on confidentiality which may apply	**X**	
That anonymity will be ensured where appropriate (e.g. coded/ disguised names of participants/ respondents/ institutions)	**X**	
The fact that participants are free to withdraw from the research at any time without any negative or undesirable consequences to themselves	**X**	
The nature and limits of any benefits participants may receive as a result of their participation in the research	**X**	
Is a copy of the informed consent form attached?	**X**	

If not, this needs to be explained and justified, also the measures to be adopted to ensure that the respondents fully understand the nature of the research and the consent that they are giving.

QUESTION 3.5

Specify what efforts been made or will be made to obtain informed permission for the research from appropriate authorities and gate-keepers (including caretakers or legal guardians in the case of minor children)?

Section 9(3) of the Bill of Rights states that no person may be discriminated against due … (Devenish, 1999). The researcher will therefore, throughout the research process, try to ensure that the rights of the lecturers being studied are not compromised in any way. Permission will be obtained from the lecturers and the university. Prospective participants will be given a letter of consent to sign, containing details of the study with the option of participating and / or withdrawing at any given stage of the research. Anonymity and confidentiality will also be guaranteed.

QUESTION 3.6

STORAGE AND DISPOSAL OF RESEARCH DATA:
Please note that the research data should be kept for a period of at least five years in a secure location by arrangement with your supervisor.

How will the research data be disposed of? Please provide specific information, eg shredding of documents incineration of videos, cassettes, etc.

I shall keep all hard copies of my data in a locked cupboard and use passwords to lock all the soft / electronic copies of my data to prevent any other person from accessing the data for the next five years. After five years I shall incinerate all the hard copies and delete all the soft / electronic copies.

QUESTION 3.7

In the subsequent dissemination of your research findings – in the form of the finished thesis, oral presentations, publication etc. – how will anonymity/ confidentiality be protected? "UKZN" will be represented by "A University in South Africa" "Edgewood Campus" will be represented by "Campus A" "Lecturers" from Edgewood will be represented by "Participant A1, A2, A3 and A4"

QUESTION 3.8

Is this research supported by funding that is likely to inform or impact in any way on the design, outcome and dissemination of the research?	**YES**	**NO** **X**

If yes, this needs to be explained and justified.

QUESTION 3.9

Has any organization/company participating in the research or funding the project, imposed any conditions to the research? YES/NO Answer is **NO**

If yes, please indicate what the conditions are.

SECTION 4: FORMALISATION OF THE APPLICATION

APPLICANT

I have familiarised myself with the University's Code of Conduct for Research and undertake to comply with it. The information supplied above is correct to the best of my knowledge.

NB: PLEASE ENSURE THAT THE ATTACHED CHECK SHEET IS COMPLETED

……
……..
SIGNATURE OF APPLICANT **DATE**

SUPERVISOR/HEAD OF SCHOOL

NB: PLEASE ENSURE THAT THE APPLICANT HAS COMPLETED THE ATTACHED CHECK SHEET AND THAT
THE FORM IS FORWARDED TO YOUR FACULTY RESEARCH COMMITTEE FOR FURTHER ATTENTION

DATE: ……..

SIGNATURE OF SUPERVISOR/ PROJECT LEADER :_____

RECOMMENDATION OF FACULTY RESEARCH COMMITTEE/HIGHER DEGREES COMMITTEE

The application is (please tick):

	Approved *
	Recommended and referred to the Human and Social Sciences Ethics Committee for further consideration
	Not Approved, referred back for revision and resubmission

* Senate has delegated powers to Faculty Committee to:
- Approve Undergraduate and Honours projects
- Approve Masters projects (if the required capacity exists within the faculty)

NAME OF CHAIRPERSON:
_____**SIGNATURE:**_____

DATE ……

RECOMMENDATION OF UNIVERSITY RESEARCH ETHICS COMMITTEE (HUMAN AND SOCIAL SCIENCES)

NAME OF CHAIRPERSON:_____**SIGNATURE**_____

DATE….....

UNIVERSITY OF KWAZULU-NATAL
RESEARCH OFFICE

HUMAN AND SOCIAL SCIENCES ETHICAL CLEARANCE APPLICATIOM FORM

CHECK SHEET FOR APPLICATION

PLEASE TICK

1. Form has been fully completed and all questions have been answered	**X**
2. Questionnaire attached (where applicable)	**X**
3. Informed consent document attached (where applicable)	**X**
4. Approval from relevant authorities obtained (and attached) where research involves the utilization of space, data and/or facilities at other institutions/organisations	**X**
5. Signature of Supervisor / project leader	**X**
6. Application forwarded to Faculty Research Committee for recommendation and transmission to the Research Office	**X**

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

17 September 2012

Ms Ramona Budden (205511283)
School of Education
Edgewood

Dear Ms Budden

Protocol reference number: HSS/0941/012M
Project title: An evaluation of the use of online resources by facilitators and students in the teaching and learning of Curriculum Context and Change: A case study at a higher education institution in South Africa

In response to your application dated 04 September 2012, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.

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

Yours faithfully

.....

Professor Steven Collings (Chair)
Humanities & Social Science Research Ethics Committee
/ms

cc Supervisor Dr SB Khoza
cc Dr MN Davids
cc Mrs S Naicker/Mr N Memela

Professor S Collings (Chair)
Humanities & Social Sc Research Ethics Committee
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Phone: +27 (0)31 260 3587/8350 **Facsimile:** +27 (0)31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za
ing Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS