

The feasibility of using audio podcast mobile technology to
teach research writing in open distance learning:
Case of University of South Africa

by

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Statement of originality

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I declare that : **The feasibility of using audio podcast mobile technology to teach research writing in open distance learning: Case of University of South Africa** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

SIGNATURE

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SUMMARY

The research aimed to assess the feasibility of using podcasts in mobile devices to teach research proposal writing for masters' students of University of South Africa. To aid in this, a general objective was developed which was supported by specific research objectives that guided the study. The research looked at the evolution of open distance learning (ODL) including the use of M-learning. I reviewed literature on the history of podcasts as an entertainment tool being highlighted as a revolution in the academic world especially in the area of distance learning.

To create a foundation to give strength to the use of podcasts, theories of education were evaluated and criticised to give reason and foundation for the use of podcasts as a technology to support teaching and learning in ODL. All major aspects of learning were traversed in the theoretical aspect. This is in a bid to assess the ability of the use of podcasts to meet the needs of the learners. A methodology for conducting the research that included the deployment of a pilot project for the research proposal writing module in year 2011-2012 class was developed and justified accordingly. The use of both qualitative and quantitative methods was necessitated by the objectives of the research. This was implemented at data collection and analysis stages of the research.

The analysis was fruitful and successful for that matter, giving reasonable backing to the proposal by the researcher of adopting the use of podcasts using mobile devices. The analysis deemed the pilot project successful for the period within which it was operated. Hurdles or challenges were present and the study gives them as majorly, the lack of sufficient skills to handle the content of the website, that is, generally, the use of the technology. Also, the study pinpoints that the availability of mobile devices is also a challenge that the students will face.

Recommendations were derived from the challenges and include a framework that should be used in creating a podcast support system that will be based on the findings to create a successful project. Regarding the objectives of the study, the conclusion that indeed it is feasible to use podcasts to teach research proposal writing in Unisa is valid.

Key Concepts: Open Distance Learning, Mobile Learning, Podcast, E-learning, Virtual Learning environments, Research writing, Teaching and Learning

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CHAPTER 1: GENERAL ORIENTATION, PROBLEM STATEMENT, RESEARCH METHODOLOGY, STUDY OUTLINE

This Chapter sets the context of the present research and provides an introduction to the thesis. It presents the research background and purpose. Next, it discusses the research problem and the research questions. It reviews the research methodology and research design. Finally, this chapter discusses the limitation of the research and contains a brief overview of the thesis' structure.

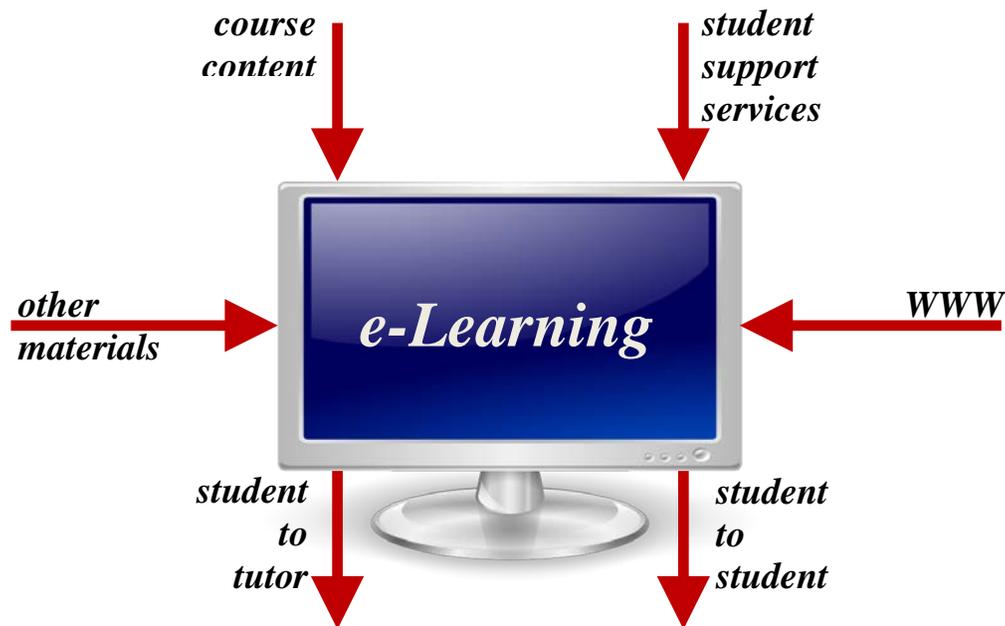
1.1. INTRODUCTION

The evolution of distance education covers the stages from correspondent studies that use paper and pencil mode of education to courses based on audio and video technologies and to courses based on the opportunities of the personal computer use. Just as the society made its way from the industrial era to the information era or electronic age, so the use of new digital technologies, Internet among them, provided the ground for e-learning (Keegan, 2002). "E-learning is defined as taking a course online using a modem, wireless, or cable connection to access academic course material from a computer, phone, or handheld device" (Governors State University, 2008). E-learning opened new opportunities of studying at learners' preferred time and pace allowing minimal attendance or requiring no attendance of on-campus classes at all, typically for distance education in combination with unprecedented opportunities of materials sharing and communication either with instructors or with other learners. Virtual learning environment is learning that takes place from a distance electronically. This can either be through E-learning or M-learning.

Figure 1 and 2 below specifically depict the collaborative learning and learner support that has guided this study, that is, the move from E-learning to M-learning through podcast on mobile in Open Distance Learning to teach research proposal writing. The computer screen below represents the study area - the equivalent of the lecture hall or classroom. The students are able to access teaching and learning via the computer that is connected to the Internet, for instance, E-Learning. The mobile phone screen below also represents the classroom or the lecture hall where

students can access content on any mobile device when connected or even when not connected through any mobile devices anytime anywhere.

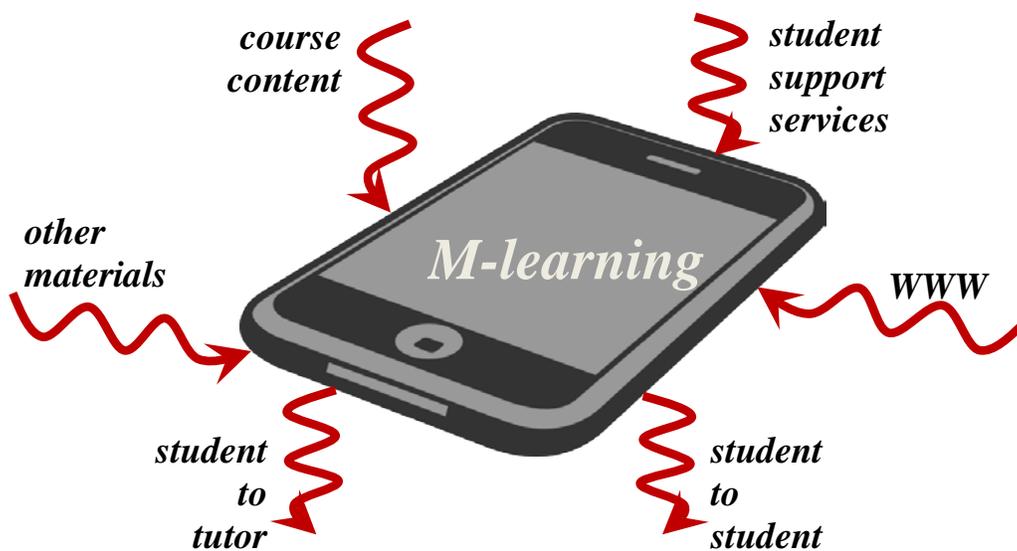
Figure 1: E-learning as Wired Virtual Learning Environment adapted from (Cobcroft et al. 2006: 13)



E-learning, despite offering a variety of innovative approaches to studying, has been found to be restrictive since it confines students to a fixed device at a definite place. The situation has been described as follows: traditional e-learning on the basis of desktop computers leaves many learners with limited accessibility to e-learning resources. Such learners, as Yuen & Wang observe (2004: 2248), are left “out in cold”. Hence, a need arises to significantly increase the accessibility of the process of learning “beyond the physical input of learning” (Shepherd, 2001). The fact is, digital portable devices (for example, laptops, digital cameras, mobile phones, tablet PCs, and portable digital assistants (PDAs, etc) have become increasingly popular recently, points at the fact that people are entering a new era – the mobile one. With the advancement of mobile devices, mobile learning or M-learning is becoming popular as a form of e-learning, representing its fourth generation (Nutt, n.d.)¹.

M-learning as a form of e-learning is winning its place in the educational sector today. This may be explained by the fact that it offers “rich interactivity, total connectivity and powerful processing” (Quinn cited in Shepherd, 2001, online). According to Yuen & Wang (2004), M-learning naturally fits into the notion of distance education due to its unique potential to adjust to the work-style needs of mobile workforce – many of whom are either current or future distance learners. Just as many such learners spend considerable time travelling in public transport, going on business trips, and having inactive moments throughout the day, M-learning opportunities allow them to learn along as they do some other tasks. This is possible through a variety of devices such as mobile phones and tablets, which keep their users connected in a continuous manner.

Figure 2: Wireless Virtual Learning Environment (Adapted from Cobcroft et al.(2006: 14)



Not completely satisfied with e-learning with its lack of social interaction and face-to-face contact (Carr, 2000), learners today require a more personal and also customised environment (Bolliger, Supanakorn& Boggs, 2010). This is especially true in the sphere of online distance education which focuses on learners’ capability to access necessary data in any place and at any possible time (Beldarrain, 2006). The e-learning specifics were improved in order to reduce students’ isolation, which came in the form of adding a variety of rich media components to distance learning (DL) courses aimed at students’ engagement into the environment that is both meaningful and active (Lee, Tan, & Goh, 2004).

1.2 PODCASTING AS RELATED TO M-LEARNING

Podcasting is a digital audio or video file that can be saved for playback on a portable media or computer. Specifically, podcasting was adopted and its role as an entertainment tool was refocused to a tool for learning. Consequently, a range of universities have adopted podcasting as an increasingly important learning tool (Copley, 2007; Vogt et al., 2010; Lee et al., 2008). Podcasting is related to M-learning as students can access teaching and learning in the form of audio or videos on the move using any mobile device like tablets ,Smartphone's or cell phones.

The interest to podcasting is being aroused by acknowledging its multiple benefits. First of all, podcasting allows learners to learn in any place and at any time whenever they find it convenient. Since current students value time above all because of being restricted in time due to full or part-time jobs, this benefit is especially appreciated. Learners may study at weekends, during lunch breaks and in the evenings (Evans, 2008). They are not restricted to place, either. Once a learner downloads a podcast, it may be used in a variety of places and settings: for example, on the bus, at the gym, in the car, etcetera. Podcasting on mobile technology offers a convenient way of grasping the material by students who have not fully understood it at class or missed the class. They are enabled to learn the material conveniently on their own (Tavales & Skevoulis, 2006).

Researchers say that learners are more receptive to acquiring material which comes in the form of podcast than in the form of the text in a textbook or a traditionally conducted lecture (Evans, 2008). Besides, podcasting has been deemed a more effective tool for review of course materials than notes. Based on the benefits mentioned above, podcasting in education is viewed as a portable tool, which is convenient and flexible (Cebeci & Tekdal, 2006; Evans, 2008; Copley, 2007; Vogt et al., 2010). In terms of benefits for students, podcasting has been found to increase satisfaction levels, reducing anxieties and increasing clearness (Ractham & Zhang, 2006; Chan & Lee, 2005; Miller & Piller, 2005).

1.3 BACKGROUND TO THE STUDY

Innovative technologies have been a matter of excitement and concern among teachers since they examine opportunities of effective use through integration into the curricula. Specifically, educational institutions today extensively use Internet-based technologies (for example, webcasting in e-learning) and look for ways to integrate the use of a variety of mobile technologies to enhance the efficacy of learning and communication for students. Similarly to e-learning, mobile learning or M-learning utilises innovative wireless technologies which help to make study activities both more accessible and more portable (Evans, 2008). These include MP3 players, mobile phones and PDA devices.

Podcasting is a recently developed alternative to webcasting as it allows automatic download of audio along with audio-video files (typically in MP3 format). While webcasting usually suggests Internet broadcasting of audio and video information in real time, podcasting allows downloading either on a PC or other digital device. Podcasts were first used for entertainment, as well as getting information. With time, their educational potential has been explored and their value has been acknowledged. Educational establishments worldwide are making use of podcasting technology, followed by significant investments of money in order for the whole range of file types to be provided to learners to be used for educational purposes (Mitchell, 2006). To illustrate, podcasting is used in numerous fields to include geography and education of teaching staff (Lim, 2006); nursing and healthcare (Maag, 2006a); computer science (Malan, 2008); astronomy and general science (Gay, Price, & Searle, 2006), and tourism (Dale, 2008). Research has shown many benefits of the audio podcasts in education (Campbell, 2005; Abt & Barry, 2007; Campbell, 2005; Huann, 2006; Atkinson, 2006; Lane, 2006; Nie, 2006; IMPALA, 2006; Rachtham, 2006).

One of the pioneering universities to support podcasting as an educational technology was Duke University, Durham NC, USA (Read, 2005). Duke University publicised 1650 iPods distribution of orientation-related podcasts. The initiative has been further developed by numerous other institutions across the United States and other countries (Apple Education, 2008). In Africa, University of South Africa is the first to initiate the use of podcasting in teaching and learning.

The University of South Africa (Unisa), is a distance educational institution, which is predominantly print-based with over 260, 000 students (Research report, 2010). Unisa has generally used printed study materials, including study guides in combination with tutorial letters created with the help of word processing, publishing graphic design, layout, editorial, as well as online learning. However, in the recent years there has been a drive for integration of technology into teaching at all post graduate courses rather than merely raising awareness about emerging technologies. In particular, podcasting was a technology introduced at the University of South Africa with the aim to support the ODL teaching and learning process.

The podcasts have the potential to bring positive changes to learning environments and provide motivation to students; it is now being explored in a variety of subject domains. However, little consideration has been given to exploring the benefits/challenges of using podcasting in teaching research proposal writing through ODL. Thus, a need arises in exploring the potential of this technology for ODL practices at the Unisa.

1.4 IDENTIFICATION OF PREVIOUS RESEARCH IN THE FIELD

Just as podcasting audio is thought to be the dominant content medium, its benefits have long been recognised in educational research. Specifically, according to Durbridge (1984), the advantage of audio for education is its capacity to impact cognition via clear instructions and touching the emotional aspects of the process of learning through immediacy and link to the teacher. A recent study (Woods & Keeler, 2001) found that the use of audio recorded by tutors when sending email messages increased students' levels of participation in various group activities along with fostering the given online community and boosting satisfaction with the experience of learning. Short audio clips in informal style are helpful while addressing the concerns and anxieties of university undergraduates in relation to the course and its assessment (Chan & Lee, 2005; Lee & Chan, 2007).

Studies of the potential of mobile technologies, such as PDAs, tablets, and Smartphones found that these mobile devices are particularly useful for supporting the studying process (Sharples, 2001), cognitive abilities and certain needs of various learners (Kukulska-Hulme & Traxler, 2005), personalised learning (Plant, 2001), and authentic plus situated learning experiences

(Sariola & Rionka, 2003). Also, the studies by Taylor et al. (2006) and Scanlon et al. (2005) found that the capacity of mobile devices in combination with benefits they bring to learners who are on the move are likely to create such learning opportunities that cannot possibly be created in traditional learning environments.

The research has indicated that instructors employ podcasting in two basic forms. The first form is repetitive (lectures records along with lecture slides and lecture demonstrations (Hurst & Waizenegger, 2006). The second form is supplemental which refers to such material as interviews in combination with outside resources (Norman, 2004). One of the recent important subjects of podcasting research has been its uses and objectives within the field of distance learning (Sloan, 2004; Fernandez et al., 2009; Oliver, 2005). Specifically Sloan (2004) found that podcasting facilitates self-paced learning, provides remediation for those learners who are self-paced, help those learners who have some disabilities (reading, for example), enriches the learning experience of the learners at advanced level and learners who are highly motivated, as well as auditory backup for the educational process which is multilingual. The study by Oliver (2005) found that podcasting positively influenced collaboration among transnational students. Also, the researcher found that podcasting is capable of improving learning through the reported increase in motivation and level of engagement among students. The research conducted by McKinney, Dyck, and Luber (2009) empirically proved that students who watched podcasts with lectures largely outperformed those learners that saw the lecture personally, on average. Having analysed the qualitative data, researchers found that if listening to the podcast was a repeated action, it turned to be the mediating factor for success.

While studies discussed above were predominantly small-scale projects, a large-scale IMPALA project carried out in the United Kingdom back in 2006-2008 explored a combination of issues related to podcasts' integration into the domain of formal higher education. Investigating the impact of podcasts on students' education and performance, the IMPALA project was carried out across five British universities: Leicester, Kingston, Nottingham, Royal Veterinary College, and Gloucestershire. It touched a variety of disciplines: Chemistry, English Language, Genetics, Sociology, Human Geography, Engineering, Physical Geography, Media and Communication, Veterinary Sciences, and Physics. The overall implementation of the IMPALA project included

the pilot study, the formulation of pedagogical design, as well as working out discipline-focused applications for podcasts during two semesters, focusing on students' studying experience on the basis of two semesters. The study also involved the dissemination of IMPALA project outcomes.

In the context of the present study, the IMPALA pilot study is especially interesting. Fothergill (2007) utilised podcasting in the process of teaching the *Optical Fibre Communication Systems* course, which is an undergraduate module for electrical engineers. The study focused on 30 second-year and third-year students who were campus-based and learned the material online through the use of the institution's Blackboard VLE (Edirisingha, Salmon and Fotherhill, 2007). The researcher substituted the real-life lectures with virtual ones, also met the learners three times to conduct a tutorial, which had optional attendance requirement. Fothergill (2007) started using weekly podcasts to supplement the course of online teaching with delivering updated data and advice as to the weekly activities. He also aimed at motivating the learners through the integration of pertinent news and elements of fun (e.g. jokes). The designed podcasts were used as complementing tools to the conducted activities of the module since they provided summaries and guidance for the next online sessions to his students. Specifically, every 10-minute podcast was placed on the VLE just as a study week began; this lasted for nine consecutive weeks. Typically, an introductory item of the included news was followed by the basic content section referring to the work done the previous week and extending this to the following week. Finally, fun activities were included which were related to fibre. These were also jokes or rap. The module being taught online has a potential for being adapted to the needs of distant learners.

The study by Rothwell (2008), within the IMPALA project, at Kingston University utilised podcasts to assist undergraduates to enhance their skills in the English module. Specifically, the aspects of making mid-semester presentations and preparing a portfolio at the end of the semester were the subject of study. Students that decided to take the module were of diverse background, with many speaking English as their second language. Since the professor felt that "physical" classes were not sufficient, she utilised podcasting potential to develop the skills needed by the students in relation to the assessment work. Rothwell designed a range of podcasts, with each of them lasting for 10 minutes. They could be accessed fortnightly through the website of the course. Generally, podcasts aimed at improving students' comprehension of

the basic concepts and issues of the English module; also they meant to positively influence their skills of revision, speaking, presentation and writing; plus, the podcasts offered learners regular advice on how to develop the portfolio to be passed at the end of the semester. It was found that the students benefited greatly from the use of podcasts, especially in terms of their providing aid in addition to what was offered by the advice centre and in relation to possibilities of individual choices of location, as well as time and placing learning activities in desirable sequences.

The approach of France and Ribchester (2008) applied to a course at the University of Chester was aimed at providing students with feedback to clarify the assessment. Consistent feedback remarks help learners better reflect on the results of the work done. Students were regularly provided with individual feedback on completed assignments, as well as with general feedback on the whole group's performance. Specifically, each learner got a sound file with two podcasts: one containing personal feedback and the other containing the group feedback. The evaluation revealed that students appreciated receiving the feedback.

1.5 STATEMENT OF THE PROBLEM

Distance learning has long been the object of persistent criticism based on claims of insufficiency of personal contact between learners and teachers, and among learners, which is thought to be an inseparable part of educational process (King, 2009: 1648). Podcasting as a means of representation of diverse and plentiful experiences provides a viable opportunity of authentic representation, greater interaction, more powerful expression, and personal empowerment (King, 2009: 1649). Hence, it is seen as the way of elevating the distance learning on a qualitatively new level. In this respect, integration of the educational technology of podcasting into the ODL process offers a solution to the problem that has troubled the minds of educational practitioners for years.

The College of Education at Unisa enrolls about two thousand masters' and doctoral students and it is responsible for supporting and developing research writing skills of these students. During the 2011/2012 academic year, the Senate Higher Degrees Committee mandated all the seven colleges at the University to initiate alternative strategies for teaching postgraduate student

research proposal writing. It is therefore in response to this call that the College of Education in collaboration with the Directorate of Curriculum and Learning Development (DCLD) developed the course for teaching and learning research writing using podcasting.

Furthermore, lack of formal teaching delivered to students enrolled into masters' programmes in the College of Education at the University of South Africa creates a challenge of developing research proposal writing skills. Students are supposed to rely on the instructions provided by their supervisors and information they find in suggested textbooks. However, this is often not enough. Lack of personal contacts with the teaching staff and lack of formal instruction lead to lack of motivation, which, in turn, leads to dropouts and attrition in the research module. Podcasting offers an opportunity of increasing the level of formal instruction and personal interaction within the study course.

Given the need to improve the teaching and learning in ODL in order to provide excellence at the University of South Africa, evidence-based research is needed in this particular area. Compared with other educational technologies, podcasting is a relatively new concept. Hence, it has not accumulated sufficient empirical foundation yet. Whereas the existing studies predominantly concentrate on the podcasts use in face-to-face learning, the issue of podcasting use in ODL lacks empirical findings. In relation to this, the paucity of empirical scholarly research into the students' perception and impact of podcasting within ODL postgraduate programmes serves the background and motivation for conducting the current research.

With regard to the aforementioned issues, the present study has been designed. Specifically, it addresses the problem of the audio podcasts used to provide teaching and learning in research proposal writing within the ODL context. The study investigates how distant learners perceive podcasting as a medium and what effect it has on students' performance at writing a research proposal.

While formulating the research problem, the findings of previous studies into podcasts use in higher education have been taken into account. Salmon and Nie (2008) suggest the following benefits of podcasting use:

- enhances flexibility and improved learner control;

- promotes better learner motivation, learner engagement and learner contribution;
- enhances cognition and learning;
- encourages innovative presentation of information;
- bring together learning locations separated from campus locations; and
- has ability to foster discussions during the learning process.

The current research addresses and establishes the extent podcast can be used effectively to teach research proposal writing in ODL at the University of South Africa.

Research questions

In the light of the stated problem a range research questions has been developed:

- What challenges do post graduate students face in research proposal writing within ODL context?
- To what extent do the learners find acceptable the use of podcasting on mobile technologies as a delivery medium?
- To what extent does the use of podcast on mobile technologies as a medium of delivery help students to achieve the outcomes expected from the course?
- How do students who have completed the research proposal writing course which integrates podcasting compare to students that did not have podcasting used as a medium of delivery regarding performance and drop-out rates?

1.6 AIM/S AND OBJECTIVES OF THE RESEARCH

The aim of the study is to determine the feasibility of using podcast on mobile devices to teach research proposal writing at the University of South Africa.

In order to attain the said aim the following objectives were proposed:

- identify challenges postgraduate research proposal writing students face in context of ODL;

- determine by means of students' narrative and online survey whether postgraduate research proposal writing learners find podcasts on mobile technologies an acceptable method of delivery;
- determine benefits of podcasting on mobile technologies to students in relation to research proposal writing achievements; and
- compare the performances and drop-out rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing course.

1.7 THEORETICAL FRAMEWORK

Audio podcasting technology sees greater adoption within the sector of higher education today (King, 2009: 1648). As a part of mobile learning, it takes its characteristics as “a rich, collaborative and conversational experience” (Naismith, Lonsdale, Vavoula & Sharples, 2004: 1). Existing theories of learning are helpful in considering the most useful applications of M-learning and podcasting in particular.

In mobile learning, audio podcasting may be considered in the context of the six major approaches to learning. As detailed by Naismith et al. (2004: 2), these are: the behaviourist approach, the constructivist approach, situated learning, collaborative learning, informal and lifelong learning, and learning and teaching support.

From the perspective of behaviourism, podcasting activities may be understood as activities that foster learning as a change in observable actions done by learners. It is known that, within the behaviourist theory, the best way to facilitate learning is that of offering reinforcement based on association between a certain stimulus and a particular response. Application of this principle to educational technology allows drawing the following parallel: stimulus comes in a form of computer-facilitated learning which presents the problem. It is followed by learner's contribution of certain response. Reinforcement is provided by the system's feedback (Naismith et al., n.d.: 3).

Within the constructivist approach, learners take part in activities which suggest the construction of new concepts or new ideas grounded on their knowledge, both previous and current. Learning is perceived as an active process and learners as active constructors of knowledge. Mobile devices are considered in terms of their capacity of embedding the learners in the realistic context together with enabling access to some supporting tools (Naismith et al., 2004: 3). The use of podcasting has been framed within this theory by Mendoza (2011, [online]). This theory is useful in terms of explanation of learning through podcasting as an experience in which students involve themselves in completion of the task, which means they evolve as constructors of their knowledge (Cruz & Carvalho, 2006).

The approach of situated learning considers learning within the context and culture which are authentic. Specifically, it is assumed that learning may be effectively enhanced if it occurs within an authentic setting. Just as mobile devices are deemed to be available in a variety of contexts, they can draw on specific context-aware applications in order to enhance the process of learning (Naismith et al., 2004: 3).

The concept of collaborative learning is based on understanding the latter as an activity promoted via social interaction. The foundation of this approach is Vygotsky's socio-cultural theory developed in the field of psychology back in 1978. Another important theory within the context is the activity theory (Engeström, 2002). Developing the theory by Vygotsky, Engeström proposed activity theory. Within the latter, the subject is seen as the one that refers to the sub-group or particular individual whose agency was selected as an analysis unit. The object is seen within the problem space in which the activity is directed towards. The latter is transformed into certain outcomes due to the use of physical and symbolic instruments. The community practices a labour division. This suggests tasks division in both horizontal and vertical ways. The task division is circumscribed by an elaborate system of rules, namely explicit or implicit conventions, regulations and norms constraining the actions which take place within system.

The constructs from the socio-cultural theory suggest that elements of podcasting may be more effective than other educational technologies. Considering podcasting within the cultural-historical activity theory, one needs to focus on its neo-Vygotskian theoretical framework (Engeström, 2002). This approach is useful in terms of its potential of contextualising the

technology in terms of existing strategies and available resources in ODL teaching and learning. As far as learners' cognitive development is concerned, Lev Vygotsky posits that skills and behaviour development is preceded by learning. Understanding developmental processes as those that lag behind learning ones, Vygotsky suggests that less developed /less experienced individuals successfully complete the tasks while being assisted by other people when they cannot complete them on their own. Learner-demonstrated knowledge, skills and behaviours developed with the help of other individuals are subject to the process of internalisation into these learners' schemata.

In terms of the neo-Vygotskian Engestrom's theory, podcasting is seen one of those tools used by a group of learners with the purpose of making sense of their task along with their environment and with the purpose of interacting with it (Engestrom, 2002). Within the context of the present research, this theory directs at exploring the effectiveness of podcasting as delivery tools in research proposal writing learning process.

The theory of informal and lifelong learning considers learning through activities that foster learning beyond a specific learning environment or outside the formal curriculum. Within this approach, it is considered that learning takes place all of the time and is impacted by an individual's environment and specific situations he/she encounters. According to Tough (1971), informal learning may come in two forms: intentional (through taking parts in deliberate learning projects) and accidental (knowledge is obtained from world observation, conversations, TV news, newspapers or some confusing situations) (Naismith, 2004: 3). Within this approach, learning is embedded into an individual's everyday life, which stresses the value of mobile technologies and audio podcasting in particular.

Along with the theory described above, the theoretical concept of learning and teaching support effectively explains the use of podcasting. It focuses on activities that help to coordinate learners and existing resources used for learning activities. Within this approach, mobile devices are seen as tools of providing course material to students, plus information about a particular course. This approach can effectively be applied to frame the use of audio podcasting by ODL students.

Because podcasting is a relatively new technology to be used in education, Diffusion of Innovation Theory may well be applied. In particular, this theory considers the process of what is known as technology diffusion and focuses on factors that impact the decisions of technology adoption. According to Rogers (1995), technology diffusion refers to the process by which an innovation gets adopted and accepted by individuals. In this respect, innovativeness is perceived as an extent to which a person makes innovative decisions not relying on other people's communicated experience (Midgley & Dowling, 1978). Developing this point, innovativeness is seen as individual's predisposition to act in a certain way irrespective of those stimuli that activate the behaviour (Foxall & Szmigin, 1999). In other words, innovativeness is considered an enduring trait of personality that can be found in all individuals to a bigger or lesser extent. First, it is adopted in a slow manner, and then increases the speed of diffusion with more and more individuals adopting it.

Finally, the user control theory plus cognitive load theory offer constructs which apply to the use of podcasting as an effective medium of delivery. In particular, the user control theory encourages freedom in learning, while the cognitive load theory focuses on cognitive load decrease (Eveland & Dunwoody, 2002). To be specific, the user control theory claims that if freedom in learning increases, the control felt by a user increases, which enhances learning. As far as cognitive learning theory is concerned, the larger cognitive burden felt by a user in the process of learning, the lesser is the learner's ability to retain the learned information (Brunken, Plass, & Leutner, 2003; Paas, Touvinen, Tabbers, & Van Gerven, 2003). While learning through the Web is seen as the one that possibly increases cognitive load, podcasting is viewed in terms of its enabling mobility. Just as podcasts may be listened to at any place and time, they are deemed to be not increasing the cognitive load, which is seen as more productive than learning through the Web.

1.8 RESEARCH DESIGN AND METHODS

For this research, quantitative and qualitative methods will be employed. "Quantitative research presents statistical results represented with numbers; qualitative research presents data as a narration of words" (McMillan & Schumacher, 2001: 15). Namely, the study involves the use of

interviews, conducting observation, administering questionnaires as research tools and conducting a case study.

The combination of quantitative and qualitative methods is known as a mixed-method approach. This approach has its strengths and weaknesses. However, the most important thing is the methods are used with the purpose of complementing one another. The background for using the mixed method approach may be found in Holliday (2002:4), who observes that ‘qualitative research does not pretend to solve the problems of quantitative research, but does not see them as constraints’. In addition, this approach was opted for on the ground of differences between the two methods. The quantitative methods allow researchers to focus on numbers of participants involved, while the qualitative one is employed with the aim of getting insight into participants’ behaviours, motivations, culture, lifestyles, concerns and attitudes.

Within the mixed-method approach, a combination of instruments for data collection has been used. For the purpose of the present study, five tools will be employed. This approach is known as triangulation. Cohen and Manion (2007:141) provide the following definition of triangulation: ‘the use of two or more methods of data collection in the study of some aspect of human behaviour’. In order to ensure proper triangulation with the aim of obtaining accurate results, data have been collected through the use of the following research instruments: the observation, the interview, the narrative, the case study and also the questionnaire.

The qualitative study’s strength is its capacity to produce complex textual descriptions of participants’ experiences in relation to a certain research issue. It allows taking into account the differences of opinion, also helping researchers to get insight into what participants think of how things are and how these things came to be like this (Gay & Airasian, 2001:18).

The use of case study method was based on the data obtained as a result of qualitative and quantitative approaches (Yin, 2009). As for the former, observation revolved around the effect podcasts’ use throughout the module during the period of 9 months. Observation of the students who registered for the research proposal writing course module took place twice a week. It focused on how they accessed the podcasts, whether they did it, and if yes, how often they did.

The students were interviewed with the purpose of clarifying the reflections written by students as narratives (Clandinin & Connelly, 2000). The researcher used the interviews shortly after posted narratives (with reflections) using the comment tool on the IONO website.

The quantitative methods were represented by the use of questionnaires distributed electronically (via e-mail) to students (at the end of the semester) and by collecting the performance data of students based on data of evaluation of academic achievement on the course.

The use of observational data was justified by its focus on collecting live data. Also, the researcher had an opportunity to see what was happening *in situ* instead of gathering second hand data. Theoretically, observations, as asserted by Morrison (1993:80), make it possible for enable the author to get data of both physical and human settings, as well as the interactional and programme settings (Cohen et al., 2000)

The tool of the interview, according to Walford (2001:93), provides important data. Walford states many reasons for using the interview as a part of qualitative research procedure (2001: 92-93). Firstly, it allows generating a plenty of data in relation to the study in a prompt manner, enabling people to express feelings about a range of issues. Secondly, interviewing provides a chance for the author of the research to ask such questions that might not be generated in any other situation.

With the help of the questionnaire, as Dornyei (2003:9) puts it, the researcher is empowered to obtain much information in restricted time period via questionnaires administration among the participants. To support, Cohen and Manion (2007:245) argue in favour of this research tool saying that the usefulness of the questionnaire is determined by the fact it can possibly be distributed without the researcher's physical presence.

The data analysis procedure involved the use of different analytic approaches. Within the frame of interpretive analysis, the researcher based the results on the grounded theory (Strauss & Corbin, 1990) and thematic content analysis (Smith, 1992). In addition, a quasi-statistical style was utilised in order to determine certain categories and codes which were applied to the given data in a mechanistic way, with the purpose of yielding quantifiable indices (Blanche & Durrheim, 2002).

Given the fact observation refers to the instruments of qualitative approach, observation analysis is subject to the principles of qualitative data analysis. It is explained in the following way: “working with data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others” (Bogdan & Biklen, 1982: 145). In this research, the author utilised the inductive approach to data analysis, which requires focusing on the crucial themes that are found to be emerging of collected data (Patton, 1990). In particular, the researcher placed the collected raw data into certain meaningful categories using logics. These were then examined with the holistic approach, and arranged in such a way they could be communicated to people.

The narratives and interviews, which are similar to observation qualitative research methods, underwent the analysis grounded on same qualitative analysis principles. In particular, the content of students’ responses obtained in written narratives and during interview was closely examined. Then, what the researcher considered the major themes were singled out. In the theoretical literature, this way of analysis is identified as the content analysis (Pawney & Watts, 1987). In addition, for the qualitative data analysis, the Atlas-TI was used. For the quantitative analysis, the SPSS software was employed.

The case study involved description and analysis of the course called “Research Proposal Writing” (module code MPEDU 91). It incorporated the data of both quantitative and qualitative research. The online course was designed which aimed at developing students’ competence in proposal writing for the future research, with the help of podcasts. Podcasts designed for this very course were sent to assist students who enrolled for the Masters’ in Proposal Writing Programme (the first year). Since it is the College of Education, the target population was mostly teachers. Since the success at this course determines whether students will be able to go on to write their masters’ dissertation, it is rather important in their curriculum. Students used various mobile devices to listen to podcasts: iPhones and Androids, iPads, or iPod touchers. The podcasts got uploaded on <http://iono.fm/channel/1319> website and students were notified via text messages/e-mails that the podcasts had already been uploaded.

1.9 SIGNIFICANCE OF RESEARCH

Just as ‘the value of deploying mobile technologies in the service of learning and teaching seems to be both self-evident and unavoidable’, it becomes clear that mobile learning is a steady educational option (Wagner, 2005: 42). Wagner identifies the driving forces that motivate the expansion of mobile learning as follows: the increase in the number of wireless devices, networks, and services; demands for improved mobile experiences by the consumers; people’s desire to be connected “anytime, anywhere” (Wagner, 2005: 49-50). There is a need to respond to the impulse of students to learn on the move in a digital and nomadic manner, which is evident in a variety of institutional sectors. However, it is not just a mere response to the students’ needs, but a serious transformation across the sections in higher education, including changes in the curriculum and preparation of “our physically sedentary campuses [for] embracing the digitally nomadic swarms of arriving students” (Alexander, 2004a: 34).

Addressing these issues, the research is significant in three major ways. First of all, it will help students enhance their research proposal writing skills and boost their motivation. Next, it will supposedly help teachers advance their skills of technology use for the purposes of teaching and learning. To add, the research will be helpful in terms of providing academics with an insight into how students utilise audio podcasts in the process of learning. This data will presumably be used as a basis for better integration of podcasts into other ODL courses teaching.

1.10 LIMITATIONS AND DELIMITATIONS

One of the limitations of the present research is that the use of podcasts was not controlled. So, students could have avoided listening to the podcast. Besides, language difficulties were a problem for some students, so they did not get information the way it was intended to communicate.

As for the study’s delimitations, the study focused on the narrow subject and did not discuss other important issues, e.g. costs of podcasts production or students’ attendance (the study focused on ODL students).

1.11 DEFINITION OF TERMS

Term	Definition	source
1. MPEDU 91	Master in Research proposal writing	No source
2. Open Distance Learning	ODL is a multi-dimensional concept aimed at bridging the time, geographical, economic, social, educational and communication distance between student and institution, student and academics, student and courseware and student and peers. Open distance learning focuses on removing barriers to access learning, flexibility of learning provision, student-centredness, supporting students and constructing learning programmes with the expectation that students can succeed;	UNISA Open distance learning policy document
3. Mobile learning	“conception of the concept as “learning that arises in the course of person to-person mobile communication	Nyíri’ (2002)
4. Podcast	“digital recording of a radio broadcast or similar programme, made available on the Internet for downloading to a personal audio player.” “an audio file (e.g. MP3) posted to a website and made available for download”.	The New Oxford American Dictionary (p1348) Harris (2006), DeVoe (2006), and Balleste, Rosenberg, and Smith-Butler (2006),
5. E-learning	“E-learning is an online education defined as the self-paced or real-time delivery of training	(Lee & Lee, 2006).

	and education over the internet to an end-user device”	
6. Virtual Learning Environments	Virtual Learning Environment." A VLE is a virtual classroom that allows teachers and students to communicate with each other online. Class information, learning materials, and assignments are typically provided via the Web. Students can log in to the class website to view this information and may also download assignments and required reading materials to their computers. Some VLEs even allow assignments and tests to be completed online.	Accessed from Techterms.com/definition/website

1.12 STUDY OUTLINE

Since research study is a human activity, it is inherently purposeful. This means that all steps need to be meticulously planned before they are taken. Planning is known to be an organised attempt to choose the best possible alternatives to achieve certain objectives. Also, planning refers to reasoning about the ways the study has to be carried out, as well as to determining possibly the best mode of action (Waterston, 1965: 8). Hence, a successful thesis has to necessarily be well-planned and well-structured. To support this view, Hofstee, writes that “dissertations are a particular form of writing, with a particular purpose and audience in mind. That makes them subject to certain predictable rules.” (Hofstee, 2006:35).

The form that the thesis takes is basically the representation of a common dissertation structure in a schematic way. As for the present research, the structure of the thesis can be identified as the classic structure for PhDs. It needs to comprise five consecutive chapters at least, which are the

Introduction, followed by Literature review, followed by Methodology, followed by Body, and finally ending with Conclusion (Hofstee, 2006: 36).

The present thesis has been structured in the following way:

Chapter 1: This Chapter sets the context of the present research and provides an introduction to the thesis. It presents the research background and purpose. Specifically, it discusses the research problem and the research questions. It reviews the methodology and research design of the research. Finally, this chapter discusses the limitation of the research and contains a brief overview of the dissertation.

Chapter 2: This Chapter sets the conceptual base to the study. It consistently develops the topic through review of pertinent up-to-date sources. Specifically, the problem of podcasts use in learning is examined in a variety of aspects to work out the context for the empirical research. It focuses on the benefits and challenges of podcasting in university settings. Besides, findings on podcasting use in distance learning are discussed with focus on recently published works. Firstly though, the Chapter offers an overview of M-learning and historical background to the use of podcasting in education.

Chapter 3: This Chapter focuses on building up a theoretical framework of the practical research and also completes the theoretical basis of the empirical part of the study. Theoretical background to the use of podcasts in higher education in general and in distance learning in particular has been significantly developed of late. Still, there exist a number of gaps in this area of research.

Chapter 4: This Chapter provides an explanation and justification to the design, methods and process of data collection that was selected. It discusses the specifics of the study design and focuses on the sampling procedure, describes data gathering process, discusses the instruments used, and explains the validity and reliability of the research. The Chapter justifies the use of a mixed method design and explains the reasons behind using of both qualitative and quantitative research designs and the following data collection tools: Online Observations, OnlineReflections (through comment tool, email and discussion forum), Online Survey (electronic an print questionnaire), and focus group interviews.

Chapter 5: This Chapter provides an explanation and justification to the design, methods and process of data collection that was selected. It discusses the specifics of the study design and focuses on the sampling procedure, describes data gathering process, discusses the instruments used, and explains the validity and reliability of the research. The Chapter justifies the use of a mixed method design and explains the reasons behind using of both qualitative and quantitative research designs and the following data collection tools: Online Observations, Online Reflections (through comment tool, email and discussion forum), Online Survey (electronic and print questionnaire), and focus group interviews.

Chapter 6: The Chapter gives an interpretation of what the analysed data have regarding this research as pertains to the research questions. The Chapter will give results from the various data collection instruments and give an overall interpretation showing how each research question was answered.

Chapter 7: Concluding this study, this Chapter provides a general overview in order to demonstrate that the aims originally expressed in Chapter 1 has been addressed and achieved. The researcher summarises the study, highlights conclusions arrived at consistent with the literature study discussed in Chapter 2. In addition to this, the Chapter goes through the empirical inquiry done in the study by means of observations, interviews and document analysis in Chapter 4. The final Chapter also suggests recommendations including possibilities of future research. It also presents a model/framework for ongoing training to complement the recommendations.

1.13 CONCLUSION

This chapter has attempted to explain and discuss the contemporary role of podcasting as a tool of M-learning and an effective means of learning delivery in higher education. On the ground of the overview, an assumption was made that podcasts and audio podcasts in particular, will significantly contribute to the achievement of desired results among students of different levels and different specialisations. Students whether on campus or off campus are expected to actively utilise audio podcasts and enhance the process of their skills development. In the chapter, it was deduced that podcasting activities provide means for learners of higher education institutions to take part more meaningfully and effectively in the learning process. The role of podcasts also

enhances non-native learners' representation, facilitates the learning progress and development of self-assessment skills, and helps to improve the quality of the studying process in such a way that each learner may feel a part of the learning community.

Further, it has been deduced that along with the current changes and transformations in students' lifestyle, the way higher education is delivered is also changing. No longer is it acceptable that only print materials are used to supplement the learning process. Although M-learning and podcasting are relatively new phenomena in education, and their integration into the studying process requires more efforts and additional funding, the results of evidence-based studies provide proof that the efforts are worthwhile. The benefits of podcasting have been seen in their capability to be accessed at any time and in any location, provide sort of face-to-face communication, and personalised approach, as well as allow students return to the material as many times as they wish. In the chapter, the author identified the problem that the course of research proposal writing is especially in need of some qualitative educational changes. Podcasting has been viewed in terms of its capability to cater for the needs of distance learners at Unisa. Therefore, the objectives of the study was to identify challenges postgraduate research proposal writing students face in context of ODL; determine by means of students' narrative and online survey whether postgraduate research proposal writing learners find podcasts an acceptable method of delivery; determine benefits of podcasting to students in relation to research proposal writing achievements; compare the performances and drop-out rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing course. Thus, both educators and learners will be able to participate in the studying process more effectively and productively and to solve the arising problems and questions on the chosen ODL course. The study's limitations have been explained, plus the author has outlined what she intends to conduct and how. Furthermore, the general outline of the thesis has been provided. The next chapter provides literature review for the present study and explores the major principles of podcasting use in the learning process in an ODL context.

CHAPTER 2: LITERATURE REVIEW

This Chapter sets the conceptual base to the study. It consistently develops the topic through review of pertinent up-to-date sources. Specifically, the problem of podcasts use in learning is examined in a variety of aspects to work out the context for the empirical research. It focuses on the benefits and challenges of podcasting in a university setting. Besides, findings on podcasting use in distance learning are discussed with focus on recently published works. Firstly though, the Chapter offers an overview of M-learning and historical background to the use of podcasting in education.

2.1 INTRODUCTION

The use of podcasts presents a very interesting subject of analysis that has solicited varied research and arguments from different researchers. ODL has seen a transfiguration from print use to vary high-tech solutions that have varied acceptability and use worldwide. Among the subjects of interest in regards to this study is the use of mobile devices inODL. This is referred to as M-learning. It is one of the pioneer works of mobile technology in learning. The entry of podcasts as an instrument of disseminating learning material is discussed in the following topics in this chapter. Among elements apart from the entry stages of podcasts use in education is final acceptance into the universities.

The section also develops a critic of literature that exists in the use of podcasts to derive justification for the suggestion of the pilot project in Unisa. In an overview, the use of the method and success stories forms the major source of review to give details of the positive effects of the use of podcasts as in the topics that follow in this chapter (Ally, 2004).

2.2 MOBILE LEARNING IN EDUCATION

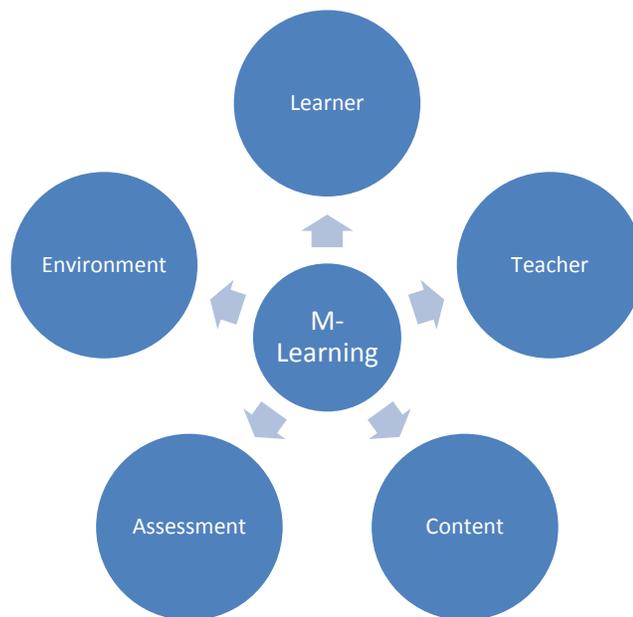
The specifics of using podcasts in distance education are closely related to the specifics of mobile learning (M-learning) and the educational potential of mobile technology. Under the term of M-learning, scholars understand the delivery of e-learning materials through the use of

specific built-in learning strategies, which is done on mobile computing devices with the purpose to enable access anywhere and anytime (Ally, 2004).

M-learning has been defined as a certain type of a learning model which allows students to get and use learning materials through the use of the Internet and portable devices anywhere and anytime (Ozdamli & Cavus, 2011; Lan & Sie, 2010). These handheld, portable and wireless devices include iPods, tablets, PDAs (personal digital assistants), mobile phones, laptops, and etcetera. Along with the widespread use of the mobile devices in a variety of spheres, some of which are library research, banking, tourism, economy, and entertainment, they have gained recognition as learning tools in education (Cavus, 2011; Hew, 2009; Lakhali et al., 2007).

M-learning has been described by Laurillard & Pachler (2007) as a digital support of learning activities which are active, productive, communicative, collaborative, and investigative, and take place in remote places; it has been said to be a source of an array of environments where teachers may operate. According to Ozdamli & Cavus (2011), basic ingredients of M-learning include: teacher, learner, environment, content, and assessment (See Figure 1).

Figure 3: M-learning Basic Elements



(Adapted from Ozdamli & Cavus, 2011)

The fundamental characteristics of M-learning include the following, that:

- it is being spontaneous and ubiquitous or, in other words, providing learning opportunities anytime and anywhere (Cavus & Ibrahim, 2009; Ozdamli & Cavus, 2011);
- has the possibility of being delivered through devices of portable size (Ahonen et al., 2004 cited in Ahonen, 2005);
- it is being used in a blended model of learning (this refers to combination of classroom instruction and mobile learning) (Bonk & Graham, 2006);
- provides privacy (Virvou & Alepis, 2005);
- provides interactivity (Sharples et al., 2005);
- engages in collaboration (Uzunboylu, Cavus, & Ercag, 2009); and
- provides instant information (Eteokleous & Ktoridou, 2009).

One of the reasons for increasing educational use of m-technology is its ability to provide the so-called 'just in time' learning, which is about enabling learners to study at unplanned free time as they carry mobile devices with them (Vavoula & Sharples, 2008; Evans, 2008). Besides, due to recent advances in mobile applications, m-technology offers access to an unlimited variety of diverse learning materials and resources (Huang et al., 2009). Benson et al. (2002) point out that m-technology gives feelings of freedom to students and allows them to make the learning process more flexible. To add, accessibility of learning is another benefit that m-technology is said to provide (Yi et al., 2009).

Research into M-learning has been blooming as the popularity of the educational use of m-technology is growing. Specifically, effect on teaching with the help of mobile technology has been the subject of investigation. In particular, Ally et al. (2009) describe the results of a research project which integrated the use of mobile technology to teach English grammar to ESL students in three different institutions. The majority of participants of the study indicated positive effect of using the cell phone in their studies of English grammar. They noted that the way of

accessing ESL materials was flexible and unrestricted, so they could use them anytime (whenever they had spare moments) and anyplace (bus stops, for example) (Ally et al., 2009).

Next, mobile technology has been recognised useful for delivery of a course in computer science (Ally & Stauffer, 2008). Studying materials were placed online along with the survey which provided students' feedback on the course. The majority of students (out of the total number of 400 persons) indicated that they found it beneficial to access course materials online using a mobile device. Besides, learners noted they appreciated flexibility and convenience of the learning model (Ally & Stauffer, 2008).

One of the methods associated with M-learning today is podcasting. Specifically, Bell et al. (2007) and Heilesen (2010) consider podcasting as a supplementary method in the context of recent mobile learning technologies and apps.

2.3 HISTORICAL BACKGROUND TO USE OF [PODCAST IN EDUCATION

Podcasts are based on the audio technology, which has long been popular in education. According to Hawkrigde and Robinson (1982), learners had then used radio for education for around a century. They were also able to take advantage of audio recordings. The major benefits of audio technology use in education were listed by Durbridge (1984), who found that students generally enjoyed learning by means of listening to the radio because they felt they learnt well from the sound which had been previously recorded. Students liked listening to talks devoted to specific parts of their courses. Besides, they found it useful to listen to certain tasks while doing their lab works or having workshops. In particular, listening to experts' debates and opinions in the selected field was useful, as well as being encouraged by hearing the voice of some professional in the field that they knew and thought highly of.

Among recent findings, Smith (2005) found that learners respond differently to audio material than to text. Smith points out that voice in an audio recording poke through and leave learners relieved of the oppressive environment represented by text and pictures. Besides, voice is personal and it is capable of bringing information to life.

Radio had been extensively used for educational purposes before the advent of podcasting. The examples of how radio was used in primary well into higher education with focus on formal and

informal curricula have been provided by Young et al. (1980), Bates (1981), Bates (1984), Power (1990), Yeats and Bradley (2000), Perraton (2006). These studies explored the use of radio on campus and in distance learning embracing the audiences in both developed and developing countries. While radio proved to be quite effective, it was still inconvenient in some way since it was not personal. In particular, it addressed the audiences dispersed over huge areas experiencing difficulties in using radio at a given air time. That is why cassettes became popular among learners since they enabled controlled as well as didactic instruction (Bates, 1981).

The success of radio and tape recordings meant that audio technology was beneficial for the learning process, particularly for distance education. However, as Power observed, the use of audio had generally been “undervalued” (Power, 1990:43). Some factors accountable for this were inflexible character of broadcasting (in case with radio), lack of facilities for easy audio use, in particular for distribution, production, playback and recording. However, recently the opinion that audio had been neglected and insufficiently used was expressed by Lee & Chan (2007a).

In this context, the advent of podcasting is seen as audio’s second life. Specifically, using the potential of audio, podcasting offered a wide range of educational opportunities so that audio became a popular learning medium. According to Schlosser and Burmeister (2006), these days we witness the renaissance of audio technology.

2.4 PODCASTING IN UNIVERSITY CONTEXT: CURRENT STATE OF AFFAIRS

Podcasting has received a number of definitions in the modern scholarly literature exploring the subject. The very term ‘podcasting’ is derived from the portable music player designed by Apple. It was coined by Ben Hammersley, a journalist, back in 2004 in his attempt to find a term to refer to listening to files through a portable media player (Hammersley, 2004). Indeed, Rosell-Aguilar (2007) describes the term podcast as a combination of two words: iPod, which is the name of a portable media player and broadcast. The technology for production of these audio files and their distribution has been known since the very beginning of the century (Ulmer, 2006). Lazzari (2009) defines podcasting as a method of distribution of media files, be it audio or video files or

series of files, through the Internet with subsequent playback on portable media devices, such as iPods, PCs, laptops, etcetera.

Studies provide data that over 80% of college students in the United States utilise at least one of the popular portable audio devices which download and play audio and/or video files (Lum, 2006). In relation to this, it has also been found that many modern students co-construct their social reality as well as set norms for taking part in activities through numerous information sources they find online. Besides, students have been found to display digital fluency by operating multiple media devices simultaneously, for example, mobile phones, television, and the Internet (Hsi, 2007). Interestingly, 75% of first-year students at Duke University in the UK who have been given free iPods reported that they utilised the media devices in one or more courses and found them useful since they enabled to replay required passages of lectures on demand (Read, 2005).

The popularity of podcasting with college students both for entertainment or exchange/retrieval of necessary information has led scholars to exploring the benefits of this tool for education particularly, for M-learning. Just as today podcasting is extensively used by educators in practice, its benefits for distance learning as well as campus-based learning are the subject of research by modern educators, with academic research exploring benefits and obstacles of using podcasting in both on and off-campus education (Concannon et al., 2005; Copley, 2007). The study by Brown and Green (2007) provides data about the use of the media technology in the form of audio and video recorded lectures at such reputable institutions as Yale, UC Berkeley, MIT, and Stanford, which are made available to students through the service that is password-protected or through the use of iTunesU derives from Apple's iTunes Store.

As for the use of podcasting in campus-based education, it suggests instructors distribute audio recordings of lectures with the aim to give students an opportunity to review them after some time (Laing et al., 2006). In this respect, podcasting has been found to “improve communication and learning access for many student populations” (Walls, Kucsera, Walker, Acee, McVaugh, Robinson, 2010: 371). At the same time, scholars disagree about the fact that podcasting has a universally positive impact on education. Specifically, studies by Lazzari (2009) and Deal (2007) found that podcasting has a negative impact on the grades received by students. Another study

conducted by McKinney, Dick and Luber (2009) revealed the positive effect of podcasting given students take notes, repeatedly listen to the podcast and in general, acted in a manner similar to the way they do at the lecture sessions.

As for the nature of podcasting technology in education, Copley (2007) compares podcasting to generating slides with the lecture contents in Power Point or pdf formats. He describes podcasting as a simple, economical and audio file size-efficient educational method, which is perceived as a very positive experience by campus-based students. At the same time, Copley questions the benefits of podcasting recording of lectures for M-learning, stating that for effective podcasting use in distance learning, a more sophisticated approach needs to be considered, with stand-alone podcasting materials resembling briefings to classes (Copley, 2007: 398). Classifying purposes which podcasts are used with in a classroom setting, Heilesen (2010) singles out the following: substitutional (when podcasts are used to substitute classroom lectures), creative (this refers to students' podcasts) and supplementary (podcasts are used as additional materials to instruction that takes place in classrooms).

In the academia, podcasts classification has been developed. McGarr (2009) singles out three categories of podcasts: substantial (utilised as substitutes for teaching during classes), supplementary podcasts (provide summaries of what has been taught in classes and some additional material) and creative podcasts (these podcasts generated by learners). In their turn Carvalho, Aguiar, and Maciel (2009) suggest that when applied to higher education, podcasts are subject to the taxonomy which considers podcasts' types (informative, producing guidelines, feedback, or authentic materials), medium (either audio or video), length, style (formal/informal), author, and a podcast's purpose.

To add, Walls et al. (2010) point out that podcasts are used by instructors in two distinct forms: repetitive (this refers to lectures records, which includes demonstrations and slides) and supplemental (this deals with external materials provision). Walls et al. (2010) indicate that podcasting may effectively be used to facilitate of self-paced process of learning, strengthen distance learning, to provide remediation, as well as support for a variety of learner types. In the research by Harris & Park (2008), one finds that the use of podcasting by instructors needs to be

based on four variables of teaching, technology, service and marketing if one wants to adopt the method in an integrated, creative and expanded manner.

Students' attitude to podcasting has been the subject of continuous research. Specifically, Chan and Lee (2005) acknowledge the role of podcasting in reducing the anxiety experienced by students. In relation to this, Miller and Piller (2005) found that using podcasts as supplementary material increases satisfaction among students. Next, Cebeci and Tekdal (2006) argue that podcasting increases the accessibility of materials to a wider diversity of students.

In their turn, Baird and Fisher (2006) acknowledge that podcasting can be an effective means of enhancing students' reflection and involvement. Edirisingha and Salmon (2007) concluded that the use of podcasts makes the learning process more informal and engaging. In relation, Boulos, Maramba, and Wheeler (2006) explore ways to use podcasts in combination with blogs and wikis to improve the learning process in the sphere of health education.

Research into the use of podcasts in higher education has found that the latter is useful for slow learners, as well as learners with disabilities and foreign learners enrolled in distance education programmes or blended courses (Sloan, 2005; Walls et al., 2010). Besides, podcasting has been found to increase students' motivation (Bolliger, Supanakorn, & Boggs, 2010), and facilitate understanding of theoretical aspects of the subjects (Lazzari, 2009).

Podcasting has been found to have a learning outcome on language education. Specifically, learning of foreign languages has been found to benefit from utilising this tool within administrative and special lecture purposes (Vogele & Gard, 2006). As for the former, this refers to general information and guidance for students; the latter is related to guest and commencement lectures, etcetera.

Rosell-Aguillar (2007) found that the use of podcasting in the domain of learning languages is well supported by the following theories: constructivism, authentic input for learning a foreign language, as well as informal and lifelong learning. In this respect, Rosell-Aguillar (2007) names two types of podcasts used in language studies: podcasts that contain authentic material produced (and used) by native speakers (for example, news), and podcasts that have been designed to fit language courses. Podcasts produced for language courses are divided into those prepared for

stand-alone language courses and additional activities and supplementary activities for particular classes, as well as independent audience (Rosell-Aguillar, 2007).

It has been found that a certain array of defining characteristics of podcasts allows them to effectively support language education. These are an opportunity to listen to one podcast repeatedly, monitor the speed of the recorded feedback, possibility to listen to podcasts anywhere and anytime given the fact that users own necessary portable devices, unrestricted individual choice of listening material, as well as authentic input which is free and easy to access (Heilesen, 2010).

Thanks to its specifics, podcasting has been found to benefit language studies in the following domains: improvement of aural skills (Lee, 2009), pronunciation and speaking skills (Powell, 2006), cross-cultural competence (Stanley, 2006), and motivation (Stanley, 2006). Besides, a recent study by Rahimi & Katal (2012) found that podcasting as an M-learning tool helps language learners to grasp with unfamiliar vocabulary, complex rules and increases their listening self-efficacy and motivation. Scholars recommend that patterns of podcasting integration in higher education syllabus should be considered and developed due to the effectiveness of this innovative technology among learners, in particular language learners (Rahimi & Katal, 2012).

2.5 BENEFITS OF PODCASTING FOR HIGHER EDUCATION

Just as podcasting audio is thought to be the dominant content medium, its benefits have been recognised in educational research. Specifically, according to Durbridge (1984), the advantages of audio for education are its capacity to impact cognition via clear instructions and touching the emotional aspects of the process of learning through immediacy and link to the teacher. A recent study (Woods & Keeler, 2001), found that the use of audio recorded by tutors when sending email messages increased students' levels of participation in various group activities along with fostering the given online community and boosting satisfaction with the experience of learning. Short audio clips in informal style are helpful while addressing the concerns and anxieties of university undergraduates in relation to the course and its assessment (Chan & Lee, 2005; Lee & Chan, 2007).

Studies of the potential of mobile technologies, such as PDAs, tablets and Smartphones found that these mobile devices are particularly useful for supporting the studying process (Sharples, 2001), cognitive abilities and certain needs of various learners (Kukulka-Hulme & Traxler, 2005), personalised learning (Plant, 2001) and authentic plus situated learning experiences (Sariola & Rionka, 2003). Also, the studies by Taylor et al. (2006) and Scanlon et al. (2005) found that the capacity of mobile devices in combination with benefits they bring to learners who are on the move are likely to create such learning opportunities that cannot possibly be created in traditional learning environments.

Podcasting has been found an effective tool for learning in business and health education, where students who took part in the research said they benefited from revising with the help of podcasts in a more effective manner than from conventional textbooks (Evans, 2008; Brittain, Glowacki, Van Inttersum, & Johnson, 2006). Stoten (2007: 57) asserts that the use of podcasting in the education of nurses provides lecturers with “the option to take the learning to the learners when they have time to learn”. Vess (2006) recognises the benefit of the podcasting use during history classes stating that the use of this tool liberated time for discussions in the class and for other complex learning activities.

According to Evans (2008: 492), the biggest benefit of podcasting is the possibility to download podcasts on a mobile device along with downloading them on a personal computer (PC). While using podcasts, learners express less overhead related to looking for, locating, and downloading educational material. On the basis of his lecturing experience at Harvard University, Malan (2007) found podcasts effective in teaching based on students’ recognition of podcasting as a flexible tool that allows reviewing material rather than being an alternative to physical attendance to classes.

Similarly, in a research conducted by Kurtz, Fenwick and Ellsworth (2007), a lecture course was converted to podcasting, which allowed them to devote time at the class to solving problems and doing projects. It was found that those students who study through podcasts displayed better results than students from previous years that studied conventionally.

In addition, the study of students' perceptions of podcasting use carried out by Evans (2008) enables to claim that university students consider podcasts efficient (in relation to time which is spent on a certain amount of material), effective (how much learning has been achieved for a certain amount of learning material), engaging and easily received tool for learning as to the opportunities for revision (this relates to learner's receptiveness to learning material and ability to relate to the instructor). Thus, the benefit of this learning tool over traditional revision methods (such as revising from notes, textbooks, or printed lectures) has been recognised (Evans, 2008). The research has indicated that instructors employ podcasting in two basic forms. The first form is repetitive (lectures records along with lecture slides and lecture demonstrations (Hurst & Waizenegger, 2006). The second form is supplemental which refers to material such as interviews in combination with outside resources (Norman, 2004).

As for the study by Oliver (2005), it was found that podcasting positively influenced collaboration among transnational students. Also, the researcher found that podcasting is capable of improving learning through the reported increase in motivation and level of engagement among students. The research conducted by McKinney, Dyck, and Luber (2009) empirically proved that students who watched podcasts with lectures largely outperformed those learners that saw the lecture personally, on average. Having analysed the qualitative data, researchers found that if listening to the podcast was a repeated action it turned to be the mediating factor for success.

An increasing number of educators recognises the benefits of podcasting as to opportunities of dynamic improvement of teaching/learning processes in classrooms and regard it a dynamic paradigm of educational development (Soloman & Schrum, 2007; Brittain, Glowacki, Van Ittersum, & Johnson, 2007; Richardson, 2008; Campbell, 2005; Dale, 2007). Specifically, the research at Duke University conducted back in 2004 revealed grown convenience for learners and members of teaching staff who used iPods as learning tools during two semesters. Reportedly, students displayed greater interest in discussions held in class, field research, laboratory work and various projects. Besides, the dependence of learners on works in a laboratory and library decreased (Belanger, 2005).

Podcasting has been found to be a learning tool that offers simplicity, comfort and saves time (Hew, 2009). Podcasting has been recognised as an easy-to-use and thus advantageous tool (Hollandsworth, 2007; Gribbins, 2007; Boulos, Maramba, & Wheeler, 2006). Evidently, the flexibility of podcasts, which can be used at any time and any place, has been admitted, as well as their potential to empower students to control the learning process as to place and time frame (Clark & Walsh, 2004; Shim, Shropshire, Park, Harris, & Campbell, 2006; Evans, 2008; Vogt, Scaffner, Ribar, & Chavez, 2010; Berlinger, 2005; Fernandez, Simo & Sallan, 2009).Moreover, it has been noted that the benefit of podcasting is learners' ability to listen to it repeatedly (Dyck & Lyber, 2009; DeVoe, 2006). To add, non-native students have recognised the benefits of podcasting stressing that the ability to replay recorded files helped to understand complicated things and facilitated listening comprehension.

While studies discussed above were predominantly small-scale projects, a large-scale IMPALA project carried out in the United Kingdom back in 2006-2008 explored a combination of issues related to podcasts' integration into the domain of formal higher education. Investigating the impact of podcasts on students' education and performance, the IMPALA project was carried out across five British universities: Leicester, Kingston, Nottingham, Royal Veterinary College, and Gloucestershire. It touched a variety of disciplines: Chemistry, English Language, Genetics, Sociology, Human Geography, Engineering, Physical Geography, Media and Communication, Veterinary Sciences and Physics. The overall implementation of the IMPALA project included the pilot study, the formulation of pedagogical design, as well as working out discipline-focused applications for podcasts during two semesters, focusing on students' studying experience on the basis of two semesters. The study also involved the dissemination of IMPALA project outcomes.

In the context of the present study, the pilot IMPALA study is especially interesting. Specifically, within the latter, Fothergill (2004) utilised podcasting in the process of teaching the course *Optical Fibre Communication Systems*, which is an undergraduate module for electrical engineers. The study focused on 30 second-year and third-year students who were campus-based and learned the material online through the use of the institution's Blackboard Virtual Learning Environment(VLE) (Edirisingha, Salmon &Fothergill, 2007). The researcher substituted the real-life lectures with virtual ones, also met the learners three times to conduct a tutorial, which had

optional attendance requirement. Forthergill (2004) started using weekly podcasts to supplement the course of online teaching with delivering updated data and advice on weekly activities. He also aimed at motivating the learners through the integration of pertinent news and elements of fun (e.g. jokes). The designed podcasts were used as complementing tools to the conducted activities of the module since they provided summaries and guidance for the next online sessions to his students. Specifically, every 10-minute podcast was placed on the VLE just as a study week began; this lasted for nine consecutive weeks. Typically, an introductory item of the included news was followed by the basic content section referring to the work done the previous week and extending this to the following week. Finally, fun activities were included which were related to fibre. These were also jokes or rap. The module being taught online has a potential for being adapted to the needs of distant learners.

The study by Rothwell (2008), within the IMPALA project at Kingston University utilised podcasts to assist undergraduate students to enhance their skills in the English module. Specifically, the aspects of making mid-semester presentations and preparing a portfolio at the end of the semester were the subject of study. Students that decided to take the module were of diverse background with many speaking English as their second language. Since the professor felt that “physical” classes were not sufficient, she utilised podcasting potential to develop the skills needed by the students in relation to the assessment work. Rothwell designed a range of podcasts, with each lasting for 10 minutes. They could be accessed fortnightly through the website of the course. Generally, podcasts aimed at improving students’ comprehension of the basic concepts and issues of the English module; also they meant to positively influence their skills of revision, speaking, presentation, and writing; plus, the podcasts offered learners regular advice on how to develop the portfolio to be passed at the end of the semester. It was found that the students benefited greatly from the use of podcasts, especially in terms of their providing aid in addition to what was offered by the advice centre and in relation to possibilities of individual choices of location, as well as time and placing learning activities in desirable sequences.

The approach of France and Ribchester (2008) applied to a course at the University of Chester was aimed at providing students with feedback to clarify the assessment. Consistent feedback remarks help learners better reflect on the results of the work done. Students were regularly

provided with individual feedback on completed assignments, as well as with general feedback on the whole group's performance. Specifically, each learner got a sound file with two podcasts: one containing personal feedback and the other containing the group feedback. The evaluation revealed that students appreciated receiving the feedback.

Investigation into the use of podcasts in American Midwestern University done by Lonn & Teasley (2009) revealed that the majority of students use podcasts to review the material presented during the lectures. Scholars have come to the conclusion that this does not prevent students from physically attending lectures. This inference has been based on the fact that students tend to download podcasts with the learnt concepts predominantly before important exams or quizzes (Lonn & Teasley, 2009).

2.6 PODCASTING IN DISTANCE LEARNING

One of the recent important subjects of podcasting research has been its uses and objectives within the field of distance learning (Sloan, 2004; Fernandez et al, 2009; Oliver, 2005). Specifically Sloan (2004) found that podcasting facilitates self-paced learning, provides remediation for those learners who are self-paced, help for those learners who have some disabilities (reading, for example), enriches the learning experience of the learners at advanced level and learners who are highly motivated, as well as auditory backup for the educational process which is multilingual.

Apart from an array of other M-learning applications that can be found today, podcasting enables students to learn in a way that does not engage eyes or hands, as well as allows learning without focusing on a miniature screen (Clark & Walsh, 2004). Scholars have come to a conclusion that despite the fact that short audio clips act not just as fillers of 'dead-time', they also go along with a number of day-to-day activities, so that they get integrated in the lifestyles of students. Besides, Clark & Walsh note that MP-3 capable devices like ipads, tablets, cellular phones etcetera are found appealing by the general public, which is an advantage to their use in distance learning.

Thanks to the specifics of the podcasting technology which enables learners to get new audio files on their computers in an automatic manner. Through subscription, the learning process becomes simple, convenient and time-saving. An important advantage is that learners do not

need to search for pertinent material by examining a multitude of websites. Instead, they automatically receive new files from the websites he/she is subscribed to in case the mobile device is online. Curry (2004) underlines the convenience of this by pointing at the possibility of the material that is bandwidth-intensive to be dropped and made accessible when it is ready, which means that the situation of clicking and waiting does not happen even if the environment is constrained in bandwidth.

The specifics of podcasting technology allow podcasts to be transferred to various devices, for example, mobile phones, MP3 players, and PDAs. Based on seven desirable characteristics of mobile learning developed by Kukulska-Hulme & Traxler (2005), podcasting can ideally be described as:

- 1) spontaneous (it allows access to educational activities and materials at any time, whenever the learner feels up to learning);
- 2) personal (it is thought to be learner-centered, it incorporates the qualities of different media to make the experience of every learner personal by affective means);
- 3) informal (it turns the learning process in a relaxed and improvised activity; for example, with podcasts, learners may listen to material in an informally presented manner);
- 4) contextual (in other words, responsive to the factors of time, location, and learners' present activity);
- 5) portable (may be used in a variety of locations and through various devices);
- 6) ubiquitous (podcasting is available at any place and may be accessed through devices that are generally available; specifically, MP3 functionality is generally integrated into mobile devices which are utilised by people in their workplaces, for entertainment, or communication); and
- 7) pervasive (podcasting is closely integrated with daily activities) (Kukulska-Hulme, 2005: 2) (See Figure 2, above).

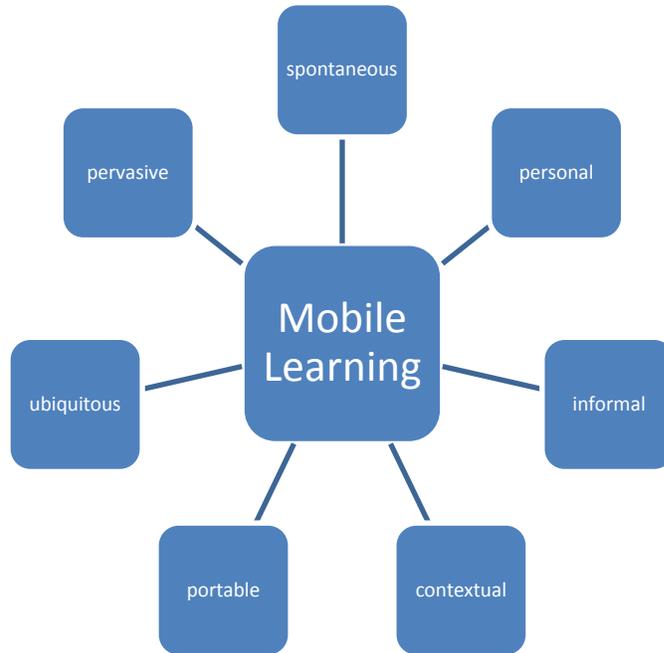


Figure 4: Seven desirable characteristics of mobile learning (Adapted from Kukulska-Hulme, 2005: 2)

One of the most important findings in the context of distance learning is that of Lee & Chan (2007) who confirm that podcasting helps to reduce anxiety among learners that is related to isolation and increases the sense of being a part of a learner community. These findings are in tune with Fernandez, Simo, and Sallan (2009) who assert that podcasting promotes motivation among students allowing them to opt for a convenient way of learning and to be in touch with their instructors.

In relation to the benefits of podcasting for distance learning, Smith (2005) found differences between learners' perception and response to audio material and text. Smith concludes that voice played in audio recordings pokes through and relieves students of the oppressive environment created by text within ODL.

2.7 CHALLENGES TO USE OF PODCASTING IN A UNIVERSITY SETTING

Research into podcasting has found that challenges exist in using podcasts in M-learning in a university context. Specifically, challenges associated with the technical use of podcasts include

systems integration for the storage of content, as well as its sharing, distribution, and access; technical limitations of mobile devices; lack of technical awareness of iPod users, relevant academic applications, shortage of quality records, etcetera (Belanger, 2005). These technical challenges, as found by O'Bannon, Lubke, Beard, & Britt (2011), have been largely overcome due to recent technological developments, iTunes among them.

Challenges related to students' use of podcasts are their general unfamiliarity with this learning tool, experiencing problems of technical kind during the process of accessing as well as retrieving podcasts, and not finding podcasts pertinent while studying (Edirisingha & Salmon, 2007; Tynan & Colbran, 2006; Bell, Cockburn, Wingkvist & Green, 2007; Lane, 2006). Another challenge is hardware costs being placed in students and dependence of learning success on individual willingness/ unwillingness to use podcasting as a technologically sophisticated tool (Hollandsworth, 2007). In addition, sufficient bandwidth is needed if students wish to download files (either audio or video ones) which are rather large (Boulos et al., 2006).

Scholars also caution practitioners to be careful while integrating the podcasting technology into the curriculum since they believe that students will not attend lectures en masse if they find out that lectures can be accessed online (Campbell, 2005; Fernandez, 2007). Another challenge is that students may not wish to use the benefits of listening to podcasts through portable media devices preferring to do this on their laptops or PCs, so that the ubiquitous use of podcasts remains an unattained educational goal (Brown & Green, 2007; Lee, Miller & Newham, 2009). Another challenge is in some university settings where teachers are reluctant to integrate the innovative technology into the studying process, for instance, in Iran (Rahimi & Katal, 2012). In addition, benefits of podcasting may be exaggerated, (Lonn & Teasley, 2009). Specifically, students find podcast helpful for learning, but the use of podcasts often does not improve the teaching style. Also, there is no general agreement among educators as to whether podcasting is simply an innovative mechanism for material review or a new method of knowledge construction (Roschelle, 2003; Lonn & Teasley, 2009).

One of the challenges of the podcasts use is the cost of production, as noted in the study by Ellis and Cohen (2001). Also, Brown and Green (2007) explain that production of a quality podcast is an endeavour for the majority of average instructors engaged in higher education some of the

reasons being lack of support from institutions, under-researched issues of content and authorship.

2.8 CONCLUSION

As part of M-learning, podcasting is gaining recognition among scholars across the globe. Especially convenient and effective are audio podcasts, the use of which grounds on the benefits of audio technology in education and in higher education in particular. Theoretical background to the use of podcasts in higher education in general and in distance learning in particular has been significantly developed of late. Still, there exist a number of gaps in this area of research. Specifically, the major issue today is whether podcasting should be used as a supplementary or basic method of delivering academic courses. Other important issues include relevance of content, instructor's technological willingness and capacity regarding producing podcasts, benefits of podcasts versus drawbacks and feasibility podcasts' use in various courses. Building up a theoretical framework of the practical research in the next chapter, the author will complete the theoretical basis of the empirical part of the study.

CHAPTER 3: THEORETICAL FRAMEWORK

This Chapter focuses on building up a theoretical framework of the practical research and will also complete the theoretical basis of the empirical part of the study. Theoretical background to distance learning has been developed of late. Still, there exist a number of gaps in this area of research due to emergence of new technologies, one of them being the use of podcasts in higher education.

3.1 INTRODUCTION

Learning is not a mystical jumble of knowledge and facts; rather it follows guidelines that will ensure that the effectiveness of the methods is made to meet the learner's needs. This has been a continuous area of interest that has been developed over time. This chapter looks into the existing theories that have been used in the development of ODL.

As a method of learning, ODL has seen various transformations, among them the use of mobile technologies. Key to this section, the use of podcasts has been an area of interest. Is this method suited to meet the learner's requirements? This sections looks into the existing theories in an effort to determine the capabilities of podcasts as an educational tool. Also closely related, the chapter looks into theories that support the use of mobile learning technology based on the learning theories. It is very important since the theories create a basis and foundation of the use of mobile technology and podcasts as a learning tool and, subsequent recommendations of the use of podcasts (Naismith et al., 2004).

3.2 OVERVIEW OF THEORY DEVELOPMENT

Despite the fact that different forms of distance education have been used since the 1800s and efforts to provide theoretical explanation to the practice of distance education have been made for decades by a number of scholars, the need for theory in distance education, especially with the increasing use of latest technologies, has been unfulfilled to a great extent until now (Simpson, 2009: 47). Back in 1973, the concern about distance education advancement was expressed by Moore. It was indicated that the need to describe and define the field was urgent, as

well as the need to discriminate between a variety of distance education components and to clarify the critical elements of teaching and learning in distance education (Moore, 1973: 661-679).

Recently, the technology of audio podcasting has gained popularity in the sphere of university education (King, 2009: 1648). M-learning has been characterised as “a rich, collaborative and conversational experience” (Naismith, Lonsdale, Vavoula, & Sharples, 2004:1). A variety of theories of learning help to consider how M-learning and podcasting technologies can be applied within the range of modern theoretical frameworks. The rest of the chapter provides a discussion of theories which have been used to inform the research in relation to the use of podcasting in distance education.

3.3 SIX MAJOR APPROACHES TO M-LEARNING

Within mobile learning, the six major approaches to learning in relation to audio podcasting may be found. Naismith et al. (2004, p. 2) specified them as the behaviourist approach, constructivist approach, situated learning, collaborative learning, informal and lifelong learning and learning and teaching support.

First of all, *behaviourism* helps to understand podcasting activities as those that foster learning as a particular change in learners’ observable actions. In the context of the behaviourist theory, the most appropriate way to facilitate learning relates to reinforcement offer, which is based on the existing association between a particular response and its stimulus. Having applied this principle to the educational technology, one may draw such parallel: stimulus is understood as computer-facilitated learning presenting the problem. It is naturally followed by a contribution of response made by a learner. The reinforcement is then provided by the system’s feedback (Naismith et al, n.d.: 3).

In consideration of the *constructivist* approach, students participate in various activities that involve the construction of new concepts or ideas based on existing knowledge. Here, learning is viewed as an active process and includes involvement of learners as necessarily active constructors of their own knowledge. Mobile devices are regarded within the context of the capacity of learners’ embedment in realistic surrounding plus letting them have access to a

variety of supporting tools (Naismith et al., 2004, : 3). The podcasting technology application has been framed by Mendoza (2011) within this theory. Its usefulness has been determined by possibility of learning explanation of podcasting as an experience involving students in task completion when they emerge as knowledge constructors (Cruz & Carvalho, 2006).

The *theory of situated learning* is about viewing learning within the authentic concepts of context and culture. The assumption is that learning will be well enhanced if it happens within an authentic setting. Because mobile devices are considered available in different contexts, they are thought to be devices with context-aware applications which may be used to enhance the learning process (Naismith et al., 2004: 3).

The *collaborative learning theory* is grounded on understanding the learning process as a kind of activity that gets promoted – thanks to social interaction. The basis of this approach has been laid by Vygotsky’s socio-cultural theory designed back in 1978. One more important theory is the one known as “activity theory” (Engestrom, 2002).

The constructs found in the socio-cultural theory allow assuming that the podcasting technology may be more effective in comparison with some other educational technologies. If one considers podcasting in the context of the cultural-historical activity theory, they should focus on its framework in neo-Vygotskian dimension (Engestrom, 2002). This theory provides the potential of technology contextualisation within ODL strategies and resources in teaching and learning.

In the context of cognitive development, Lev Vygotsky suggests that skills and behaviour development are preceded by the process of learning. Referring to developmental processes as the ones that necessarily lag behind the learning processes, Vygotsky posits that less developed and less experienced people productively cope with the tasks while they are being assisted by some other people in the situations when they fail to complete the tasks on their own. It is the learners’ internalisation process that places learner-demonstrated knowledge as well as their skills and behaviours which have been developed through other individuals’ assistance into learner’s schemata.

Extending the theory offered by Vygotsky, Engeström developed his own activity theory. It involves considering the subject as referring to a sub-group or some individual with his selected

analysis unit. Here, the object is considered within the given problem space to which the activity is directed. It is then transformed through the use of instruments, both physical and symbolic, into outcomes. The community practices division of labour, which means it is necessary to dividing the tasks both horizontally and vertically. It is an elaborate system of rules that circumscribes the task division through a sophisticated system of rules, specifically explicit or implicit norms, conventions and regulations constraining current actions that occur within the system.

Within the neo-Vygotskian Engestrom's theory, podcasting is viewed as one of the tools which are used by some group of learners with the aim of enabling them to make sense of their task and their environment and being able to interact with it (Engestrom, 2002). This research considers the theory in terms of its exploration of podcasting effectiveness, with podcasting as a delivery tool in the learning process of research proposal writing.

On another note, the theory of informal and lifelong learning views the process of learning through activities that foster it beyond the particular learning environment or beyond the formal curriculum. In this context, it is believed that the learning process takes place incessantly and is under the impact of an individual's specific environment and situations he/she faces. Tough (1971) writes that informal learning may possibly come in two forms intentional (via taking parts in a list of deliberate learning projects) and accidental (when knowledge is taken from TV news, world observation, newspapers, conversations, TV news, or just confusing situations) (Naismith, 2004: 3). Within this approach, learning is seen as a part of an individual's everyday life. This theory is especially useful if applied to M-learning since it allows stressing the value of mobile technologies and particularly of audio podcasting.

Further, the theoretical concept of learning and teaching support successfully explains the use of podcasting. It centres on activities that aim at coordinating both learners and current resources which are used for learning activities. In these terms, mobile devices are perceived as tools for course material provision to learners also providing information about a particular course. Predictably, this approach can be applied while framing the use of audio podcasting by ODL students.

3.4 DIFFUSION OF INNOVATION THEORY

In addition, the novelty of podcasting as a relatively recent technology in the field of education allows application of diffusion of innovation theory. Specifically, the theory considers technology diffusion process and centres on factors which are found to influence the decision in favour of technology adoption. Rogers (1995) says that technology diffusion is about sustaining the process of an innovation's adoption and acceptance by people. Rogers' theory (1983) helps to explain the way the characteristics of some innovation, for example audio podcasting, shape teachers decisions on how to use it effectively in the learning process, as well as define the rate at which it is adopted. Diffusion of innovation is explained as tracing the innovation's spread throughout time to individuals within a social system. To illustrate, Roger (1983) explains:

The essence of the diffusion process is the human interaction in which one person communicates a new idea to another person. Thus, at the most elemental level of conceptualization, the diffusion process consists of 1) a new idea, 2) individual A, who knows about the innovation, and 3) individual B who does not yet know about the innovation. The social relationships of A and B have a great deal to say about the conditions under which A will tell B about the innovation, and the results of this telling (p. 68).

Also, innovativeness is thought to be an extent to which individuals make innovative decisions without relying on communicated experience of other individuals (Midgley & Dowling, 1978). Developing the point above, innovativeness is to be viewed as individual's predisposition to act in a particular manner regardless of a certain stimuli that acts as behaviour activators (Foxall & Szmigin, 1999).

Hence, innovativeness is thought to be an enduring trait of personality which is found in every person to a bigger or lesser extent. It is adopted in a slow manner at the beginning and later it increases diffusion speed as more and more people come to adopt it.

3.5 USER CONTROL AND COGNITIVE LOAD THEORIES

It needs to be mentioned that both user control theory and cognitive load theory offer such constructs that are applicable to the use of podcasting as a particularly effective delivery medium. In particular, the user control theory encourages freedom in learning, whereas the cognitive load theory is about cognitive load decrease (Eveland & Dunwoody, 2002). To be more specific, the claim of the user control theory is that if freedom in learning increases, the control felt by a user increases simultaneously and this leads to learning enhancement. If to consider the cognitive learning theory, it assumes that the increase of a cognitive burden which is felt by a user while he/she is learning leads to an increase in learner's capacity to keep the learned information (Brunken, Plass, & Leutner, 2003; Paas, Touvinen, Tabbers, & Van Gerven, 2003).

In this context, learning through the Web is viewed as one that possibly increases cognitive load, while podcasting brings certain benefits in this respect – thanks to the enabling mobility it provides. Because podcasts may be accessed at any place and time, one believes they do not increase cognitive load. This is seen as more productive than simply learning through the Web.

3.6 SOCIAL CONSTRUCTIVISM

Considering the importance of context and collaboration in the learning process, social constructivist theory with its social constructivism of knowledge seems one of the most pertinent while researching the current subject. The primary significance of social construction is related to its focus on social interaction whose centrality in learning has been well researched by Sharples (2000) as well as by Sharples, Corlett, and Westmancott (2002). These works' major rationale is based on recognition that personal learning begins together with a learner in an environment which can be characterised as cultural, social and technological at once. For instance, Sharples (2000:4) writes that: "Learning is a constructive process of acting within an environment and reflecting upon it".

In this context, action means displaying an ability to solve various problems, take part in dialogues which aim to obtain new knowledge and finally, obtain or, better, acquire this knowledge. In its turn, reflection means that a learner is capable of abstracting from particular

situated activity to incorporate previous knowledge into present experience with the purpose of constructing new interpretations. Hence, conversation evolves as a focal point during action and reflection; it takes place between the learner and instructor/teacher in a dialogic manner. Thus, construction, conversation and control are three Cs that ensure successful construction of knowledge (Sharples, Corlett, & Westmancott, 2002).

It is suggested that learners will benefit from implementing the principles of social constructivism if the following principles are taken into account. Johnson and Johnson (1999) formulate them as:

- 1) the necessity to begin from learners' current level of development and cognitive ability, as well as existing knowledge base;
- 2) enabling learners to construct and then acquire knowledge via important learning practices which are based on their prior knowledge modification;
- 3) establishment of relationships between the outlines of knowledge which already exist and those which will be constructed as new knowledge; and
- 4) engagement of students in cooperative learning activities while constructing new knowledge.

Applying this theory to M-learning within distance education, one needs to consider first of all the flexibility of access of iPods, tablets, Smartphones, and other handheld devices that enable users use the Web in any place and at any time. This is thought to act as a tool for assisting learners in knowledge construction while being engaged in everyday activities. Hence, podcasting technology is likely to become an integral and inseparable part of daily learning (Mifsud, 2003).

3.7 CONTEXTUAL LIFE-LONG LEARNING

It is the framework designed by Sharples, Corlett, and Westmancott (2002) that allows implementation of M-learning technology and stresses the importance of the concept of Contextual Life-Long Learning. Its key features were defined in the following ways:

- 1) Learning is beyond specific times or places and it occurs any time there appears to be a break in everyday activities and an individual has a chance to reflect on some issue, try to solve some problems, etc.
- 2) Formal system of education is unable to satisfy people's need of acquiring the knowledge they want and the skills they require in order to successfully pursue a career. This means people face the need to continually improve their abilities so that they will be able to solve arising problems and take part in the process of their development as professionals (Sharples, Corlett, and Westmancott, 2002: 220).

The concept of Contextual Life-Long Learning is based on recognition that its environments are not pre-specified, but rather created in the process of learning. In other words, students promptly construct their own environment of learning to which they are central. The context of a learner thus includes location, time, prior knowledge and skills, as well as available resources.

There was a developed list of requirements for those technologies that support the concept by Sharples, Corlett, and Westmancott (2002: 223). So m-technology should be characterised by being:

- 1) highly portable- This provides availability any time the user wishes to acquire knowledge;
- 2) individual- This refers to being able to adapt to abilities and existing knowledge of learners as well as their learning styles. This also means being supportive of personal learning rather than general work in class/office;
- 3) unobtrusive- This means the learner should be able to capture situations and obtain knowledge without having technology as an obstruction in particular situations;
- 4) available at any place- In order to provide communication with instructors, experts and other learners;
- 5) adaptable- This means capable to adapt to the learning context and skills/knowledge that are being formed in the learner;

- 6) persistent- This is important for learners to enable them to manage learning during whole life. This suggests that learners' accumulation of knowledge will be accessible even if changes in technology take place;
- 7) useful- This refers to being suitable for everyday needs of learners for reference, learning, work and communication; and
- 8) easy to use- Meaning, easy in usage for people who are technologically inexperienced.

3.8 THEORY OF SELF-REGULATED LEARNING

Within the theory of self-regulation, the self-regulated nature of learning is emphasised, where the very process of knowledge acquisition is described as cognitive, self-regulated, constructive, mediated and significant (Montalvo & Torrez, 2004). To achieve progress in self-regulated learning, one needs to apply his or her will and skill at once. The mission of education within this approach is to facilitate students from becoming aware of their thinking as well as their development of sound strategies and directing motivation to achieving important goals. Thus, the objective for students is to learn to act as their own instructors so that the move is done from the focus on teaching to self-reflection (Schunk & Zimmermann, 1998).

Within this theory, the Pintrich model of self-regulated learning seems especially relevant in the context of the current research. The framework offered by Pintrich (2000: 454) is grounded on the socio-cognitive approach. Thus, it clearly classifies a range of processes that occur in self-regulated learning. According to the model, regulatory processes get arranged within the following phases: a) planning; b) self-monitoring; c) control; d) evaluation. Every phase requires each of these activities to operate within these four areas: behavioural, cognitive, contextual and motivational/affective.

3.9 CONCLUSION

In summary, the review of a range of theoretical concepts in the field allows claiming that research is needed to complement the theoretical basis of the use of audio-podcast in distance learning. Therefore, the current research will expectedly work out the existing theory in two

major directions: overall development of the theory of distance education and application of new technologies to the area of distance learning. The following principal theories have been used to inform this study: the theory of social constructivism, self-regulated theory, Rogers' Diffusion of Innovation Theory. Besides, the theoretical framework includes the overview of principles of behaviourism, constructivism, collaborative learning, situated learning, informal and lifelong learning and learning and teaching support in their relation to the practice of M-learning.

The next chapter will focus on the research design and research methodology. Specifically, the chapter will explain and justify the methodology used to do the research and provide a theoretical framework. It will also discuss the research instruments and the sampling strategy and explain what methods of data analysis have been chosen to analyse the data.

CHAPTER 4 : RESEARCH DESIGN AND METHOD

This chapter provides an explanation and justification to the design, methods and process of data collection that was selected. It discusses the specifics of the study design and focuses on the sampling procedure, describes data gathering process, discusses the instruments used and explains the validity and reliability of the research. The chapter justifies the use of a mixed method design and explains the reasons behind using of both qualitative and quantitative research designs and the following data collection tools: Online Observations, Online Reflections (through comment tool, email and discussion forum), Online Survey (electronic and print questionnaire), and focus group interviews.

4.1 INTRODUCTION AND CONTEXT OF THE STUDY

Unisa is one of the world's mega universities in Open Distance Learning (ODL). It is Africa's leading distance learning institution which is reputable, comprehensive, flexible and accessible. Unisa offers internationally accredited qualifications and have world-class resources that inspire learners to create meaningful futures on their own terms. Unisa's vision, "Towards the African University in the service of humanity" drives this Institution to find answers, to both South Africa and Africa's education and developmental problems. Unisa is working towards realising this dream through the use of Information Communication Technologies, including the use on mobile learning technologies.

The College of Education at Unisa enrolls about two thousand masters' and doctoral students and it is responsible for supporting and developing research writing skills of these students. During the 2011/2012 academic year, the Senate Higher Degrees Committee mandated all the seven colleges at the University to initiate alternative strategies for teaching postgraduate student research proposal writing. It is therefore in response to this call that the researcher developed the course for teaching and learning research proposal writing using audio podcasting to be accessed on mobile devices or computers.

The study was set up in Unisa in two regions, Durban and Gauteng, where the students registered for Masters' Degree the research proposal writing module in the College of Education (Course code : MPEDU91). To be precise, the pilot project that involved deployment of podcasts for teaching and learning for masters' students. The masters' in research proposal writing students met once in a while in study workshops as well as online by communicating using myUnisa (Online Learning Management System), the university learner management system. Because of the nature of ODL the students registered for the course were not full time students due to work-related engagements that most of them had.

Rationale to provide an easy and accessible means of providing learning material as well as other diverse advantages of this method of study brings only good news. To achieve this, the chapter is guided by the fundamental research questions throughout this study which are;

- What challenges do postgraduate students face in research proposal writing within ODL context?
- To what extent do the learners find acceptable the use of podcasting as a delivery medium?
- To what extent does the use of podcast as a medium of delivery help students to achieve the outcomes expected from the course?
- How do students who have completed the research proposal writing course which integrates podcasting compare to students that did not have podcasting used as a medium of delivery regarding performance and drop-out rates?

4.2 RESEARCH DESIGN

The research design was a combination of descriptive, exploratory, explanatory and semi-experimental classification of designs, one that used triangulation (mixed method) research which employed five research tools. The purpose for the particular research method was to investigate the subject matter from more than one point of view to give a clear and reliable result. Other than that, the method was considered as a means of combining the strengths of the individual research tools employed and to a great extent avoiding and or averting possible errors and weaknesses (Bordens & Abbott, 2008). Using the tools, the results as listed below, will be

interpreted with relation to the thesis to understand whether the use of podcasts is really feasible in the population under question.

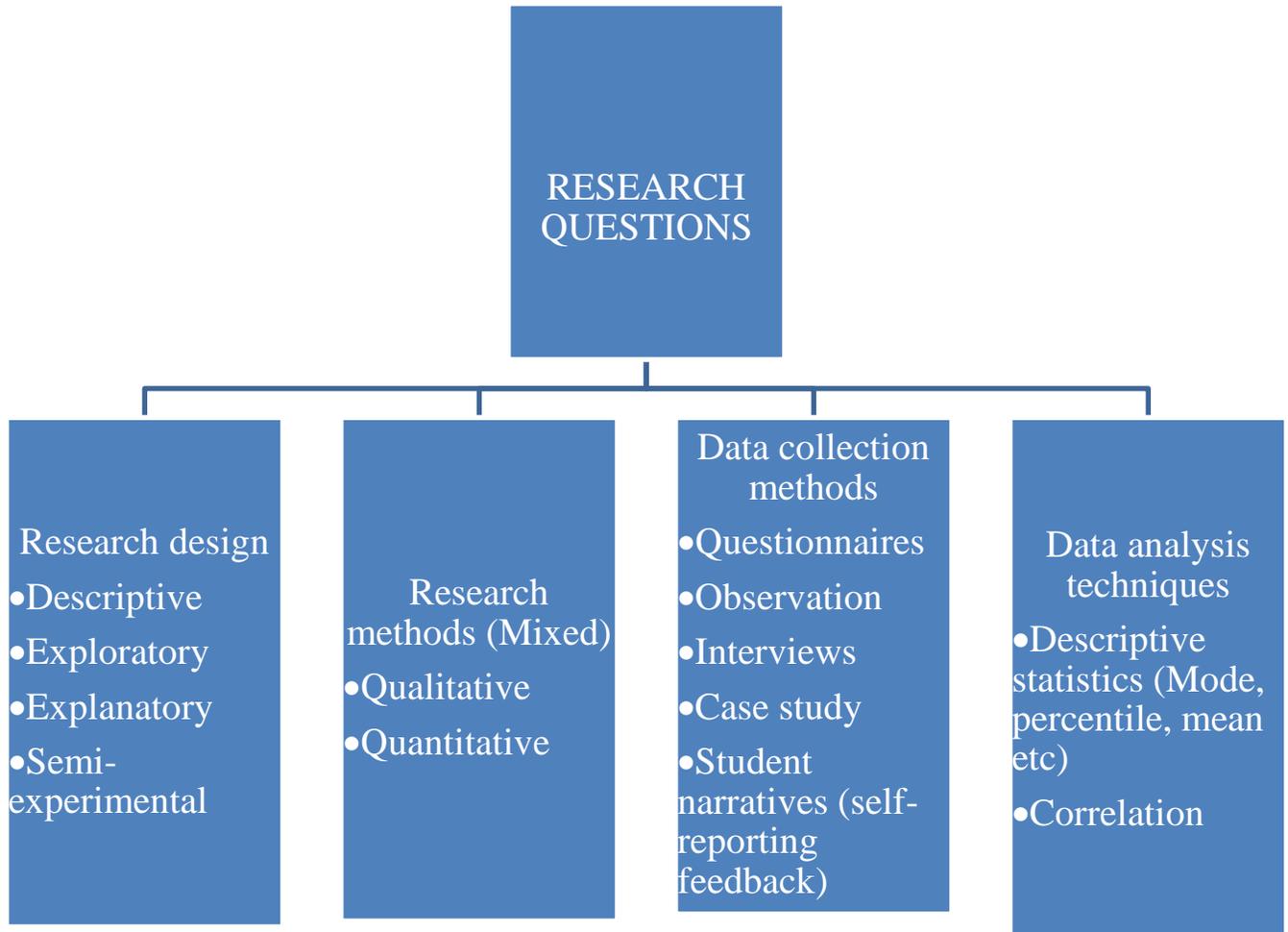


Figure 5: Schematic representation of entire research

4.2.1 Research approach: Definitions and justifications of types of research used

4.2.1.1 Quantitative research

According to *Quantitative research* (2010), a design that utilises quantitative approaches to research has several advantages. As is common to any research, there is a study of a small group that will indeed be used to generalise the results for a given population. In that case, quantitative

methods gives the researcher room to conduct a broad research (involve many samples) that will enable him to get a better generalisation of the population he or she is studying. One distinct characteristic of quantitative research is that it involves a few variables that are examined across a large or considerably large amount of samples. There are procedures that guide the achievement of a summary of the findings that were made in the study. The procedures are used ensure that the study has validity and reliability.

Another aspect that makes the use of quantitative research advantageous is that, due to the use of procedures, the study can be replicated in the same population and compared with similar studies over a period of time. Nonetheless, in cases where the researcher is known to the sample, bias would be a very key factor. Personal bias in quantitative research can be avoided by ensuring that the researcher does not interact with the sample but uses other people in the conduction of the research. Also, there is distinction between the dependent and the independent variable according to Creswell (2003). In some researches, the relationships between variables are held as the primary objective. Using quantitative methods, one is able to come out with relationships between the variables that may also include the cause and effect relationship between the variables in the study and also make evaluations and inferences that will link the sample and the variables.

4.2.1.2 Qualitative research

Qualitative methods of research, as Seale (2004) points out, have its own strengths. A researcher dwells into details in qualitative research as opposed to quantitative where the researcher's interest is in the statistics. In contrast, in qualitative researches a more realistic result is obtained, where the exact intended meaning by the sample is obtained. Prescribed procedures are not very common in qualitative research thus giving flexibility to various aspects of the research that includes the method of collecting data, the interpretation and the final analysis. Notably, these are subject to the researcher who may choose to take certain measures to enhance the reliability and validity of the research.

Contrary to quantitative means, qualitative methods allow the interaction of the researcher with the sample. Through qualitative design, experienced understanding can be obtained as to the

exact response and not limited by the choices of answer and depth of explanation. The other advantage is that the data are very raw and not twisted to meet or narrow response only to what matters to the research and also provides accommodation for the unstructured data that is obtained from the sample.

4.2.1.3 Demerits for quantitative and qualitative research

Singlehandedly, the methods pros seem to indulge one in an endless battle of choices. In research, the cons are as much important as every other aspect that they may bring in altogether. At times one con can be a reason to refute the claims of a researcher as Bordens and Abbott (2008) points out and underlines the importance of considering the disadvantages of the methods. On one hand, quantitative methods seem to be incapacitated in the areas that qualitative methods are strong such that the depth of knowledge obtained is lower in quantitative in that respect. Control of some variables in quantitative is also viewed as unnatural and preset and confined answers may not give the exact feelings or views of the sample. Structural bias is also present in the standardisation of questions for the research.

On the other end, Deviating from the objectives of the research is viewed as a shortcoming of qualitative methods. The same information can be interpreted to arrive at different conclusions and may mostly depend on the researcher. Elements such as inability to give cause and effect relationships of the variables, lack of consistency and the requirement of experience by the researcher are inevitable to enable him to get the information desired from the sample.

4.2.1.4 Advantages and justification for using mixed method research/triangulation

With both methods having immense flaws, combining the two, otherwise known as mixed methods or triangulation minimises the faults of the methods individually and capitalises on the strength brought forth by the qualitative methods as well as quantitative methods. As pointed out by Brannen (1992), more and more researchers have opted to undertake their studies in mixed method due to the intuitiveness and logical characteristics that are brought forth in using both the qualitative and quantitative method in investigating a phenomenon in inductive, deductive and abduction methods. These help in discovering patterns, testing of theories and hypotheses as well as uncovering reasons that may have led to the results obtained.

In designing the study, interest in the challenges that postgraduate students have in research proposal writing formed an area of inquiry that guided the choice of the five tools which are namely observation, interviews, narratives from the feedback system in the podcast website, questionnaires and a case study into the pilot project that was launched to facilitate research proposal writing using podcasts and compare it to the previous time where the method was not in place. Other areas of inquiry included whether the postgraduate students found the use of podcasts and acceptable method of delivering, determining the benefits of podcasts in relation to the research proposal writing achievements. In addition to that, the case study will aid in comparing the performances of the students who used podcasts as a method of material delivery and students who did not use the podcasts in the research proposal writing course, as well as the drop-out rates of the two groups.

Since the study is one that combines both quantitative and qualitative research methods, according to Creswell (2003), the results that emerged are different in the mode of presentation. Quantitative methods use numerical data to get statistical results to explain phenomena about a particular interest in the research on a population as pointed out by Bryman and Burgess (1999). On the other hand, qualitative methods yield in-depth explanation to enable the researcher to understand an area of interest. Accordingly, the statistical data analysis clarified some of the enquiries of the study as well as textual commentary and feedback from the sample regarding some of the area of interest. For this reason, the research has mixed forms of presenting the results obtained and thus the name mixed method. Using these two major methods of research, the behaviour of the variables are understood fully and the final result arguably reliable and free of errors from the individual methods.

4.2.2 Dimensions of the research design

4.2.2.1 Descriptive

Accurate characterisation of the relationship between variables or elements (both objects and persons) in research may be a fundamental part of achieving the goals. In that summary form, the main objective captures the definition of a descriptive research study. Notably, the nature of the research is not experimental in nature.

In the study, there are various attitudes that the subjects of the study have towards the use of podcast in disseminating crucial information that is part and parcel of their education (Creswell, 2007). In that case, a description is made of the problems that students encounter in proposal writing, the thoughts they have on audio podcast as a solution to their problems and the attitudes and feelings they have toward using podcasts.

4.2.2.2 Exploratory

As explained by the Merriam-Webster dictionary(2013),to “explore” means to conduct an investigation, examination or even to look into something that may even be through use of indirect questions, testing and or experiments. The main aim of exploration is to gain more knowledge or gain understanding. Exploratory research close to that is a study conducted in an area of uncertainty or ignorance in order to gain understanding. Using great flexibility, the research is tailored to unveil the boundaries, the elements in the area of interest as well as identify the variables and factors that have a role(s) in the relationships existing as may be directed by relevance to the study (Creswell, 2007).

Use of podcast is yet to be introduced in the ODL faculty of Unisa and provides an area that has not been looked into before. Using all available tools, the research aims at identifying all the parameters that are involved in the setup and successful use of podcasts in Unisa for ODL students in the broad umbrella of feasibility. Curiosity over the response of the idea as well as use of the set up semi-experiment using website hosting of podcasts relevant to the sample was present as well as open mindedness in the areas which had not been researched in the institution before.

4.2.2.3 Explanatory

Equipped with several tools, the identification of factors and variables that exist in the area of interest is possible and is followed by seeking to establish whether there are any causal links in the variables and factors. Using structured methods, an explanatory/analytical study identifies cause and effect relationships in accordance with the research questions (Creswell, 2007).

Research questions addressed by the study clearly indicate the need for the researcher to establish whether there are factors that have a cause and effect relationship and the strength of

the relationship, which will become clear in analysis of statistical results. For example, the questions that sought to understand whether the availability of mobile devices that are used to listen to the podcasts which may have an effect in the uptake and usage at the present time will be adequately addressed. Another example of a causal relationship to be addressed is the effect of using podcast on the performance and drop -outs in the research proposal writing course used in the sample.

4.2.2.4 Quasi-experimental design

As the name suggests, this type of study incorporates various elements which are elements of experimental researches as well as others that are part of non-experimental studies. Elements of experimental designs include a control group, random assignment, and a means of measurement, manipulation and treatment. Quasi-experimental research on the other hand means that the study does not have all the elements of an experiment; for instance, participation in the project is voluntary. In this case, it means that not all students were compelled to use podcasts.

In the study conducted, podcasts were created related to the research proposal writing course that the sample was taking in the academic year stipulated above. The podcasts were uploaded to a website that is similar to the ordinary operation of podcasts in such an institution and the students were informed adequately and left naturally to access by choice similar to real life podcast use (Creswell, 2007). In various methods, it qualifies as an experiment but there are crucial elements that were not included that makes it a semi-experiment. Such elements that were exempted knowingly due to the objectives of the research include random assignment to all ODL and manipulation of the participants.

4.2.3 General description of incorporation of the dimensions of research designs with qualitative and quantitative (Quasi-experimental) methods of research in the study

Observation was used to assess the nature of the variations in performance of the podcasts website in visits, new members and downloads in the research timeframe that is stipulated. To completely understand the attitude of the students towards the podcasts, a feedback of the self-reported experiences on the impact as well as acceptability of the means of delivering learning material in the course was tapped from the website from which the podcasts had been posted.

To understand the feedback and data obtained, questionnaires will provide data for comparison as well as more insight for the open-ended parts. The interviews too will offer another dimension for the understanding of respondents view on the areas of interest. Since the module comprises of ODL students, for convenience some of the interviews will be tuned or adapted to cater for the distance between the researcher and the respondent, for example via telephone or mobile phone calls.

At some point, the study was quasi-experimental in the use of a pilot project of the podcast media to deliver what the students required for the research proposal writing course. The interest in this case was how the students would respond to the podcasts and the rate of use in comparison to the sample size. Feasibility in the study was not used in terms of the cost effectiveness but on whether the student would actually embrace the method to help them in the course and thus any aspiring compilations that would be made for other modules in future.

Experimental and quasi-experimental designs have been employed in education when the reality of the matter is of fundamental importance rather than relying on self-reported explanations from the sample which may be either distorted or twisted to other interpretations of the subject matter. It should be noted that indeed the main question of this study was to assess feasibility and this is a trial into what would otherwise show if the system had just been launched in a real educational scenario (Fraenkel & Wallen, 1993). It is therefore indeed suitable, since all factors have been held similar to the true situation that the students would encounter for the podcast method of disseminating learning material.

Existing theoretical frameworks give insight into the matter and have yielded basis for the thesis statement. Case studies give a practical avenue for comparing what the researcher has on the ground and what is expected according to the theories used (Cohen et al., 2000). In this case, the pilot study and the general data collected will be compared in terms of performance and rate of drop-out of the students in the course between one who used the podcasts and the ones who did not, either presently or in the past.

4.3 SAMPLING PROCEDURES

4.3.1 Quasi-Experimental Sample

In research, a description regarding a particular group is desired; this group is called the population of the study. A sample composes of subjects that fall in the desired population in characteristic and can be taken to represent the population to some extent. In that case, according to Thompson (1992), data are collected from the sample and the statistics related to the likely behaviour of the population under study. It is rather the procedure of selection of the sample that would make the sample a valid and reliable representation of the population.

Ideally, each method of selection of a sample for representing a particular study has pros and cons. The extent to which the cons affect the results is a basis for disqualifying the result as an accurate representation of the population on ground of external validity. For this reason, the importance of a proper sampling technique holds the entire research at ransom. In the different methods of doing research, there are several sampling methods that are presented as best to achieve the objectives of the study.

Reckoning a statement made by Levy and Lemeshow (1991), statistical data are the heart of quantitative research. However, to achieve a representation of the population in question, the sample must represent what is expected in the population. In such instances, the influence of the researcher is viewed as an interference that would make the reliability of the study questionable. In other words, the subjects in the population should have as much a chance to participate in the research as any other. Otherwise called random selection, in this kind of selection if the variations in the populations are catered for, the results will be accurate and echo the whole population. This gives rise to several methods of random sampling.

In its simplest form, purposive sampling also ensures that each member of the population has a chance to be in the sample, voluntarily though. With true experimental designs at times, the selection may not represent all the parties in the population in a manner that would make every unique group represented; that is why, for instance, a simple exercise of putting names of the population in a hat and picking one at a time brings this into perspective according to Thompson (1992). Other methods to cater for that were devised which include picking a sample after specific intervals (systematic sampling), putting the population in clusters which have an equal chance of selection but only a specific member of that cluster will be used to represent the members of that cluster, to work the cluster should have similar characteristics (cluster random

sampling) and finally, subdividing the population into subgroups and noting the percentage the subgroups occupy in the population and in selection of samples, the percentage is also incorporated in the number of samples that will represent the subgroups (stratified random sampling) (Bordens & Abbott, 2008). In the quasi-experimental design unlike a true experimental one, a researcher has not deliberately included or excluded subjects to participate as control or treatment groups. Actually, true-experimental designs in social sciences are considered unethical. It is labelled unethical in the sense that subjects from controlled group will benefit from the intervention while the other group will not. The quasi-experimental design invites participation to be voluntary, and those individuals who opt to participate are exposed to the intervention (podcasts in this case).

4.3.1.1 Qualitative Sample

On the other hand, the qualitative research design offers in-depth look into the matter under question and thus gives an outstanding outcome to the research. That means that the sample that the researcher uses should be able to give diverse knowledge helpful to the researcher. It therefore drives a rift between the ideologies used in quantitative and qualitative research. The need to get insight into the population has caused most researchers to incline to those samples that have required composition and variance expected that will enrich the research (purposive sampling). One outstanding feature of qualitative designs is that at the beginning you do not really know the size of the sample; the definite size is determined by the researcher satisfaction with responses (data saturation). When the responses have reached saturation point, it is when the researcher decides to stop with interviews, reflections and so on.

4.3.1.2 Mixed Methods sampling

What about mixed methods of research which combine both quantitative and qualitative methods? Which is the best sampling technique? Extensive reading has shown that it is not a matter of common practice but a matter of achieving the goals of the study. This study is titled: “Feasibility of using audio podcasts on mobile in open distance learning”. It therefore requires insight to understand the population in an exploratory form to come up with results that depict the current situation on use of podcasts as it stands, the challenges, attitude of the users to the

system and possible improvements to make uptake of the system a success if that is what is desired by the population under study. Equally, statistics are necessary to view the results of the sample in various parameters that were used by the study. All these are done to ensure that indeed the understanding the study eventually gives a clear picture for any elements in use of audio podcasts in the population.

Depending on the nature of the research, there are levels of interference of the population by the researcher that may be acceptable. As explained above, the nature of this researcher will benefit from a sampling method that will allow the researcher to interact and obtain fundamental information. For the grounds explained, the study opted for a purposive sampling technique as per elements mentioned and proposed by Patton (1990) and a host of other modern researchers for mixed/triangulation researches.

In this study, masters' students registered for the research proposal writing course in the 2011-2012 academic years were used as the sample. The inclusion criteria for participation in the study were: the student should be a *bona fide* Unisa student taking a course on research proposal writing during the research period, (ODL) student on his or her masters' level of studies. There are several reasons for the criteria established above. The population under study in this research was to be kept at manageable levels to ensure that indeed the research obtains accurate, reliable and valid data. In this case, Unisa was selected. There are several distance learning programmes but in this case, the study narrowed the sample to ones who were in their masters' level for purposes of association with the characteristics of a majority of the members of this group.

Also worth mentioning is that the masters' in proposal writing students are spread across nine Unisa regions which due to logistical challenges and the amount of resources available were narrowed down to two. As a result, Durban and Gauteng regions were used for the sample in this study. The total number of students enrolled for the course was 310 and as mentioned earlier, all of them were spread across the nine regions. I focused on two regions which together have 130 students for logistical reasons in order to our research to take a realistic, achievable and considerable number in proportion to the research period granted.

Further interest that narrowed the sample was a crucial stage of the level which entailed research writing. The course that was selected brings together all masters' students for purpose of research proposal writing. Problems had been reported in the proposal writing course setting as lack of learner support material and clear guidelines; this has led to dropouts and most frequently poor performance. This formed a good test area for the effect of podcast.

4.3.2 Sample size

Various means exist in determination of the ideal sample size to be used in a study. It should not be taken to be a precise percentage as at times the number could be ridiculously big and lead to more issues related to the costs and may affect reliability of the study in general. With calculators that are coined to do the calculations, it is at times not to the researchers benefit, unless, the calculator caters for all the parameters that are important to the study to ensure the results obtained give meaning and enrich the content of the research (Fuller, 2009).

In one method, Dávila (2010) points out that the predictors in a research should be put into consideration. For individual predictor testing, the calculation is made using the equation $104+k$ for which the figure obtained forms the least number of samples needed. In the same token, another formula in regression for example, a minimum is set as $50+8k$. In this case, k is the number of predictors for that study. In that case, in the figures obtained, the larger is taken as the best for such types of surveys. In comparison with other types of researches, it is clear that this method has been applied to specific natures of analysis that are formed in the objective of the research.

Pennstate (2001) points out that for success, detailed criteria should guide in selecting a sample size for any type of research; be it in calculation or using tools such as calculators and should be taken with utmost importance. He points out that there are several steps to quantify a good sample size for a research. (1) The goals of the research should be understood, (2) A precision that is desired in conducting the research should be determined for use, (3) A confidence level should be determined, (4) The variability range or degree should be estimated in the study and finally (5) The rate of response by the sample should be estimated.

At this point, goals are considered in a variety of ways. First, from the core of the study, the population holds the most logical starting point. If the population is small, using the entire population for the study (conducting a census) improves the reliability and validity of the results by virtually zero rating the amount of error that may result in sampling. Pennstate (2001) recommends this for a population of about 200 people below. Elements or variables to be measured in the sample are also important, especially when the methods through which they are going to be measured are included. Ideally, there are some methods which can facilitate quick, accurate and cost effective means even for large numbers of subjects (Messer & Washington State University, 2009). Others provide challenges related to the above forming the second consideration.

Research using samples relies fundamentally on the representation of the population within the sample and thus translating into the results obtained. Despite following recommended methods of sampling, the exact representation of the population cannot be ascertained. That gives rise to sampling error. The further the sample deviates from what is expected from the population, the more it compromises the acceptability of the study. In that case, it is important to keep the data close to the actual, of course at a realistic deviation. For example, one may choose to have a $\pm 4\%$ precision. What this means is that in a result obtained from the sample as may be 56%, in reality, the real result may range between 52% and 60%. The required level of precision may also differ in different faculties. Bottom line, the closer the sample result is to the real result the better as Pennstate (2001) emphasises.

Moreover, an aspect of the risk for which the result obtained can be replicated if the same procedure was used to run the same data collection in the sample (many times) in comparison to a result from the population is to be considered (Patton, 1990). This element is referred to as the confidence level. Usually indicated in percentage, a confidence level of 95% would mean that if the sampling was to be repeated 100 times, 95% of the results obtained would be in the precision range that the researcher had specified for the study. Statistical significance is what is amplified by high confidence levels as Pennstate (2001) shows. It therefore means that lower confidence levels bring in challenges. For most social science research, 95% and higher levels are seen as fit.

On estimate, it is necessary for the researcher to have an expectation of how the variables and elements being tested will behave in the population that is being studied. There are various distributions in the variables that are harder to measure accurately as compared to others. Homogeneous distributions, a 80%- 20% division in the study, are easy to measure as compared to distributions that are on the extreme for example a 90%- 10% division as well as a 50%- 50% division. The divisions which have been described above as extremes (90%-10% and 50%-50%) require more samples to give the study more accuracy (Pennstate, 2001). As indicated in the example divisions, one would require more samples to show that indeed the division on the phenomenon is a 50%- 50% division so as the 90%- 10% division. The gist of this is to give an accuracy backing to show that indeed the population is divided on those lines (Messer & Washington State University, 2009).

Unfortunately, it is rare that the entire intended sample participates in a study. The effects of this can be detrimental to the research and for that reason, it is taken with equal importance. It is in record that methods that involve direct contact with the respondents have better response rates. Another way of increasing response rates is by increasing the contact personnel or the people in contact with the respondents during the data collection process (Patton, 1990). Particular to this research, there are some of the data collection methods that will have no contact due to the challenge of distance of the ODL students. Hence, it is important to recognise that indeed the response rate may not be 100%. The best remedy for the non-responses encountered is to account for them (Dávila, 2010). How? An estimate of the response rate of the prescribed data collection is recorded in researches that use the same methods or are of the same kind. Using this percentage, the obtained sample size from the above procedures should be divided by the percentage of expected response. The result should be used as the most favourable final sample size.

4.3.2.1 Quantitative sample size

The population of the study consists of masters' students taking the research proposal writing module and stands at a total of 310. In purposive sampling, the 2011-2012 masters' student class taking the research proposal writing course was selected and has a total number of 130 students. In considerations of the parameters mentioned above, the number of samples for the class meets the criteria for a good sample size to represent the population with a desired precision of 5%, a confidence level of 95%, estimated division of 75%- 25% thus 0.25 variability and an estimated response rate of 75% (Fuller, 2009).

4.3.2.2 Qualitative sample size

Using the same criteria and considerations above, the selection of students for the focus group interviews was set at 30 students. This was done in appropriate considerations of the regions for the study and available resources towards the course.

4.3.3 Sample recruitment

Specific requirements of the sample, masters' student's taking the research proposal writing course, meant that the method of recruitment should be very specific to the group and give optimum effectiveness to ensure that the number of the sample is obtained. It therefore meant that due to the nature of the students of the class, the prescribed meeting time was the only time that the students would be in large numbers or be free of the commitment to allow sharing of the information about the research (Messer & Washington State University, 2009). Among the methods that were considered included using flyers, one on one chats with the students and a collective introduction to the whole class with room for questions. For convenience and maximum penetration and saving time, a collective introduction and formal request to participate in the study was chosen for the purpose (Lemeshow & Levy, 1991).

The lecturer for the course was notified and requested. With permission, the researcher announced the study to the students. An introduction with full names, the name of the research and the value of the student were explained. Another important explanation made to the students

regarding the study was the choice of the class and the benefits that their input would make towards the objectives of the research and the use of podcasts ultimately. However, as Lemeshow and Levy (1991) strongly recommends, the students were informed that participation in the exercise was voluntary and a consent note was read to them for purposes of time, but copies were also carried for those who wanted one.

A participation sheet had been prepared from which the student would provide means for which the researcher would communicate with them. The specific details include the region the student is from, the full names, e-mail, student number and phone number (mobile or otherwise) and for confirmatory purposes, the year of study and module/course. An appending signature to the details and agreement to participate in the study was required. In addition to this, students were informed of the various tools of the research that will be used (Gillham, 2000). Namely, they were informed of a podcast website on the module, for whose launch they shall be informed, an interview and the feedback system in the podcast website, the use of an electronic or physical questionnaire was mentioned too. Repeatedly, the same procedure was followed in other regions. Travelling challenges were encountered due to costs but the crucial part of the study had to be executed without flaws.

A variation in the means of collecting data was relayed to the participants such that, due to geographical challenges, some of the students will be interviewed in person whereas some will be interviewed on phone. Interviews were to be arranged on basis of focus groups that will aid in saving time and getting varied opinion. The order of use of the tools was highlighted since some of the tools required that students be exposed to the podcast website first, for example, the questionnaires and some of the interview questions (Fowler, 2009).

In all this, students were welcomed to ask clarification about the research in person or by raising question after the researcher had made introductions and explained the aspects of the study (Cohen et. al, 2000). One on one conversations were also welcomed after the class and to ensure that no one was left out, the researchers e-mail address and phone number was given to the students for clarification purposes at this point and any point of the research. It was explained clearly that the personal details entrusted in the course of the research will not be disclosed.

4.4 DESIGN OF THE PODCAST WEBSITE

4.4.1 Pilot project: *Building of the podcast website and content*

Website creation can be tasking and costly at the same time. However, it is important that indeed the website be present to handle the podcast pilot project. Looking into various alternatives for achieving the goal, it was realised that there are larger websites which support multiple handles or mini-websites for which dissemination of podcasts and related media which can be done free or at a little fee which is fair and acceptable depending on the use intended. For this case, IONO FM's services were employed. IONO FM's is an international web- based broadcast handle that supports people to distribute and listen to news, podcasts as well as audio books. Their services are mainly free although for various additional features, a fee is required.

In IONO FM, an account for broadcasting content was created allocated channel 1319 and customisations done to create a 1319 website for the MPEDU modules. The duration of use of the channel was specified to end on February 2013 for which the test period of the podcast was deemed sufficient for the purposes of this research. The start date was in scheduled for June with a little time before allocated before for uploading and testing the site. On the 20th of June 2012, students were informed to start using the services as soon as everything was uploaded and ready.

Prelaunch and post launch processes capture every aspect of making the podcasts to reach full usage and meet study objectives. The steps included:

- obtaining material and making scripts for the MPEDU module;
- recording of the podcasts;
- development of the MPEDU website (<http://iono.fm/channel/1319>);
- uploading of the podcasts to the MPEDU 1319 channel;
- creation of comment tool on the MPEDU podcast broadcast channel;
- announcement to students about the pilot project;
- signing of the students indicating intent to participate in the study;

- send bulk SMSes to students to notify them that the site is ready for use on the 20th of June 2012.
- students given access to the material after registering on the website;
- registration trend was observed, recorded and analysed.
- number of students listening to podcasts observed, recorded and analysed; and
- mobile devices used to access website observed and recorded.

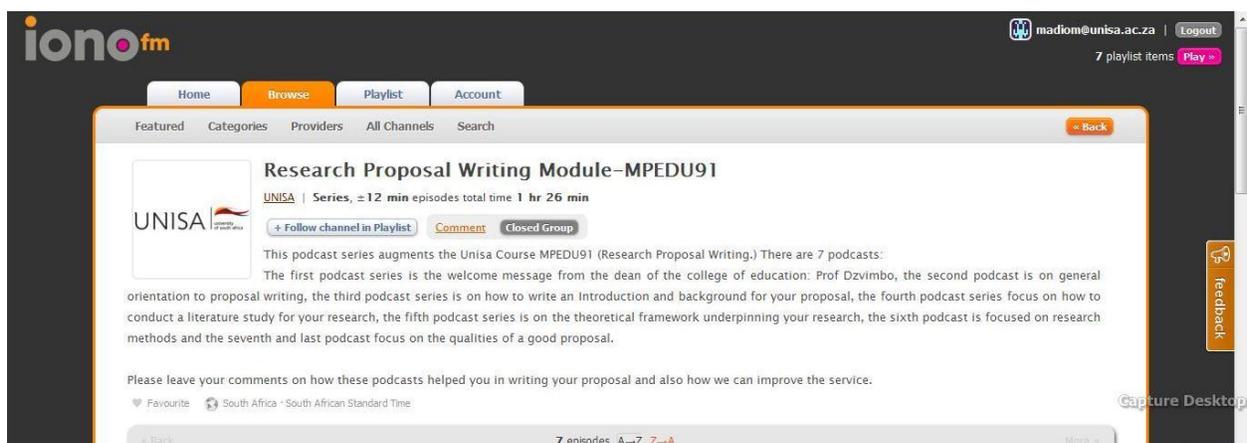


Figure 6: Screen shot of the website main page

4.4.1.1 Obtaining material and making scripts for the MPEDU module

Research proposal writing has its course outline and this is instrumental in making the content that is disbursed relevant and since it will be used for practical substitution of other material, research ethics dictates that the right content be made. To do this, the content of the course was obtained from the faculty offices and discussed on matters of depth. Upon consultation, 6 critical areas were identified for which scripts would be written and posted on the website. One more podcast was created for welcoming purposes, with voice by the Dean of the College of Education in Prof. Dzvimbo.

Script 1: General overview of research proposal writing

The general overview of a research proposal script deals with a step by step process of planning and giving structure to the research to be undertaken. It conveys the plan of the entire research study along with justification for conducting it. The recorded audio podcast will discuss the **WHAT, WHY** and **HOW** of research proposal.



Figure 7: Screen shot of some of the podcasts

Script 2: Introduction and background

The introduction and background to the proposed study script orients the reader to the problem under study. The purpose of the audio podcast to be recorded is to discuss the components of the introduction and background of the proposed study.

Script 3: Literature study

Reviewing literature script assists the students with a way of situating his or her proposed study within the context of existing pertinent literature of proposed study. A good literature review demonstrates that you know your field of study. The purpose of the audio podcast to be recorded using the script is to guide students on how to identify literature pertinent to your proposed study and how to critically analyse this literature.



Figure 8: Sample podcasts in the website

Script 4: Theoretical frameworks

The research framework script explains the role of frameworks in a research. A framework is a basic structure of ideas, principles, agreements or rules that serves as a basis for a phenomenon that is to be investigated. The purpose of the audio podcast is to enable students to identify and apply the relevant research framework underpinning your proposed study.

Script 5: Research design and methods

The aim of the research design and method script explains how the inquiry will be approached showing the specific design and methods. The purpose of the audio podcast is to enable students to identify and select the design and methods of the proposed research study.

Script 6: Qualities of a research proposal

Research proposals have attributes and expected projections that are very common to them. It is important to realise this that may include details that include tense and tone. The script explains the qualities that are expected that even includes presenting all details and activities in terms of the future. Students need to understand the qualities and how to bring them out to get good quality output that will be approved. That forms the main aim of the podcast created from this particular script.

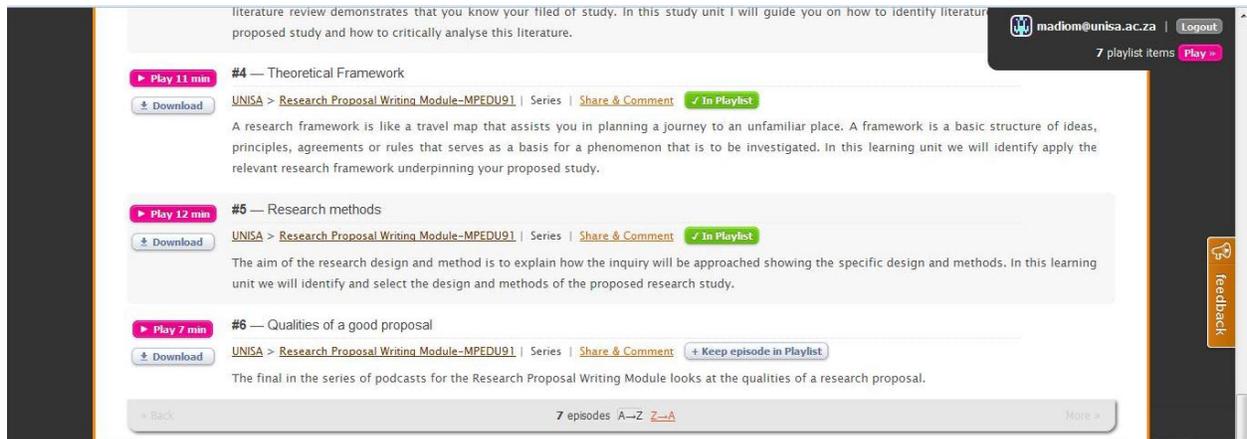


Figure 9: Sample podcasts from the website

4.4.1.2 Recording of the podcasts

Using the written scripts, audio recordings were the desired products. There are several aspects of the audio recordings that required considerations due to their effects on the quality of delivery. The noted aspects included the voice to be used and the area of recording to have quality output. Reputation was a key instrument in identifying the place to record the scripts. IONO FM was selected and they came with Voice testing which was a fundamental part of the as the process and two voices were considered. One was from the researcher and the other was a volunteering friend. Upon comparison, the other was selected and other participants were selected as the better option. Cost was also a factor.

4.4.1.3 Development of the MPEDU website (<http://iono.fm/channel/1319>)

Basic steps in creation of a broadcasting channel started with creation of a personal account which includes the submission of personal email and creation of a password. Students were invited via email to join IONO FM website and to create accounts using their Unisa emails and also create passwords. To ensure that the podcasts were directed only to the members of the sample, a closed group was part of the setting that was incorporated in the creation of the channel. Since the IONO FM provides a platform for the creation of separate channels, that made the process easy and comfortable for non-technical persona.

4.4.1.4 Uploading of the podcasts to the MPEDU 1319 channel

After recording confirmation of the supported formats of the podcasts was done and verified to be MP3 format for which most of the mobile devices and playback equipment can use. Upload

procedures were simple and included selection of source file, upload and subsequent renaming for suitability. To add to that, a simple explanation of the content inside each podcast was provided by the website to give a summary of what the student should expect from the podcast. All seven uploads followed the same procedure and an introductory message was added for generalisation of the whole MPEDU 1319 channel content.

4.4.1.5 Creation of comment tool on the MPEDU podcast broadcast channel

As part of the elements for which the attitudes, thoughts and feelings of the respondents, it was deemed important that the experiences of the students be absorbed at the website as a direct contribution to the evaluation of the ability of the podcasts to meet their needs. For that reason, a feedback/comment tool was selected and activated at the website to collect information from the students who used the podcasts. The tool was to be accessed at the right hand side of the screen and the procedure made easy to tap into any thoughts that the respondent may have as many times as he or she would please during the whole project period. The content was accessed in the administrative console of the website along with other statistics that were deemed necessary.

4.4.1.6 Announcement to students about the pilot project

Tests were done on the accessibility of the material from the website to ensure that the performance does not become a problem for which the students will be discouraged. Now the site was declared ready for use. The target for the pilot project, masters' students of the research proposal writing course were notified at their gathering about the research and the podcast project and the start of registrations for using the website. Questions regarding the project were raised and discussed or answered appropriately so that the students had a clear picture of the project, its objectives and importance as well as their role in the success of the project.

4.4.1.7 Signing of the students indicating intent to participate in the study

Participants of the study were required to enter their data onto a list that would be used by the researcher for formalities as well as communication purposes. Prior to writing details, research consent note was read to the students, and copies of the consent note were available for collection for those who needed one. The list contained the full name of the respondent, the

registration number, email address, region and phone number. At the last column, a signature was required to authenticate the acceptance to participate in the study.

4.4.1.8 Send bulk SMSes to students to notify them that the site is ready for use and how to access the website

Using the contacts obtained on the registration of the respondents for participation, bulk SMSes' were sent notifying them of the availability of the materials, the website (<http://iono.fm/channel/1319>) and where to get other information that would be useful in using the website. To avoid confusion, a document was created that explained in detail the registration process as well as the simple access and usage procedures. The information was sent on the 20th of June 2012 and the day marked the first day of use of the website. Emails were also sent to ensure that no respondent was left out of the launch.

4.4.1.9 Observation of data necessary for the study

Part of the interest of the pilot project was to observe various aspects of the project that may give indicative factors of the impact the podcast has on the students or the level of use that it has on their studies. Some of the data collected for observation include the registration trend in the website, the use of the podcasts after registration and the gadgets that were used in accessing the website. Increments or decline of registration and use would have an interpretation that would go into analysis of the study. In the same fashion, the gadgets that the students use in accessing the website along with other data collected from other tools can give reason as to why the results appear the way they are. All this was done from the administrative console of the website or upon liaising with the main administrators of the larger IONO FM website.

4.5 DATA COLLECTION INSTRUMENTS

4.5.1 Questionnaires

Notably, it is a method that can be used to collect statistical (quantitative) data as well as qualitative data. As an essential part identified for data collection according to **figure 1**, a questionnaire is a research tool comprising instructions and questions (including answering space) which have been tailored for particular purpose for which the study is based. Berdie et al. (1986) emphasises that indeed the questions in the research should not just be coined from

anywhere, but should be objective and in line with the research questions of the study. It is also specified according to Labaw (1980), that the purpose of the research should be known to the respondent and indeed, the channel for getting the feedback or results should be given where applicable.

Elements in the questionnaire divide the questionnaires further into subcategories or subtypes. On one hand, based on the mode of issue of the questionnaire, ones which are mailed to the respondent to fill at their own time and pleasure are known as **self-administered** questionnaires. While on the same note, ones which are read to the respondent and the answers are called **structured interviews**. On the other hand, there is another twist to questionnaires in terms of the questions which are contained in it. **Open-ended** questions are those left out for the respondent to put in everything in their own words. It is these types of questions that create a qualitative aspect into questionnaires. Questions which give a Yes/ No/ “Don’t know” answer or on more complex scenarios Likert scale-based questions are **closed-ended** in that respect. For that reason, they yield data which can be put in statistical format and hence give questionnaires the quantitative aspect.

4.5.1.1 Advantages of questionnaires

As mentioned earlier, there is a dynamic accessory to using questionnaires that enables the researcher to be absent during the time of completing the questionnaire, in other words, using a self-administered questionnaire that can be sent via mail to the respondents. After identifying the group of people who will receive the questionnaire, it is easy to send the questionnaires to many respondents.

In addition to that, standardisation is possible with use of this tool. In most cases, a single questionnaire is made and is used to serve the needs of the researcher for the entire sample that would be used in the study. Therefore, all the respondents would answer the same questions that give it added reliability as a method of conducting research. The use of this method has been an area of interest to many people who over the years have developed explanatory steps in creating questionnaires. It is easy to make a questionnaire for that reason (Labaw, 1980). On that thought, thereafter, respondents do a part in self-administered questionnaires that eliminates time usage

by the presence of the researcher. That leaves the other coding and interpretation to the researcher and which as fairly described by scholars is not hard and can be learned.

Arguably, the presence of a person is a two-way sword that is observed to affect the respondent's honesty in research. In cases where indeed the question asked is very private and the respondent's answer would put him or her a risk, it is very probable that they will provide an answer that will not compromise him as opposed to giving honest information. When done in private, the security that indeed no one is present to place judgemental accusations to him/her will result in honesty on the cover of anonymity.

In some cases which may also be captured in this research, the spread of the sample under study can be over a large geographical area and that would bring many challenges that include consumption of time and money. However, with the use of questionnaires, it is possible to alleviate such challenges by using conventional mailing addresses, emails and or telephone calls to administer the questionnaires to the sample.

Research faces immense challenges that include stopping a person, selected to be a sample in the study and convincing them to allocate time to your study despite their busy schedule (Labaw, 1980). At times the length of time is a factor that leads to fall out of sample and thus forms an area of great concern. When self-administered, a questionnaire gives the client room to fill it at his or her pace and provides convenience. Also, when administered through telephone calls, an agreed time can be arranged giving the same level of convenience that ensures no fall outs due to time consumption.

In some cases, the sample to be used may be disabled to some level. The tools give consideration to this group of people by giving alternate means, for example, through calling, the respondent only has to listen to the question and give the appropriate answer. That will ease the process and give allowance for the disabled to participate without being segregated. As a characteristic of qualitative research, the researcher is required to look for respondents who will give more information. In structured interviews that will occur face to face, it is possible to have a selection and finally chose a sample that will enrich the study to a satisfactory level. Apart from that, the

interview can be long and other aspects that can give more detail can be used. This includes graphical representation of useful information.

4.5.1.2 Disadvantages of questionnaires

Based on the fact that it requires minimum supervision especially when using self-administered type of questionnaires, it is hard to really know whether the intended target completed the questionnaire or the person just filled the questionnaire without caring what impact it will have on the study being carried out. An example would be a man completing a questionnaire that was intended for women or an old lady completing a questionnaire meant for young ladies. It is also known according to the research in the use of this tool that indeed the response rate of questionnaires especially when they are mailed to the samples is very low and usually, within 20%- 30% of the selected sample returns the completed questionnaires. That makes it very hard to rely on especially if the response rate is low. Structured interviews rarely have this challenge as is it most common in self-administered questionnaires.

Response from the respondents in a low response rate may not represent the views of the whole population since the ones who usually reply are mostly the opinionated and this may give a response that is inclined to one way of thinking as opposed to getting a fair representation of how the population feels about the matter at hand.

There are instances where the depth that is required by the researcher may not be realised especially in his absence. Although giving open-ended questions is meant to give room for more details, it is unlikely in most cases that all the respondents will give responses that can be deemed fully sufficient for the study. However, this is a challenge for most of the research tools that are currently available.

Answering questions from a questionnaire is highly determined by whether it has been understood. In cases where the researcher is not present, it is hard to really know whether the questions have been understood. It is important since at this point not many of the respondents think of clarifying the true meaning from the researcher (Berdie et al., 1986). To add to that, the interpretation of the questions in a questionnaire, should be the same as what was intended by the researcher initially. Any loophole that can make one fraction of the sample to have a different

interpretation from the rest should be eliminated. It is for this reason that the questionnaire should be taken for a pilot test before being released to the actual data collection sample.

In situations where the option used is a structured interview, it is important that the interviewer should have training so that he or she can maintain objectivity and get maximum details on the subjects of interest to the study. This also comes in handy in picking the person to take information from (purposive sampling) which in this case is the most appropriate. On the same structured interview, the amount of time consumed, the costs and requirements of labour is a little more than what one would expect from other methods of collecting data.

Assumptions that the sample being used for mailed questionnaires can read and write is not appropriate. Disabled people who may have visual problems as well as language barriers have not been factored into the considerations that in most cases occur. It therefore creates automatic elimination if the researcher does not have any knowledge of the existence of such samples. This adds to the lowering of the response rate. Length or amount of questions is quite limited for questionnaires sent through mail. This is to avoid respondents finding it tedious and very time consuming leading to lack of response. It therefore limits the scope for which the research can cover and in that regard the depth too. Structured interviews cater for situations where the length of the questions necessitates the presence of the researcher (Labaw, 1980).

Bias in the case of mailed questionnaires is evident especially since there is no control over who answers and who does not. It is a fact that indeed may sometimes be unavoidable and its effect can make the results of the study not to be valid at all or to some certain extent. Mostly, the probability that a particular group of the sample (one sharing a particular opinion or characteristic) may be the most active and this is what leads to bias.

4.5.1.3 Important considerations in designing a questionnaire

There are various considerations that are crucial in making sure that the questionnaire fulfils its role as well as meets the standards. One important fact that should be known is the target of the questionnaire and the means through which the questionnaire will be issued as pertains to either self-administration (postal, email) or structured interviews. Other prerequisites that have been discussed include the sampling techniques for the process (Fowler, 2009). Knowledge about the

population will be instrumental in narrowing down the research and having a background of whether they will give significant contribution to the research. Other issues at this stage would include the steps that will be used in analysing the data to make meaning.

On another note, the questions form the core of the questionnaire and as such require considerable care and thoroughness to ensure that it meets the objectives of the study. There is no standard way of writing good questions, but there are notably some that should be avoided. For some other types of research, there are standard questions which have been formulated by experts so as to give any research in that realm a comparative angle. Guidelines have also been written to help eliminate and to ensure that questions (1) Add considerable amount of value to the research and area of interest (2) Do not create confusion to the respondents to create different understanding of the same question (3) Should be clear and easy to comprehend.

Organisation of the questions is another important element that should be remembered such that the questions create a flow as well as avoids confusion. In that regard, for a particular interest, the questions related to the same should be kept in the same group. At the beginning, it is advised that the questions should be those that do not increase tension or create an impression that may discourage the respondent from continuing. To be incorporated also are questions which cater for any segregation or inequality that may arise. Such questions include gender, ethnicity or disability. For that, the research can be argued to have representatives from all parties in the population. Caution should be taken to ensure that some of the questions only appear when necessary (if the research requires it) and not for the sake of collecting data since the information is quite sensitive.

An important addition prior to the main exercise is undertaking a pilot test for the questionnaire. As documented by Labaw (1980), it helps in identifying faults in the question and structure in the questions to avoid confusion, vagueness and eliminate grammatical errors. A small sample, as well as consultations from experts can be used to get the understanding of the people on the questionnaire and their ability to answer the questions to the satisfaction of the researcher. After that, corrections are to be made before issuing the final questionnaire.

Maximising responses as well as guarantee of confidentiality is another important aspect that should be considered. A commitment in writing as part of the questionnaire assuring the respondent that the information disclosed will not be used for any other purpose and no-disclosure guarantee is part of research ethics. This can be in the introductory part of the questionnaire (McBurney & White, 2009). Depending on the method that will be used, there are other additives that go a long way to ensure that the responses are increased. Some of the ideas include sending reminder letters, reply payment for postal-based questionnaires, using introductory letters that emphasise on the value of the feedback from the respondent, incentives (optional) and using coloured paper or quality printing for better appearance to appeal to the respondents.

4.5.1.4 Immerring issues in using questionnaires

On a high note, the ease of use of questionnaires has been applauded. It is easy for any researcher to create questionnaire that meets required elements. In the same fashion, respondents can follow instructions given in questionnaires and fill them correctly even in the absence of the researcher (self-administered questionnaires). Time consumption in some cases is usually on the respondent's part while the researcher can do other activities that are part of the study, with the exception of structured interviews.

In addition to that, if the sampling technique is acceptable, the numbers can be increased such that a larger portion of the population being studied is used in the study. Using accurate analysis tools, the results can be generalised to be that of the whole population. In several instances, the whole population can be used to get results. Its application to large samples is what makes the generalisation of the data very acceptable (Presser, 2004).

On the issue of validity, some elements in use of questionnaires make the results to have low validity. On a discussion above, it was mentioned that the limitation of questionnaires is that at times, the level of depth that one can go to understand the response of the respondent especially on complicated issues is not very sufficient (Williams, 2009). A tag is especially laid on closed-ended questions used in questionnaires at times, giving no other alternative apart from that which has been indicated therein. Also, the questions asked are biased to the importance as ranked by

the researcher. It is therefore arguable that important information can be left out if it does not fall into importance weigh scale used by the researcher. However, the fact that in the absence of the researcher, the respondents may give truthful and accurate information is an aspect that makes a significant increase in validity. Consulting others in the questions to be included in the questionnaire also eliminates skipping of important details that need to be captured.

Scholars and researchers have rated the reliability of the results obtained through questionnaires very highly. On condition that the necessary or crucial areas in designing a questionnaire are followed and requirements are satisfied. Narrowing down areas of error (misinterpretation), for example, in quantifying closed-ended answers in the results is an aspect quoted by Presser (2004). In self-administered type of questionnaires, all the respondents answer the exact same questions (standardisation) meaning that there is no room for deviant reasoning on the part of the respondents. It also gives room for replication of the same study by another researcher. All these were given consideration in making the questionnaire that was used in this study.

4.5.2 Observation

An attempt that can be described as trying to listen to something or watching something can be termed as observing (Bogdan, 1972). In research, the same is applied only that the main purpose is to get information. A characteristic that would denote this is the taking of short notes or any form of recording for future reference or use. To further heighten the level of attention and information received in research observations, techniques have been developed and recommendations made on how best a researcher can use this tool for effective data collection that will help in his or her study.

Due to the differences that are attributed to the different techniques used, there emerge several types of observation which were put to scale to determine which one is best fit for this study. One of the observation methods is called participant observation. As the name suggests, the researcher becomes one with the population under study. Specifications are given on the interaction that should take place between the researcher and the population and defines the roles they play. Data collection procedures and analysis are also specified in this type of observation and to achieve its goals, time is of essence to it. Years, in the very least, several months will be

used to fully achieve the goals set for such kind of observation. Part of the reason is to ensure that the researcher has been absorbed and the individuals or elements in the study are now considered part of nature in the setting.

Differing from participant observation, direct observation alienates itself completely from the test subjects so that even the elements under test should not be aware of the process. Bias is reduced by ensuring that obstruction does not occur at any point. A good example would be the use of technology that does not redirect the link back to the researcher, such as video cameras, observation rooms with one way mirrors and data loggers in websites, experimental and software-related activities. Objectivity that is achieved is higher than in participant observation since the energy is direct to one goal of the study as opposed to trying to blend in as well. Time as mentioned in the explanation above is not very specific in this type of observation since it is only dependent to the start and end of the activities of interest. Provided data have been recorded without interference with the natural environment of the elements under study, the objectives will be achieved if the activity stops at any time.

4.5.2.1 Reasons for using observation

Depth of information regarding phenomena in the study can be obtained to give meaning and explain variables that affect the phenomena. It can provide deeper understanding of various elements in the study along with enriching various aspects of the research. As compared to other methods, with training, there is no neglect of information that may be crucial (McBurney & White, 2009). In that case, everything that happens is recorded and thus in any eventuality can give meaning to various issues that emerge.

Interaction with the participants in any research has its advantages, but has been noted to make the respondents deviate from normal behaviour, or give false information for fear of exposure. As a remedy for this observation especially the type employed by this study (direct observation) does not interact with the sample and it stays away recording data (May, 2002). The natural state and activities that would have taken place happen in that manner. It means that the data obtained are void of changes of the sample and thus giving it accuracy and high validity.

Most of the methods used in research give the researcher a chance to use his or her tools to study one respondent at a time. Using observation, the researcher can take time to look into the respondents in groups of convenience that makes it easier. These groups are not created by the researcher but emerge in the course of the study. Interaction of the groups and members in the natural setting is also at the disposal of the researcher to use to make meaning for any issues or phenomena in the study.

Continuity is a factor that is not catered for by most of the tools in research. One aspect of the use of observation is the fact the phenomena in the research is studied for a period of time under its natural coexistence with the respondents in the study. It therefore alienates temporal responses that may be present to obtain the real situation over time (Glenn, 2010). Changes can be noted through that.

It emerges at times in research that the respondents in the study may not be cooperative for tools such as interviews and totally refuse to take part in the study if other methods are not implemented. Although it depends on the situation and objects of interest in the study, if the elements do not breach research ethics, it is possible to conduct the study using this tool which does not require the direct interaction with the respondents. In this case, the method was chosen for its lack of interaction leaving the respondents in their natural processes which eliminates errors or behaviour that may be due to any interaction that is initiated between the two parties, the researcher and the respondents (Guthrie, 2010). Notably, direct observation was used in this study with the aid of special technology embedded in the website that allows one to keep records of the activities that go on.

4.5.3 Case study

In any data collection method, there is considerable limited content on a comparative basis as compared to other methods of conducting research. In its definition, the aspect of bringing systematic inquiry into related events is what appealed most to this study to warrant its use. Unlike other methods, its sources can be varied. Some of the possible methods of collecting data for its purpose can be records, interviews and observation all which are present in this study (Yin, 2003). It is agreed by most scholars not to belong to a specific category of methods, that is,

either quantitative and qualitative and thus its use to cut across both groups and is essential in utilising the other methods to make important inferences that enrich the research and also enables understanding of the research.

Information has so far shown that there are different case study types and the usage and needs of the study to determine the method that is best suited for the study. For this study, it was a major area of interest on how the students will behave on the podcast pilot project that was initiated and a subject of interest to the study. In that case, the types of case study are presented for (1) Studying elements over time (2) Breaking the units into smaller units synchronically for co-variation analysis (3) Breaks elements diachronically and synchronically for analysis. The goal and the role assigned to this tool was one of studying the behaviour of the students towards the podcasts over the research period.

Determination of units of analysis and cases were crucial as well as recognition of the need of skills from the researcher to effectively use this tool to enrich the study. Some of the skills and requirements of the method are:

- unbiased collection of data in the respect of relevance. Any data was to be collected and its relevance determined in the course of analysis and not on the collection stage;
- interaction and communication skills such as good listening;
- adaptability to arising issue and circumstances in the study will enable the researcher to notice any new elements that could be of importance to the study;
- good question that will meet the objectives of the study and enrich the research;
- sufficient knowledge on the phenomena that is of interest to the study; and
- maintaining evidence collected and creation of a database for the same.

Analysing the data will come into several considerations that are inclusive of looking out for patterns that may suggest relation of the variables and using the data for explanations of observed changes in the study (Gillham, 2000). Danger of drifting away from the initial path of

the research is possible and should be avoided to ensure that the quality of the results is not compromised.

4.5.4 Interviews

Interviews are basically verbal communications between a researcher and a subject from whom communications made in that context are valued for the study. In that case, there is data collection from the interaction between the two parties that is dependent on the type of interview that is taken. There are two major classifications of interviews (Vaughn 1996). Structured and non-structured are the major classifications that can be made in interviews. As discussed in the preceding questionnaires, in the eventuality that a questionnaire is used for an interview, the specific nature of the questions to be asked and the interest induced by the closed-ended questions make it a structured interview. If the questions are generated at the time of the interview to probe and further explorations into the matter, that makes the interview to be unstructured. The main purpose of unstructured interviews is essentially to get in-depth knowledge.

4.5.4.1 Structured interviews versus unstructured interviews

As guiding aids to the interview, questions are formulated in a questionnaire and may be composed of open-ended questions or closed-ended questions. The major advantage of this method is that it limits the deviation that the interviewer can have when asking the interviewee questions. It has been noted with concern that there are indeed situations where the deviation from the topics of interest has rendered the time spent as a total waste (Green et al., 2006). Harsh as it may seem, the objectives and aims of the research are the threshold that the interview should meet and that add more value to the study. If it does not meet these requirements, it is of no use to the study.

In noting a need for unstructured interviews, the depth to which the structured interviews was believed to be wanting and for certain responses, the vagueness would lead to wrong conclusions which may misguide the study. As an advantage, soliciting genuine responses that are guided by the attitudes, behaviour and feelings that may be noted is the basis of forming any more

questions to be laid to the interviewee. To avoid deviating, guidelines may be formulated that will be used to give probing areas as study interest may give.

In view of these deviant opinions and the need for the contribution of both interviews, the researcher will be guided by the formulated questionnaire that will be sent to the respondents but significant probing is allowed to better understand the stand, feelings and attitudes of the interviewee on the matter. On need basis, if a particular interest emerges, the interviewer is open to add question and answers to the existing questionnaire. Nonetheless, the questions in the questionnaire will be asked as a minimum threshold to the study.

4.5.4.2 Advantages of interviews

Much can be said about the benefits of interaction. Most of the methods used in research lack that human touch that may put the respondent at ease and solicit more information. One of the elements of personal interaction is the element of persuasion that can be employed to convince the respondent to give more information (Seidman, 1998). Elements of cooperation and confidence in word promise for certain information also contributed to participants feeling part and parcel of the quest for knowledge in the areas of interest of the study.

Clearly, the limitation of extent of information obtained has been a subject of debate and refute of other methods of data collection. In interviews, a particular issue can be explored thoroughly to give the exact meaning and thus enrich the research. For this reason, bias that is at times brought forth by pursuing matters that are important on opinion of the researcher and limits the identification of all factors and variables is eliminated. It is in this method that indeed the response from the interviewee or respondent for that matter can be understood fully.

Challenges emerge when data collection methods do not use interaction between the respondent and the researcher. One of the greatest challenges is getting the respondent to actually find interest in the study enough to respond. As scholars have noted over the years, many data collection methods are challenged because of that. Using the interaction, interviews have better response rate thus ensuring that only a particular group in the population is sampled. That gives more validity and reliability to the research. By using this method, this study will reap these benefits.

Marginalising some people in a population happens in most cases where the contact to establish that there is special case is not there. Collection of research data through written communication segregates visually-impaired persons, the uneducated and people who are challenged by languages in the methods used. Physical presence caters for the defects and will create improvisation to ensure that every unique group in the population is represented. What they want to express in the research will be understood well and enrich the study.

4.5.4.3 Disadvantages of interviews

More information comes at a price and one of them is the time that will be consumed in extracting them from the interviewee. The data collection method relies on the issues that arise from a particular interaction with a respondent and is inclined to follow the lead or pointers that are given by the interviewee. Self-explanation might be an easy task for some but to others, getting a point through may require more time or even to open up and engage the interviewer to getting information.

Another aspect that challenges the use of this method is the volume of data that can be collected. As mentioned above, it takes time to collect data from a single source and integrating the same average on other respondents, it takes more time and the financial resources to be used also increase tremendously with the increase in the number of interviewees. It therefore poses a challenge that reduces the number of samples that can be used in this method. The only solution is in increasing the duration if the costs that will be accrued will not be a problem.

The amount of data that will be collected is another matter. As much as more is good to avoid gaps, analysing loads of data is difficult and at times yields to errors and omissions in some instances that may compromise the quality of the research. In research, data should be manageable in accordance to the interpretation and analysis tools that will be used. As Seidman (1998) discusses, it is not enough to just collect data but the analysis and inferences that are made are equally important.

In purely unstructured interviews, the questions generated are not set before but created at the point of interaction. Bias is introduced to the interview since the replication of the same questions for the entire sample is not always done. As pointed out by Vaughn (1996), the

inconsistency in the method is a threat to the validity and reliability of the results obtained by the research. One of the means to tackle this problem is training the interviewer and to avoid deviating from the subject or topic of interest of the research, and assigning the researcher as the interviewer with proper preparation and or training.

4.5.4.4 Interview process and important roles in the process

Selection of the sample and literature review to create a self-training experience on what to look out for to ensure that maximisation of the tools is made with the required skills and procedures. For this purpose, the interview was to be similar to the questionnaire that was sent to other respondents but allow for more probing on need basis to understand what the respondent meant. For that reason, the interview can be said to be partially structured since the questions in the questionnaire were used as the minimum threshold for the interview.

Meetings were set for some of the respondents while others were also done through the phone due to logistic challenges. First, a convenient time was set for either situation so that the client and the interviewer set aside time for the interview (Kvale, 1996). Time was considered as an issue and was discussed depending on the way the interview was to be carried out, that is, either in person or on phone call. It is important that the respondent have a clear mind with no awaiting commitments that may hinder the interview.

Rapport is another important element that is essential to ensure that the respondents have an easy time handling the process. In the introduction to the respondents and invitation to take part in the study, it was made clear that the researcher is a PhD student and that is a relief that shows a common platform with the masters' students. The initial interaction was in a classroom setting for the Research proposal writing and the acceptance of the students was helpful. Also, in making schedules and communications over the phone, a friendly tone was set with major flexibility to dissolve excess formalities that may come in the way of information sharing. Before starting the interview, an off the record session that included introduction and a friendly chat was used to dilute any tension and put the interviewee at ease.

In addition to that, assurance of the confidentiality and appreciation for the participation was done. A brief explanation of the study was done too. Gadgets and any tools to be used in the study were explained and their use and importance highlighted. Aspects that include, the flexibility of the interviewer in explaining issues that the respondent did not understand were tabled. Once all this was done and the interviewee acknowledged being comfortable with the process, the interview session begun.

Gestures and sound to indicate interest was used to fuel the interviewer's role as a facilitator of the interviewee to make significant contribution to the topic and this was exhaustive. Nodding was used and occasional sounds indicating surprise and agreement just to indicate a few (Powney & Watts, 1987). Probes were used as well as means of asking for elaboration to ensure that no stone was unturned or any vague answers from a neutral stand point to avoid showing any opinion. To add to that, tracking and clarifications were done to what was done to the interviewees' comments and at the end a reflective summary to make sure that they repeat their attitudes and ideas as initially put across.

4.5.5 Student narrative

In its description, student narrative is a form of self-reporting that has been used as an important tool in modern day research. For elements that involve the human behaviour and closely related phenomena that deal with the response to certain stimuli, the personal expression has received commendable support. Physical doctors even use the method for help in disease diagnostics just to stretch the scope of imagination of its use.

Closer home, methods related to self-reporting are non-filtering aids that help collect data without the errors related either to bias or inclination to certain details. Feelings, attitudes and opinions can be harnessed through this means and depending on the circumstance, the probability of finding very truthful as well as reliable feedback is possible. As Denzin et al. (1994) put it, the respondent should not be cornered to make such reports since they may be done for convenience. In such cases, the probability of deceit and irrelevant answers would be high and this would not add any value to the research but rather misguide the findings.

How then is the timing and convenience supposed to be done? Targeting the most honest and appropriate moment for asking such reports can be hard. For this research, a method that did not involve the researcher or pushing to declare this was seen as a favourable means to tap into this data (Webster & Mertova, 2007). In the podcast pilot project, the user interface of the use of the podcasts formed a good scene to post any related leads to welcome feedback, since it would be most probably about the service. For that reason, a feedback icon was attached to the right hand side, mid-way in the page for interested students. Through that, willingness and sincerity were targeted. Collection of the feedback was done through collaboration with the administrators of the main site. Such information was analysed as opinions from the students and any significant understanding that was derived from this about the other data obtained has enriched the findings of the research (Somekh & Lewin, 2005).

4.6 DATA COLLECTION PROCEDURES

4.6.1 Questionnaires

After design, consultations were first made on the questionnaire regarding the questions therein and any significant additions that gave it a different point of view from the researcher's. In essence, leaving out any information based on what may feel important to the researcher was avoided. First, a pilot test was made to ensure that the questionnaire did not have any faults or the questions in it did not solicit conflicting understanding from what was intended. In that case, five participants were selected and an email was sent to them containing the questionnaire. A response was awaited and confirmed that indeed it met threshold and standards that were crucial to this project. After that, adjustments were done to create a final questionnaire that would be sent to the rest of the respondents via email (Executive Learning, Inc., 1995). The questionnaire that was sent is attached in the appendices section.

Proceeding to the main activity, a list of respondent emails had been collected during the sign up for the participation. A uniform email for introduction was composed and the questionnaire was attached. Upon entering the full contact list, the email was sent to the respondents. Regular checks were done on the email for clarification messages from the respondents on any issues. Upon receiving feedback, the data were stored on an internal folder in a personal computer and a back-up of the same on a one-task flash drive (meant only to store survey data). For any

eventuality, including viruses, a significant amount of the questionnaires was burned to compact disks (CDs) as a third and final back up.

Appreciation messages were sent to the respondents after receiving feedback. The appreciation message was uniform. As a strategy to increase the number of respondents, a reminder email and acknowledgement of the value of the response to the research was done after crossing the already received feedback from this mail list. Care was done not to put too much pressure on the respondents so that they do not put incorrect information for the sake of getting it out of their hair.

4.6.2 Observation

Podcast pilot test was the main application zone for the observation. The natural setting of the website was to be used to observe the way the students utilised the website without any physical pressure but on free will. This was to replicate the situation where the website would be used in application. Key information was based on the number of students who registered for the service, the time they did it, the number of access that the registered students made and ultimately the kind of devices that they used.

Information from this exercise was obtained upon collaboration with the administrators of the main website IONO FM who were informed of the role of the podcasts in the project and the type of information that was required. Monthly reports were generated with the information in figures as well as graphical representations that included tables and graphs. Data were stored in another folder indicating the source of the information under the procedures discussed above. It was deemed necessary to get third party help from the administrators to give an unbiased angle. To further remove any possibility of inclination to any data, the data collected were made through website management software that is accurate and very particular to the details without segregation (Axinn & Pearce, 2006).

4.6.3 Interview

Organisation of the interview was done via phone communication where the researcher contacted the respondent and asked for a chance to conduct an interview. To clear the air, the researcher made the respondent feel comfortable with accepting the interview by considerable persuasion

and friendly tone. Convenience was held important such that the respondent should not be in a hurry to finish the interview. That would make him or her answer questions hurriedly to go into the next activity. On the scheduled day, a follow up call was made to ensure that the respondent does not schedule other activities that may hinder the full concentration on the interview.

A site was chosen by the researcher and was to the preference of the interviewee, either indoors or outdoors in the same place (Sapsford & Jupp, 1996). To dilute tension and other unwanted formality strings, the interviewer started with introduction and conversations that were not related to the interview, to create a rapport and make the interviewee feel at ease and to get him or her to open up. Gadgets that will be used in the interview process were introduced to the interviewee and their role outlined. The importance of the contribution and further appreciation for taking part in the study was done at this stage.

After that, the official interview began following the set questionnaire as a guide to the area of interests of the study. Probing was done among other techniques that included use of sound and physical expressions to lead on the interviewee to give more information. Care was taken not to deviate from the subject of the research and to avoid situation where the researcher's opinion would come out and affect the response of the interviewee.

4.6.4 Student narrative

Students were expected to post narratives on the system or send word document via email to the researchers. The need for the data that originated from the feedback system in the podcast website was communicated to the administrators of the main site, to which they agreed and set their main management system to give monthly reports of this nature. The data were detailed in the user identity, the day of the post and the comment itself. An email was sent in the agreed period to the researcher for filing and analysis as was deemed necessary.

4.6.5 Case study

Evidently, the data from this research were based on different methods of data collection that was meant to shed light on one interesting topic. It follows that indeed that there must be a bridging mechanism that inquired into the various sources, create meaning through comparison and contrast in data collected. For this case, the data from the website regarding the use of the

podcasts was compared to the other data received through questionnaires; interviews and any feedback from the respondents were subjected to a secondary form of analysis that sought to establish point of convergence and divergence.

4.7 VALIDITY AND RELIABILITY

In research, there are those elements that guide the preparation of a research such that in the end, the research would be credible and reliable. It is important that a study meets the criteria so that indeed when the information given by the research is given to other persons, the errors in the research should not be taken as true. The issue investigated by this study bears great importance to educators and students alike due to the implication that will be made from the study. If the method is found feasible as it stands, the implementation of use of podcast will bring many advantages as discussed in earlier chapters. If it is not found feasible, it is important that the reason be established and measures to alleviate the barriers be carried out to make sure the students do not suffer for lack of technology that is of benefit to them.

4.7.1 Steps taken to ensure reliability

To achieve internal reliability, one researcher was used in any interactions that were made as well as interpretation of the findings to avoid mix ups that in the end could result to contradicting information in the analysis. To avoid errors that are made in recording raw data, recording equipment were used in interviews to ensure that there were not errors brought forth as a result. In literature, the findings of this study should have similar results to other studies that have been conducted about feasibility of podcasts (Carmines & Zeller, 1979). However, they may not be exactly the same, but the analysis should give acceptable results as per the tools and situation of the phenomena under study. The ability of another researcher to conduct a similar study using a tool and get the same results was ensured.

Opinions are good, but in external reliability, they may come in between to incline the results to a particular fashion favourable to the researchers' opinion. In this study, the researcher was informed of the impact this would have and thus trained in evading situations or means through which such opinions may be a barrier in establishing the truth. As has been indicated in the discussion of tools used and the procedures for collection of data, arguably the steps to avert this

were taken. In the case of data collection, the social context was unified since it is understood that a difference can lead to other factors coming into play. In analysis, the units of analysis were standardised and recorded as well as the construct definitions that were used anywhere in the study. These along with a good choice of data collection tools gave the research good reliability.

The questionnaire was also tested for reliability. This was done through a sequence of activities. Consultations were done regarding the relevance of the questions among peer researchers before the first activity. Firstly, a pilot test was made among randomly selected participants to establish whether the questionnaire aroused conflicting ideas and understanding from the respondents. Five participants were used upon being called and agreeing to give a speedy response to facilitate the process. An email was sent with the questionnaire and the response was checked for consistency in answers and checked for any conflicting reasoning. Follow up calls were also made to ask whether there were any questions that were troublesome. The response aired a few concerns on the way the questions were framed. To address these concerns, adjustments were made and the final questions confirmed to be clear. This was the questionnaire sent to the rest of the respondents.

4.7.2 Steps taken to ensure validity

Loss of respondents is one aspect of this study that is a considerable area of caution. Sending questionnaires receives limited feedback as research as shown, and to avoid getting very little response, reminder emails were sent to the respondents to urge them to take some of their time to complete the questionnaire. This was meant to improve the rate of response. Selection of the same respondents was guided properly and was representative of the population who in this case consisted of the ODL students of Unisa. In the course of the study, the length of time to be taken for conducting data collection on each participant was considered such that there would be sufficient time and no rushes were made. The preparation stage for some of the processes included confirmation that there would be no distractions or commitments that would cause inaccuracy. In other methods, the necessity to study the variation of data collected with time was done by using of monitoring systems that generated progressive reports. This was particular in the podcast website which was put on periodic watch (Carmines & Zeller, 1979).

Setting effects were considered and the degree of exposure to research of the participants was not high and therefore the results would not be affected and the probable offsetting of the natural setting did not have any impact as far as the self-conscious nature of the students were concerned. Selection can be replicated easily due to the clear inclusion criterion that was used in the study. To avoid different interpretations of the questions that were asked in the study, a pilot test was done to ensure that clarity was sufficient and no vague questions were present. Significant corrections were done and a final questionnaire was drafted and sent.

4.8 ETHICAL ISSUES

Research is meant to add value to human life and not erode any shred of good in it. To conduct research, there are certain aspects that should be looked at to ensure that indeed the life and welfare of the parties involved or part of the study are taken care of. One aspect that is enforced is the use of voluntary participants in any study. Coercion of any kind is detrimental to the study and can be held as a legal matter in any part of the world. Closely related, is consent. When a respondent gives consent, it means that he or she is aware of the activities in the study. To a large extent, the equipment or apparatus should be known to the respondent, the steps that will be taken in the study as well as any potential risks that come as a result (Cheney, 1993). In this study, the participants were thoroughly informed of the research and in any procedure, awareness was a top priority where the comfort of the respondent was ensured. A consent form was attached to every questionnaire and it was read to any participant depending on the tool at use.

On that note, it is required that the study conducted should not inflict physical or psychological harm to the participants of the study. This is directly in line with the aim of research stated above. Feasibility of podcasts in use as per the details of this research does not cause any physical harm to anyone and the psychological implications were understood by the researcher and the wellbeing of the respondent was always put first. The questions asked were friendly and void of any probable trauma. In addition to that, the probing and asking of questions was done to acceptable levels and with comfort of the interviewee or respondent. Consultation was done in preparation of the questions to ensure they did not and would not cause such scenarios.

Fundamentally, any data received in research should be geared towards a particular objective and any use of the data to compromise the sources of the information should not occur. In that sense, the respondent should be anonymous and the information given confidential. In this study, the questionnaire did not require information regarding the details of the respondent in case of any references to the original papers (Kimmel, 2007). Equally, a detail that may directly link the respondent and the response given was kept confidential and only known to the researcher. Interviews that were conducted were in solitude and telephonic interviews were done at the convenient time for each respondent.

The panel of institutional personnel who assessed the proposal approved the study after rigorous exercises that include the assessment of the ethical implications of any methods and inclusions that were to be made in the study. It serves as a benchmark to filter any studies that may bring harm to society and any party that will interact with it. To add to that, the participants were appreciated in writing and word of mouth, as was placed at the end of the questionnaire as well as at the beginning and end of any data collection process. Polite communication was used at all times and promised to disseminate the results at the end of the study through email. Other principles that were observed to uphold ethics include objectivity, integrity, honesty, care, openness, non-discrimination, professionalism and respect.

4.9 CONCLUSION

Using multiple research designs, five tools were carefully selected for the task of data collection for which a mixed method was used to make meaning of all the data. Among the tools used were questionnaires, case study, interviews, student narratives and observation. Bringing the tools together meant that indeed the faults of each method when used alone would be melted down and the strengths capitalised to make the research an incredible piece. As discussed by Somekh and Lewin (2005), it is very essential that the methods we choose fit into our type of research so that the results can be reliable and valid.

Justification of these methods is another issue that was tackled since divergent views exist on the use of each tool or even all of them combined. Purposeful sampling methods as was un-earthed,

is a very good method for collecting data in situations where the depth of information to be obtained forms a critical consideration.

Another important step in this study was the creation of the podcast website to be used as a pilot project and natural semi-experimental setup. The creation of the website composed of creating scripts for the content, recording and final posting and modifications to the page that was supported by IONO FM. The recording too was done by IONO FM via a mobile unit.

Ease of replication and the extent to which the tools selected were able to measure the data they were intended (validity and reliability) was an important consideration and benchmark that was carefully integrated in every step. Without consideration of the elements, the research would not have met its objective due to the methods that were used. Ethics too was enforced to make sure that parties involved were not negatively affected and thus contradict the main aim of conducting research. The next chapter will deal with data analysis.

CHAPTER 5: DATA ANALYSIS

The Chapter presents the process of analysis of data in a systematic, comprehensible and logical way. It shows what has been found from the process of data collection from the various tools mainly categorised into qualitative and quantitative data. In essence, this will give way to interpretation in the next chapter.

5.1 INTRODUCTION

This chapter analyses the data obtained from questionnaires (online and print), the feedback from the IONO fm website, the observations made during the research as well as the interviews conducted. The sample consisted of students who had registered to take the research proposal writing course in the 2011/2012 period. The main purpose of the study was to determine the feasibility of adopting podcasts as a means of disseminating information for the masters' students who were taking the research proposal writing. . As a pilot study, lessons learned will be instrumental to other courses in the College of Education at Unisa, but most especially, the ODL programme in the university which grows exponentially. The objectives of the study were to:

- identify challenges postgraduate research proposal writing students face in context of ODL;
- determine by means of students' narrative and online survey whether postgraduate research proposal writing learners find podcasts an acceptable method of delivery;
- determine benefits of podcasting to students in relation to research proposal writing achievements; and
- compare the performances and dropout rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing course.

In the study, some of the collection methods used was continuous while others were issued momentarily on a stipulated schedule developed by the researcher. Examples of continuous data collection were implemented in the feedback system from the IONO FM website as well as the

observation of the behaviour of the students with concern to the elements of this study. Momentary collection was used in questionnaires as well as the interviewing of the students. For the questionnaires, reminder messages were used as part of the continuous awareness attempts made to ensure that a good response rate was obtained in the study.

5.2 SAMPLE CHARACTERISTICS

5.2.1 Response rate and general outcomes of data collection exercise

Most of the continuous data collection exercises went on without any glitches as at times the students did not necessarily know of the collection exercise. Continuous data in this research was data that were collected non-periodically throughout the research period. In observation, the website administrators gave timely accounts of the performance of the website in graphs analyzed according to several variables established by the administrators. The data were sent to the researcher after specific time spans.

Questionnaires were sent to 100 students in the Durban and Gauteng regions which were identified as concentration zones due to some logistical in-capabilities of this research. The distribution of the students in regions will be outlined in the Section 4 of this Chapter. This is also pinpointed as a limitation of this research. The other 30 students were to take part in the interview from the two regions. As highlighted in Chapter 3, the researcher collected e-mail addresses from the willing participants to this study and used the contact list to mail the questionnaires. Since this was a voluntary exercise, the number of respondents was limited by the number of students who signed the participation sheet coupled with their e-mail addresses.

Out of the 100 questionnaires which were sent, 48 were returned to the researcher by the time the reception was halted for analysis to take over. However, it should not be misconstrued that the intent of halting the process was to lock out any further communication pertaining the questionnaires but a means to meet the stipulated time for the process. The researcher used follow up messages to alert the students of the sent questionnaire to remind them of the expected response from them. On the assumption that all the respondents received the questionnaire, the response rate is calculated to be at 48%. Since the response rate did not entirely deserve to be

called a good representation of the regions. The researcher used a stratified random sampling of the received questionnaires based on the following parameters:

- The selected sample should be representative of the region in the final tally of the sample population;
- The selection process should be random;
- The minimum response for the individual regions will be used as a benchmark for calculating the other representative regions, unless the number of samples of the region does not make statistical sense to the other regions. Another criteria that was created was in such a way that the data will have statistical value as well as inclusion of the regions which were to be considered in the region.

Boldly therefore, the study ignored the response bias and strived to create validity and reliability of the data received as pertains to the objectives of the research. Such a response rate is not new to the research field as Duan (1997) experienced a similar response rate even though on a larger scale. It can be stipulated that the main cause of this is the lack of control of the researcher on the administration of the survey. As Hair et al. (1995) explain what is of importance in research is indeed the statistical significance of what is presented in the study. The ignorance of the response bias is also a limitation of the study.

Due to the commitment and nature of the mode of study, the researcher used email facilities and phone calls to remind the students of the research questionnaires and in some instances to even conduct interviews in situations where the logistical challenges were very tough. The voluntary response to research is however praised by Labaw (1980) as being a means to encourage honesty and ensuring that indeed there is not pressure whatsoever in participation. It is to the researcher's knowledge that all means to ensure that the questionnaires were administered were done.

5.2.2 Non-response issues

What lingers in mind when one thinks of non-response is the probability that the sample which has been left out of the study had different thoughts on the phenomena under study. Nonetheless, it is not a new phenomenon in research. As much as non-response would in some cases lead to

non-observation bias or sampling error for that matter, estimation of the error incurred is very difficult. As Messer and Washington State University (2009) also explained, it is dependent on the responses of the sample. A general response that is on the extremes would raise questions on whether the neglected lot would change that that would be in a 90%- 10% opinion on something. Another situation is the 50%- 50% opinion which would raise question on whether the remaining areas would have brought out a distinct difference. A 75%- 25% opinion gives a significant picture of whether the opinion is mutual especially if synthesised down to the sub-groups.

Non-response bias is however more pronounced when the mail that was sent to the sample was lost and therefore did not give the sample a chance to participate. Other causes of non-responses such as refusals, wrong mailing addresses have been described by Malhotra et al.(2002), Churchill and Lacobucci (2002) to have negligible effect since the sample either willingly neglected the opportunity or did not have an opportunity in the first place. As adopted in this research, it is important that any bias is corrected to ensure that the validity and statistical significance of the research is maintained.

5.3 OVERVIEW OF THE ANALYSIS PROCESS

5.3.1 Qualitative data analysis process

According to Coffey & Atkinson (1996:189), the process of analysing qualitative data is one that is fragile and thus requires care and rigour. Regardless of if the process requires only very little data collection, the process should begin as soon as the first set of data is collected. For example, it is important that at the start, the researcher segregates himself from the topic and views and dwell on the subject and the contributions to the phenomena under question, this is what is referred to as bracketing. The complete immersion of the researcher into the process of data analysis is instrumental since the preservation of the uniqueness of the experience described by the respondent is what will lead to accurate deductions or findings. Comprehensive and exhaustive findings will be obtained from this (Streubert & Carpenter, 1999).

The process of collecting qualitative data used in this research is as follows:

a) Use of memos

A large amount of information emerges from the data collection process. It can be in the form of questionnaires, interviews, feedback and or observations which were all used in this study. The operational description of using memos in this case is the recording of emerging information that the researcher may deem to be important. They are mostly in the form of notes. These memos will also be used in the final analysis and thematic comparison.

b) Data entry and storage

The researcher transcribed the data from the interviews, the questionnaires, feedback and the observations made. For this case, the data were transcribed into Microsoft word documents with labelling that indicated the nature of the methods used and the time. After this, the word documents were added to the data analysis software for this type of data, ATLAS. Ti version 7 which was used for storage as well as other functions. Copies of the transcribed data were copied into a flash disk drive specifically designated as a backup for all data of this research. The files were put in archived format “.rar” to avoid contamination of any kind.

c) Coding and developing systems of categorising the data

Data that have been transcribed need to be broken down to bring meaning into the research. This step therefore can be termed as the one of the important stages that the information collected by the researcher. The data were read and divided into meaningful analytical units; this meaningful data was then coded. Marking the data using items that can be used for recognition, that is, using words to describe the data, symbols or even names for categories made. The initial coding was done upon segmenting all the data received. A list of the codes developed was made (master list). Secondary coding was done in new segments of data when grouping is identified for the data. The researcher did the coding process after training on how to maintain intra-coder reliability (consistency for a single coder).

Problems in research proposal writing	<ul style="list-style-type: none"> -no other mode of communication other than e-mails which are not followed up - if you have any information in completing the research proposal - how to start making a draft for research proposal -attachment with guidelines for the preparation of a Research Proposal
Another method to change experiences	<ul style="list-style-type: none"> - regular interaction on planned scheduled time - more guidelines when doing the research proposal - regular meetings with supervisors assist because the approach is not the same
Did not listen to podcast	<ul style="list-style-type: none"> - I was unable to download or listen to it - I did not listen to it, because, UNISA is not offering students internet - I never used it before -I didn't know how it is working I would open it then close it in the UNISA computer lab
Listened to podcast	<ul style="list-style-type: none"> - it explained everything all we hope for is just to pass because of what you have done - I liked the lectures voice and how she explained everything - it helps to understand the concepts - The tone was loud and clear, the information straight to the point

Table 1: Example of a code table that was used

Some types of codes were used in the process. Some codes had been developed before the start of the research as was found to be interesting in terms of the objectives of the research. These codes that are made prior to data collection are referred to as priori codes. It is important however, that the researcher identifies existing elements and uses them to create meaning to results. This research took to account this and factored in other codes as the process continued. These kinds of codes are called the inductive type.

Moreover, data may have several implications but in actual sense is captured in just one statement. For such cases, the researcher developed co-occurring codes. According to University of Southern Alabama (2000), the common occurrence of multiple implications necessitates equal interpretation that is very essential to avoid leaving out important information that may be useful to the research. Finally, there exists a uniformly applied code for the entire sample examined, which are applied to keep track of the relations. This type of codes are referred to as face sheet

codes and giving examples relevant to this study, includes the gender of the respondents, the use of the podcast in research writing process, details regarding submission and awareness, region of the respondent and registration time.

d) Interim analysis of the data obtained

According to University of Southern Alabama (2000), the process of qualitative analysis is one that should be non-linear as well as continuous, that is, from the start of data collection. The process that captures continuous cycle of analysis of data is what is referred to as interim analysis of data. In knowledge of this, the researcher used the method to fully understand the phenomenon as well as tracking any changes that emerged in the opinions that were aired from the sample.

e) Enumeration

Even qualitative data requires statistical help that will help in quantifying the number of a certain object that needs to be expressed in the study. Words such as “a few” and “almost all” are some of the quantifying elements in qualitative analysis. The researcher counted the number of times a key element appeared in the statements of the respondents as well as the number of times a code would emerge in the data. The researcher was careful to define that the number of times an element should be counted and implied in the research is from the whole data and not just one respondent (University of Southern Alabama, 2000).

f) Establishing hierarchy in the categories established

Using Frontman and Kunkel’s model of hierarchal classification (1994) as it appears in Johnson and Christensen (2010), the need to establish that indeed some of the categories may be general or a contributor to one specific theme or category is essential in understanding the data. That way, understanding the data will give in-depth information such that the researcher was able to pinpoint the contributing factors accurately.

g) Drawing relationships among categories

The researcher utilised this to create meaning and connect information received from qualitative data collection methods that were used, for example, observation, part of the questionnaire and

the focus group interviews. The relationships show what the contribution of the category is and the role played in the phenomenon investigated by this research. Some of the relationships investigated include strict inclusion, spatial, cause-effect, rationale, location of activity, function, means-ends, and sequence not forgetting attribution relationships. These are adopted from Spradley's (1979) classification of relationships.

h) Corroboration and validation of results

It is the intension of the researcher to give the readers accurate and trustworthy information about the phenomenon that was under investigation. For that reason, the researcher employed strategies to ensure that the collection, analysis and final writing is a flawless process that will not give translation, omission and commission type of errors. This was the precise application of triangulation. Specifically, data triangulation and method triangulation were utilised in this process.

5.3.2 Quantitative data analysis process

As mentioned earlier, the nature of inquiry for this research, that is, feasibility of using audio podcast for targets in this research is a direct implication of requirement for statistical analysis to really show the 'numbers' that the possible implementers of this study considering. Therefore, the analysis of the data had equal importance as compared to the understanding of the factors and variables that are affecting the use of the podcasts. Specific data of statistical nature were collected from questionnaires and structured interview questions with closed-ended format. The process utilised the process outlined below.

a) Establishing coding systems and coding

For a particular question, the researcher established a code as was seen suitable in the analysis instrument. The analysis instrument in this case was the SPSS software. After that, each of the questionnaires was processed for the particular question of interest and the data confirmed to ensure that there are no errors which would affect the results of the research. The data were then saved in the software and a copy of the same saved in the backup storage medium.

b) Establishment of the appropriate methods of analysis and representation

Data were different and unique to the question that has been posed. This research recognises the need to use appropriate analysis and representation of the data to make it easy for the reader to understand. Other than that, the complementary role played by the qualitative and quantitative methods was a factor that the researcher also considered such that the results should give explanation to the data gathered from the exercise. In representation, graphics were used to provide instant visual expression of the variations in the data. Other cases were represented by detailed tables which were also simplified to consider the readers.

5.4 QUESTIONNAIRE AND INTERVIEW RESPONDENTS' ADJUSTMENT

5.4.1 Questionnaire adjustment

The response rate that was obtained upon analysis was not representative of the Durban and Gauteng regions' contribution in the sample. For the area that had lower response rate in consideration to the number of students that were expected from the region would therefore be in disadvantage. One region that had higher response rate thus was "over-represented". To neutralise this, the low value was used as a benchmark to represent the number of students. That is, for example in the figure 2 below, if the minimum response rate was 14 to represent 54, a calculation was made to get how many should represent the other region. In the excess region, the questionnaires were numbered, noted and put into a basket for random picking of the questionnaires that will be used eventually (Thompson, 1992).

	QUESTIONNAIRE		
Region	Sample	Respondents (% turnout)	Corrected respondents (% turnout)
Durban	35	9 (36%)	9 (36%)
Gauteng	95	39 (52%)	27 (36%)

Table 2: Correction of questionnaire responses

5.4.2 Interview adjustment

In the data collection process, the interview was not adversely affected as compared to the questionnaires. After conducting data collection, the imbalance was realised and was applied directly into the interview selection. Random selection in representation was done to avert the same situation in both interview and questionnaire adjustments. The adjustment procedure was similar to the one described in the questionnaire adjustment. After correction, the two regions, Durban and Gauteng had representative samples for this research. The table 3 below shows the received responses and the corrected representatives of the regions.

	INTERVIEW		
Region	Sample	Respondents (% turnout)	Corrected respondents (% turnout)
Durban	8	4 (50%)	3 (41%)
Gauteng	22	9 (41%)	9 (41%)

Table 3: Correction of interview responses

5.5 QUANTITATIVE DATA ANALYSIS

5.5.1 Gender

	FEMALE	MALE
Questionnaire	7	29
Interviews	2	10
TOTAL	9 (19%)	39 (81%)

Table 4: Gender variations in the sample

Table 4 above shows there were 36 respondents for the questionnaire. Seven (7) were female and 29 male. The interview process had a total of 12 interviewees, 10 male and 2 female. This is very clear that there were more males than females who responded to the study. The main reason was that male representation in the study was high.

5.5.2 Regional representation

REGIONS		MALE	FEMALE	TOTAL (% turnout)
DURBAN (35 samples)	Actual	10	3	13 (37.14)
	Adjusted	9	3	12 (34.28)
GAUTENG (95 samples)	Actual	37	11	39 (41.05)
	Adjusted	29	6	36 (37.89)

Table 5: Regional representation of data collected

Table 5 above shows a breakdown of the participants of the study and the regions they represent, the gender and the actual and corrected response rate from each region. It shows that out of the 35 samples in Durban, 12 participated in the study, whereas out of the 95 samples in Gauteng region, 36 participated in the study.

5.5.3 Registration for proposal writing module

All students (100%) in the sample had registered for the research proposal writing module as was required to be included in the study.

5.5.4 Podcasts as a good substitute in disseminating the research proposal writing material

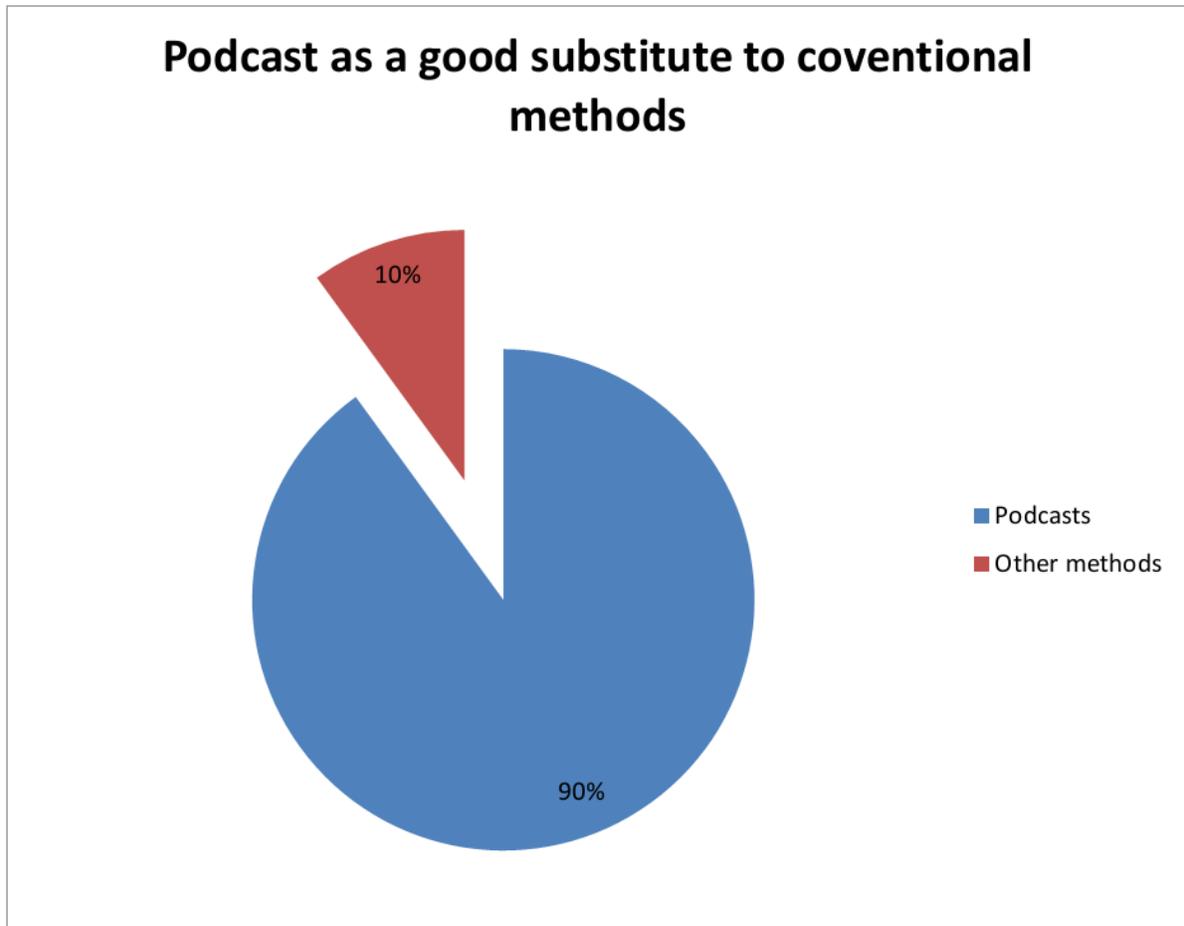


Figure 10: Podcast on mobile devices as a good support for ODL for disseminating teaching and learning material

Figure 3 above indicates that 90% of the sample recommended podcasts as a substitute to the conventional methods of disseminating educational material. The other 10% was scattered in other dissemination methods.

5.5.5 Awareness of the existence of podcasts for the research proposal writing module

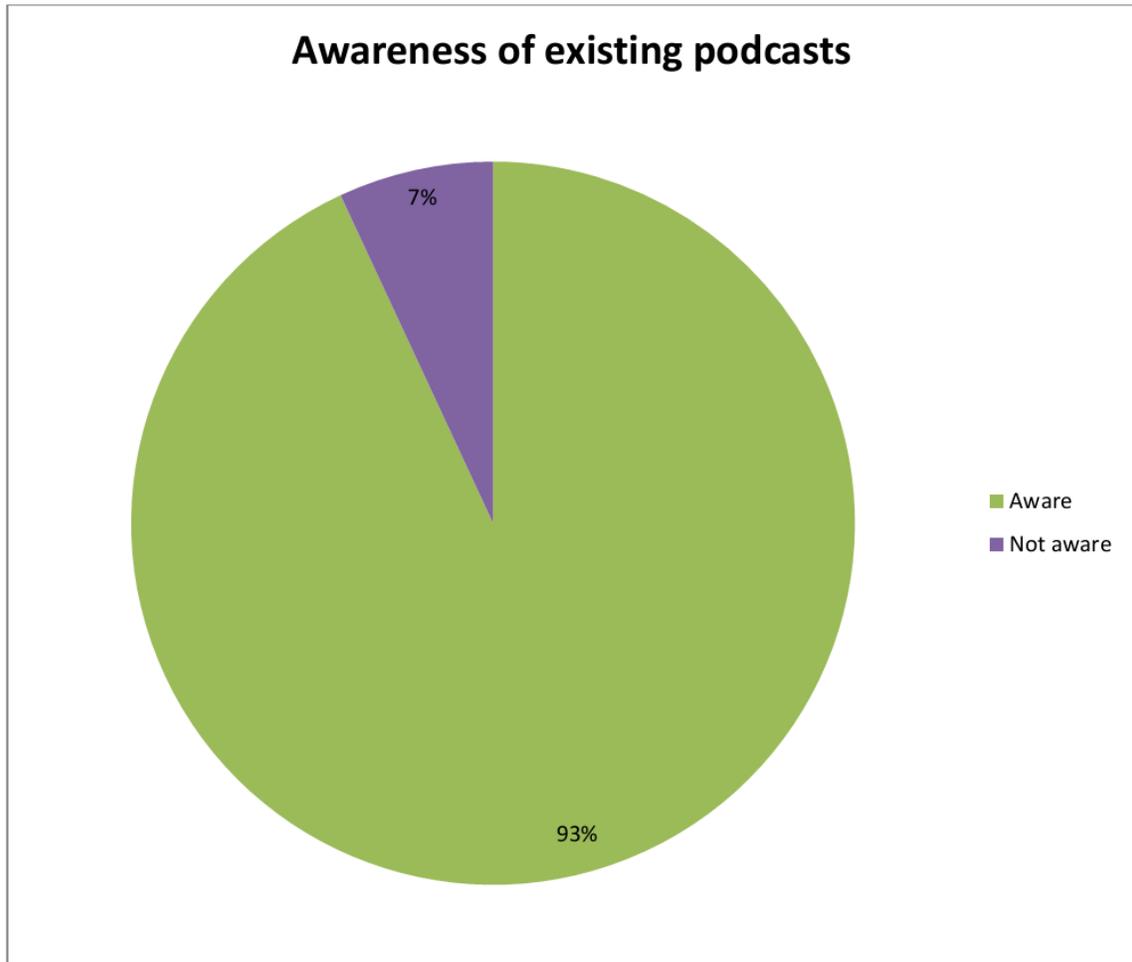


Figure 11: Awareness of podcasts

From analysis, figure 4 shows that only 7% of the sampling population was not aware that there were podcasts for the research proposal writing module in this study. The other 93% was aware.

5.5.6 Listening to the podcasts

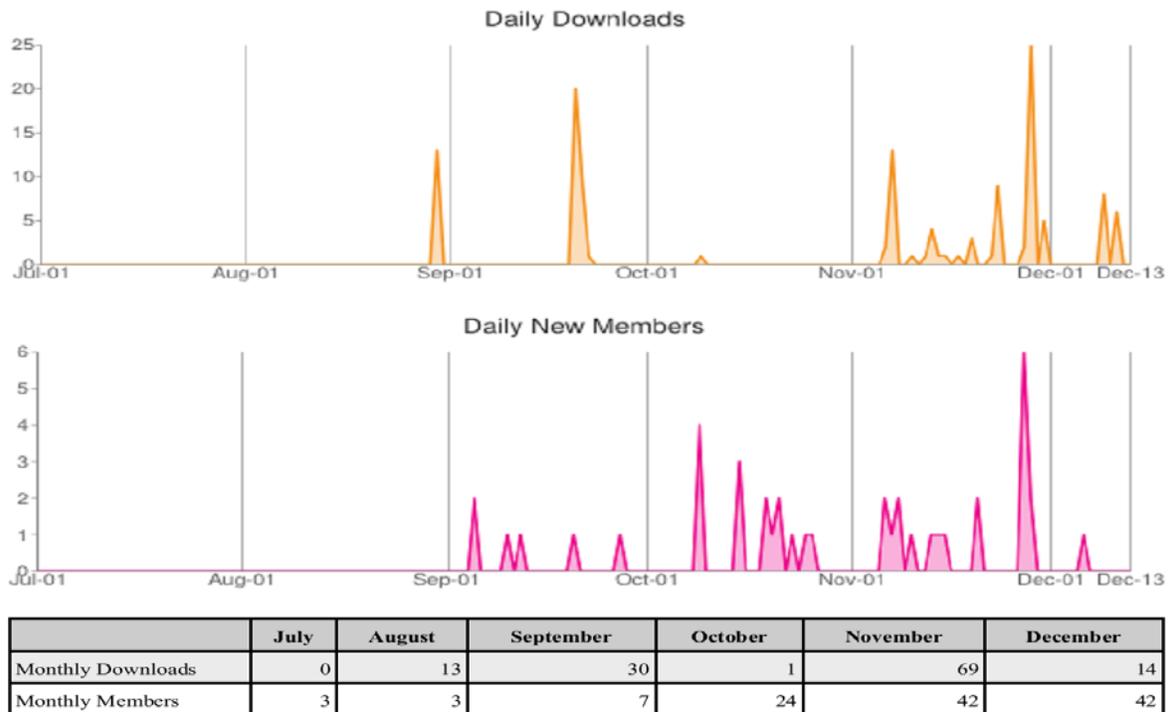


Figure 12: Six month report on access of the podcast and usage

The figure shows the spread of use of podcasts on a six month period. Capture of number of downloads and the new members per month is indicated graphically to show trend and in tabulation to indicate the exact figures.

Channel	Episode	Duration	Cover Date	Times Accessed
Research Proposal Writing Module-MPEDU91	Introduction	12 min	20 Sep 2012 8am	39
Research Proposal Writing Module-MPEDU91	General Orientation	12 min	20 Sep 2012 8am	9
Research Proposal Writing Module-MPEDU91	Research methods	12 min	20 Sep 2012 8am	8
Research Proposal Writing Module-MPEDU91	Theoretical Framework	11 min	20 Sep 2012 8am	8
Research Proposal Writing Module-MPEDU91	Introduction and background	13 min	20 Sep 2012 8am	8
Research Proposal Writing Module-MPEDU91	Literature study	16 min	20 Sep 2012 8am	7
Research Proposal Writing Module-MPEDU91	Qualities of a good proposal	7 min	20 Sep 2012 8am	6
		1 hr 26 m		85

Table 6: Performance of the topics on the month of December.

For September, a breakdown of the exact use as recorded by the data logger from the IONO fm administrators is presented. It shows how each on the individual podcasts was accessed leading to 85 recorded uses on the system that month.

5.5.7 Possession of mobile devices that can access the podcasts remotely

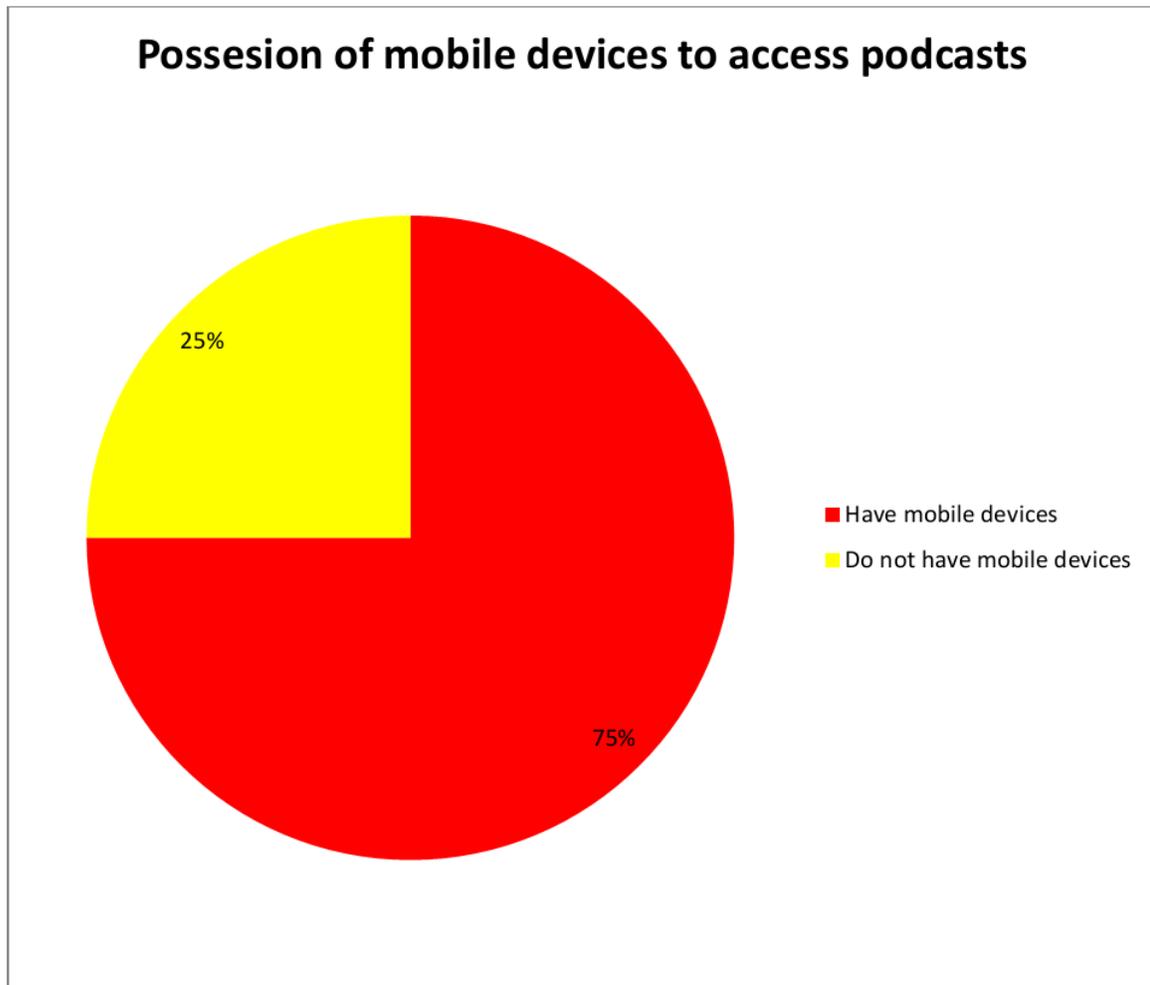


Figure 13: Chart indicating the students possessing mobile devices that can enable them to conveniently access podcasts

Referring to figure 6 presented above. Amongst the sample used in the study, 25% admitted to not having any mobile device that could aid them in accessing the podcasts remotely. The majority 75% had devices to access the podcasts from mobile locations.

5.5.8 Willingness of Masters' students to purchase mobile devices to enable them to use research proposal writing podcasts effectively

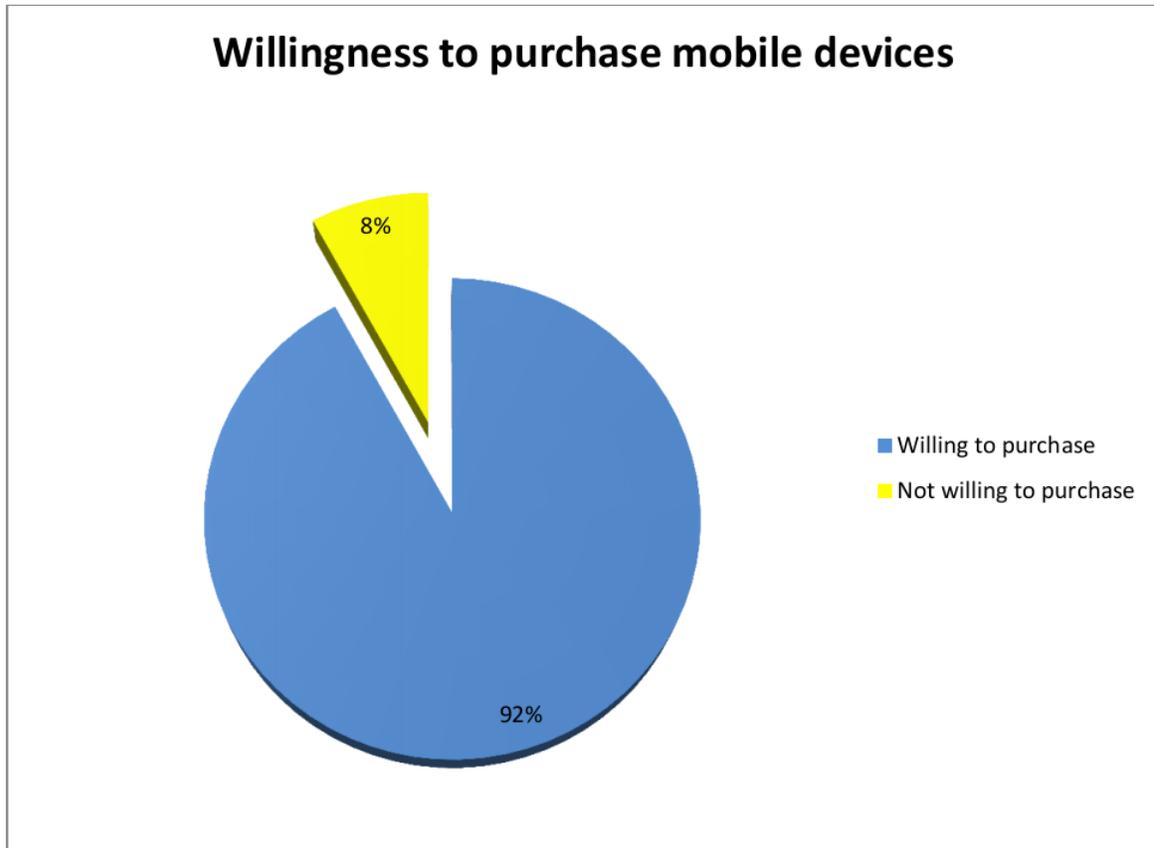


Figure 14: Chart of willingness to purchase mobile devices to access podcasts

As illustrated in figure 7, 92% of the respondents are willing to make a financial commitment to purchase a mobile device that will enable them to access podcasts. About 8% of the respondents are not willing to make such a commitment as shown in figure 7 above.

5.5.9 Submission of research proposals

In the sample, there were those who had not used podcasts completely (7%), another group which had not submitted their proposals as at the end of the research (5%) and the majority (88%) who had submitted their proposals and had used the podcasts as shown in figure 8 below. Refer page 162 heading 7.2.1 on the interpretation of submission of research proposals.

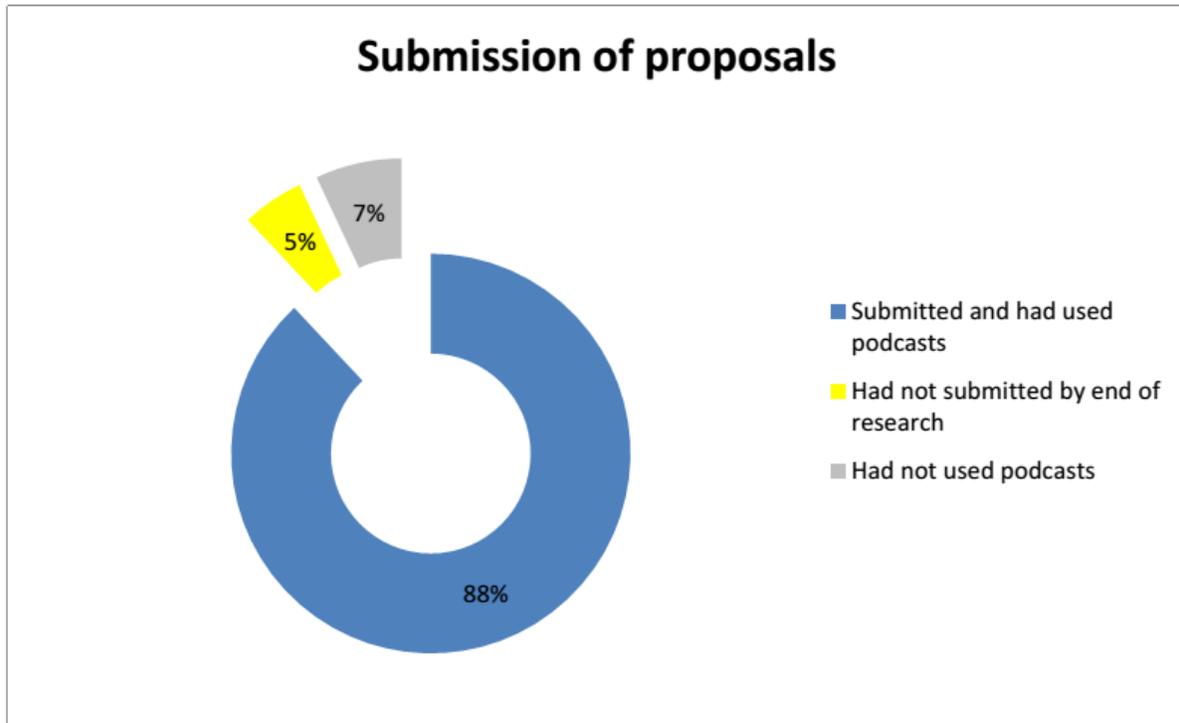


Figure 15: Submission of proposal as at the close of data collection

5.5.10 Use of podcasts to compile research proposal

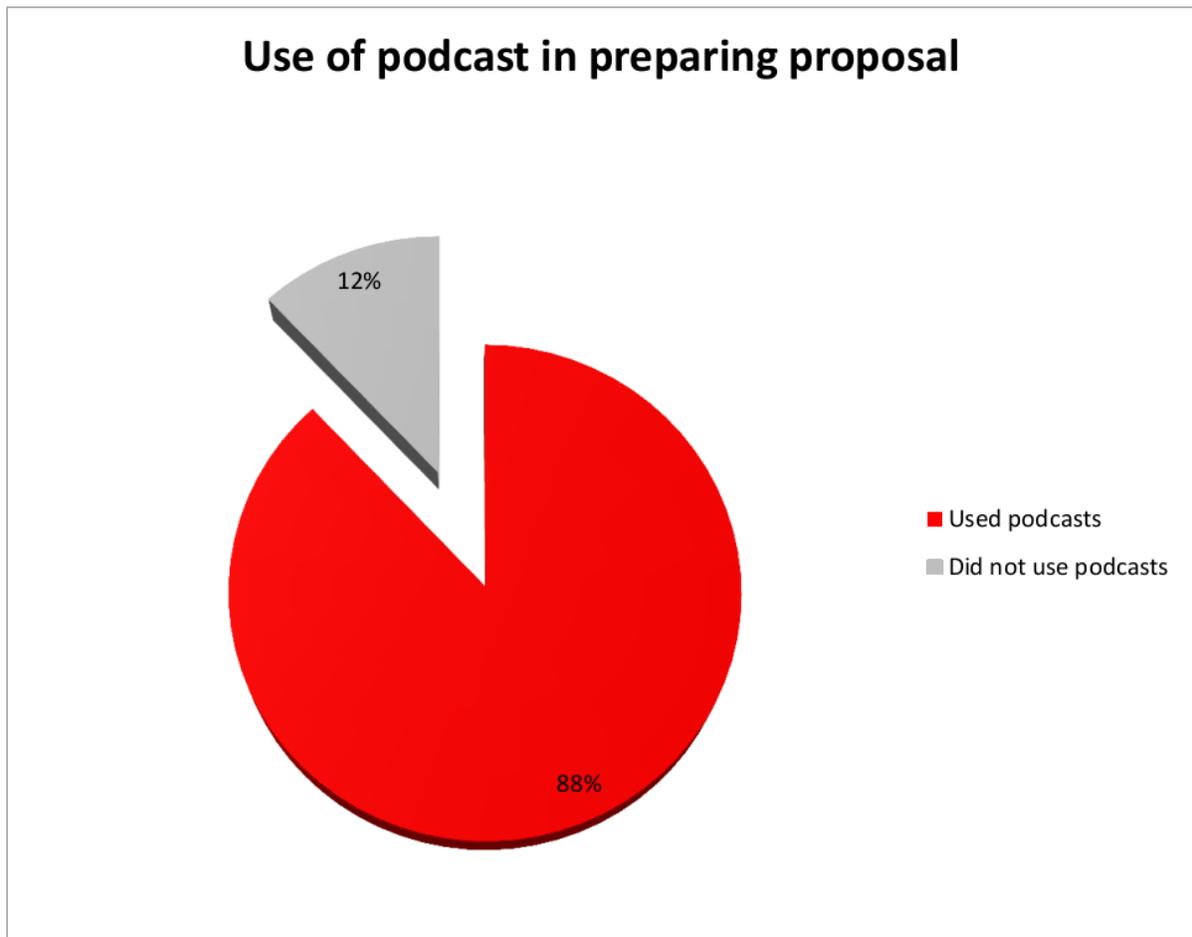


Figure 16: Indicator for use of podcasts in writing the research proposal

As illustrated in figure 9, 88% of the sample pointed out that they had used the podcasts in preparing the research proposal and were at various stages with some having submitted them. However, 12% had not used the podcasts in compiling their proposals.

5.5.11 Influence of podcasts on improving performance in the research proposal writing course

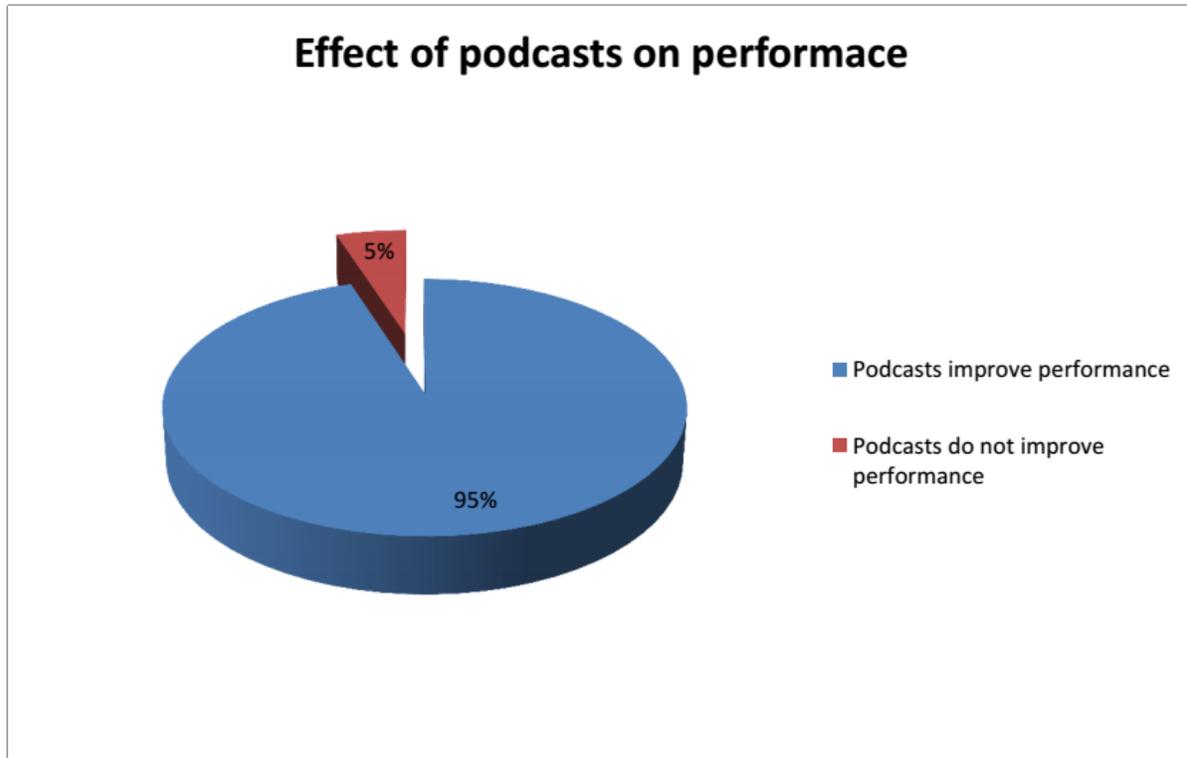


Figure 17: Effect of podcasts on the performance in the research proposal module

From the self-reported question as illustrated in figure 10, 95% of the respondents indicated that the use of podcasts would improve the performance significantly. The other 5% indicated that performance is linked to other factors, not podcasts.

5.6 Qualitative data analysis

5.6.1 Problems in research proposal writing

As highlighted in figure 11 (showing coding of the qualitative data) the data were processed into various areas of interest among them problems in proposal writing as shown in figure 11 below.

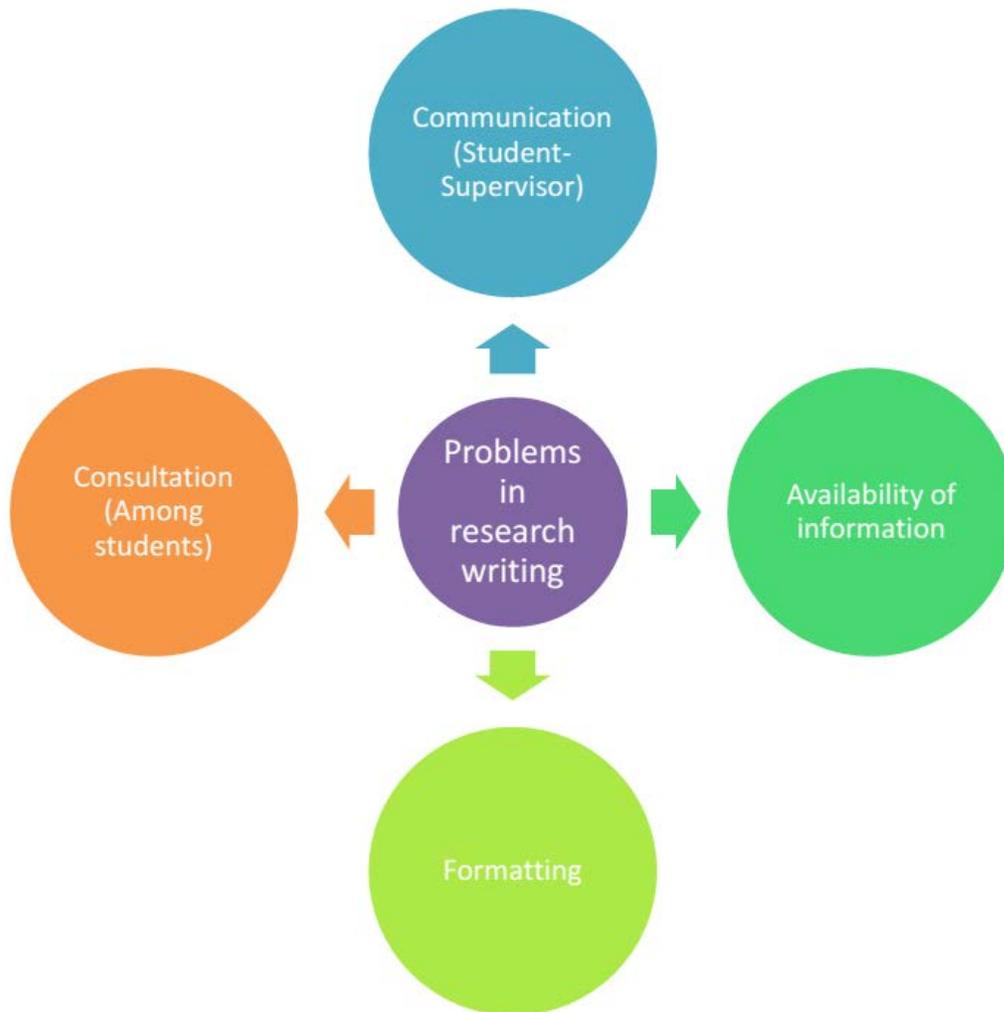


Figure 18: Problems that masters' students face in research proposal writing

5.6.2 Ability of another method of disseminating learning material to change the experiences in writing research proposals

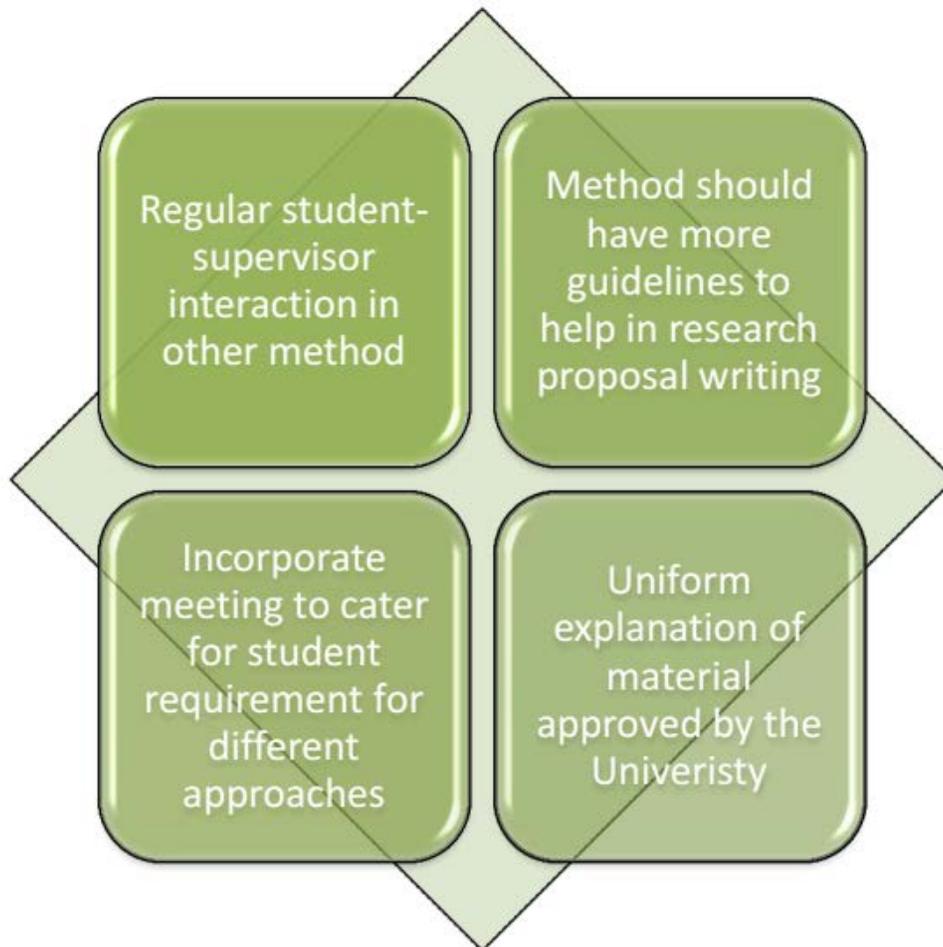


Figure 19: Ability of another method to change current experience in the research proposal writing module.

Feedback obtained from the respondents indicated that there can be other methods that will improve the experience, but the method(s) have to meet several requirements which they indicated as in figure 12 above. Refer page 135 -136 heading 6.3.3. Paragraph 2 for interpretation “ Most students highlighted the fact that there is absence of uniform learner support material on the procedure and guidelines in research proposal writing module and also limited interaction and support from the university or supervisors in the college”.

5.6.3. Experiences in listening to podcasts

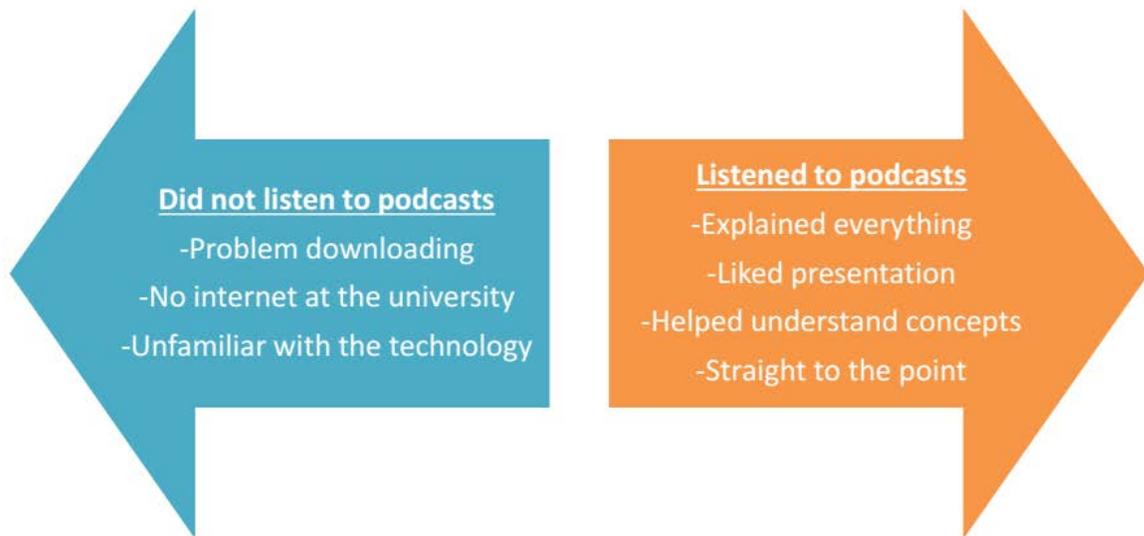


Figure 20: Commentary on listening to podcasts and the experiences

In analysis, the experiences gave diverging outcome as some rated it as good while some had challenges and setbacks as shown in figure 13 above.

5.6.4. Deployment of the podcasts as a full fledge project to cater for the research proposal writing course

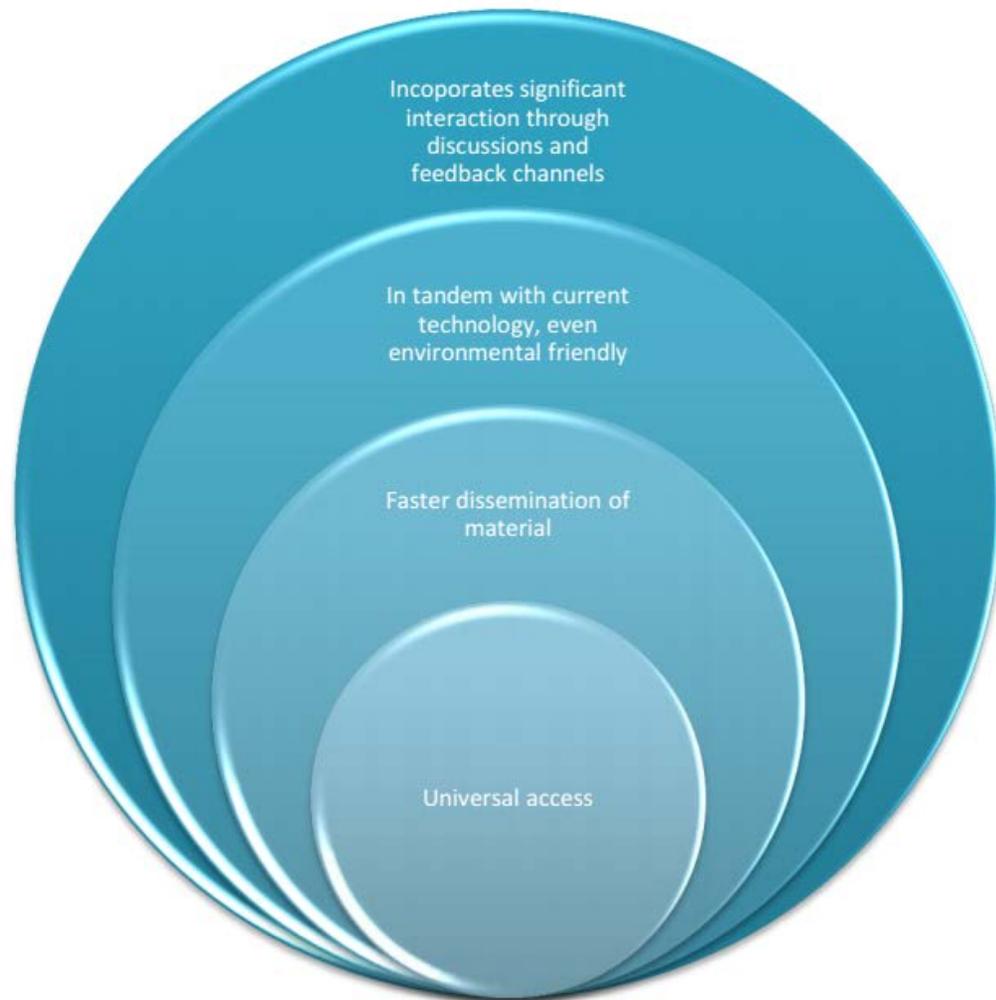


Figure 21: Opinion on the deployment of podcasts as a fully-fledged project

Majority of the respondents indicated that indeed the project will be very good and would help the students in the research proposal writing class. Some of the core reasons are indicated in figure 14 above. Refer page 139 heading 6.3.6. In short the universal access mean every student will gain access to learning material irrespective of geographical boundaries.

5.6.5. Influence of podcasts on the rate of dropouts that may be attributed to hardship in research proposal writing course

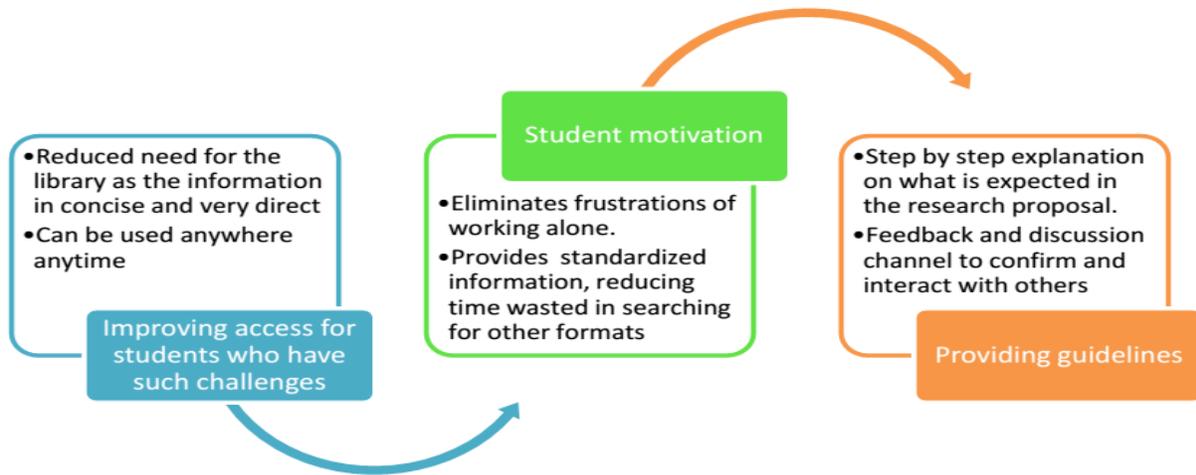


Figure 22: Respondents feedback on influence of podcasts in dropouts.

Many students indicated that indeed the use of podcasts can change the experience of a masters' student in research proposal writing. Figure 15 indicates a summary of the means through which the podcasts will help avert dropouts. The figure has been created into a probable process that the podcasts contributes to.

5.7. CONCLUSION

Analysis of all the instruments was seemingly successful and in this case, integrating even feedback from the IONO fm website was helpful in getting data regarding the use of the podcasts. Following the analysis results, the next chapter will strive to interpret the results in terms of the research questions that were set at the start of the study. It is imperative that accurate interpretation is made to ensure that indeed the research questions are answered. Ultimately, this will contribute to the success of the whole project.

CHAPTER 6: INTERPRETATION OF RESULTS

The Chapter gives an interpretation of what the analysed data have in regards to this research as pertains to the research questions. The chapter will give results from the various data collection instruments and give an overall interpretation showing how each research question was answered.

6.1 INTRODUCTION

Recapping the achievements of the previous Chapter, there are results that were obtained from the various data collection instruments. In this Chapter, meaning has to be drawn from the data obtained specifically for this research. In this case, the researcher therefore interpreted results from each of the instruments showing which research question was answered in that case. The initial research questions were highlighted as follows:

- What challenges do post graduate students face in research proposal writing within ODL context?
- To what extent do the learners find acceptable the use of podcasting on mobile technologies as a delivery medium?
- To what extent does the use of podcast on mobile technologies as a medium of delivery help students to achieve the outcomes expected from the course?
- How do students who have completed the research proposal writing course which integrates podcasting compare to students that did not have podcasting used as a medium of delivery regarding performance and dropout rates?

Notably, there were points of convergence for some of the research instruments regarding the questions that were used to engage the respondents. It is therefore possible that similar responses will be obtained but all this will be done and compared in all cases.

6.2 RESULTS FROM THE QUESTIONNAIRE

6.2.1 Biographic (personal) data

This section covers the details of the data collected that pertains to the unique identification and characteristics of respondents in the study. The gender of the respondent, the region that the respondent comes from and the year of registration to take the research proposal writing module were captured from questionnaires sent and interviews that were carried out. The data are a very important aspect of the research in contextualization of the findings which also have a contribution to the recommendation that the research will make towards making the use of podcasts as a feasible means of disseminating learning material for the research proposal writing module and other ODL courses.

6.2.1.1 Gender

The questionnaire designated a question to capture the gender of the respondent whilst the researcher recorded the gender of the respondents in the interviewing processes. In the questionnaires sent, the gender demarcation of the 48 respondents stood at 37 males and 11 females. As mentioned earlier, there was a need to adjust the response to meet the representation of the regions in terms of the share they had in the total number of students. This is represented in **table 4** in the data analysis chapter.

6.2.1.2 Regional representation

As noted in the research and methodology chapter, the logistical limitations of this study led to the consideration of two regions from among all Unisa regional centres. These regions are Durban and Gauteng.

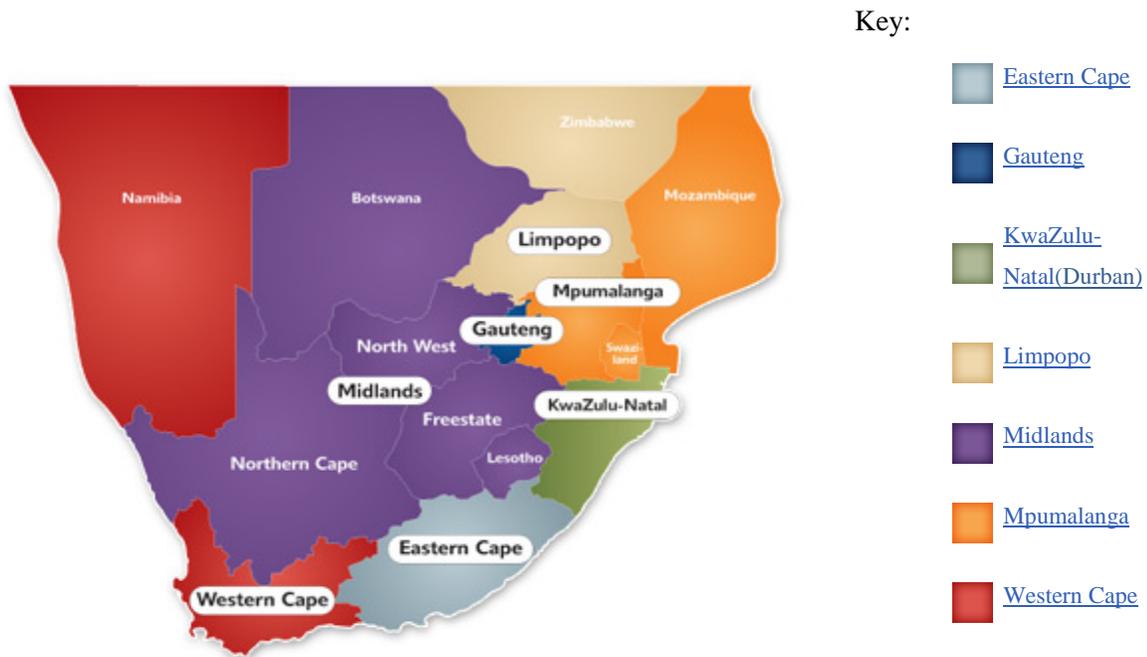


Figure 23: Unisa regional centres

The questionnaire response was corrected and merged with the interview respondents. Together, the two gave a regional representation that was captured by the number of students in each. Rural areas that may be captured in the Durban will be an important input to the research considering that they are far from the campus and could utilise means through which they can access materials from their locations. **Figure 5** shows a breakdown of the participants of the study and the regions they represent, the gender and the actual and corrected response rate from each region.

6.2.1.3 Podcasts as a good substitute in disseminating the research proposal writing material

It is clear from the previous questions in the questionnaire (refer to appendix B) that indeed, the masters' students indeed wanted an alternative additional method for learning research proposal to the method they were using at that moment to disseminate learning material for the research proposal writing course. Descriptively, the students made their needs clear (how many indicated

what?). One of the needs expressed passionately is that of having approved guidelines and support that they can use confidently to prepare their proposals. Another aspect of their needs is that of supervisor-student interactions. At present, the course is limited to personal reading and occasional workshops where academics and students meet.

From these needs and complaints observed regarding interaction with supervisors, it is unlikely that increasing the interaction will cater for the students and as depicted in the results, 90% of the students believe that podcasts would be a viable replacement and 10% believe the opposite. Especially, due to the fact that indeed the course is offered in an ODL environment whose core aim is to reduce pressure on the teaching staff. This is achieved by ensuring there is no contact with the teaching staff except through phone calls, email and organised workshops once in a while. Coupled with provision of convenience for students with other schedules as well as geographical limitations to the conventional mode of teaching, it is unlikely that the contact will be considered at all. The graphical representation of the results is as shown in **figure 3**.

The acceptance of the mode can also be attributed to the fact that the interactive session airs out common misconceptions or misunderstandings related to the subject at hand. The podcasts are interactive as there is an academic who is presenting on different topics on research proposal writing and students who ask questions (role play, the researcher was one of the students). While the studio student is listening, he or she asks questions which have been identified by the researcher as a problem area or areas where they needed clarity. The podcast, like in the pilot project, is hosted on websites which are accessible with mobile devices like any cell phone with internet access and be saved and played on the mobile phone, or saved on memory sticks and played on the move like in cars just to mention a few and can be saved and played just like one would music as they conduct other functions or dedicatedly to the session only. It provides the interaction that is required by the student though not fully since it does not occur live (real-time) as well as the uniformity of the information in addition to the convenience in accessing it.

6.2.2 Awareness of the existence of podcasts for the research proposal writing module

At the beginning of the study, the researcher made announcement of the pilot study and the accompanying research that will be part of the whole project. It emerged that there was a small

portion of the respondents (7%) that were not fully aware of the project as observed from data presented by IONO fm where 121 out of 130 had registered (**figure 4**). Awareness in this case is the knowledge that the podcasts for the project is present and the knowledge of how to access them. The lack of awareness in this scenario means that the student (intended target) did not use the podcasts and views expressed are not from firsthand experience that the pilot project has provided but an opinion or line of thought about the project. The larger group was however aware of the project and took part in it. Students had been invited to register on IONO website in order to access the podcasts through text messages and other promotional methods discussed in detail in the previous Chapter.

6.2.3 Possession of mobile devices that can access the podcasts remotely

One of the elements that propelled the venture into this project is the need to create a solution for those students that face problems of accessibility. According to the feedback system observed from this study, some of the students did not have access to material and are in need of interactive sessions that they can have at their convenience. It is important that the device have portability. In most cases, the users have indulged in using computers for which they go to the internet to find materials or use material. The aim of this study is to divert from using computers and use the playback and internet features of other mobile devices to make it easier for a student to even listen to the material on public means of transport.

However, for this to be achievable, the possession of these mobile devices is important. It is also a factor that may play a role in the use of the podcasts even in this project. Absence of these devices would mean that the student would only have a chance of getting the material if they were in a position to access a computer and internet. That can limit the number of episodes downloaded if any is made and may account of on-hit wonders to the IONO fm website as well. As noted from the data collected, about 25% honestly indicate that they do not have reliable means of accessing the podcasts as shown in **figure 6**, in Chapter 5. While it was noted that a good number of the others who indicated that they have mobile devices have reliance on laptops, the devices serve the purpose but have not reached the optimum operating conditions that in the view of this study would enhance effective use and penetration of the method of disseminating the learning materials.

6.2.4 Willingness of Masters' students to purchase mobile devices to enable them to use research proposal writing podcasts effectively

Commissioning of such a project entails the major financial investments that may be on the part of institutions. As a feasibility study, the research set to capture every aspect. One important aspect of such projects is the fact that both parties, that is, the institutions must be willing to commit financially to upgrade and utilise the technology. In the preceding discussion, it emerged that there is a considerable number of students for the research proposal module that did not have the mobile devices. The abrupt and time frame of the research would not allow the research to establish whether it was possible for the students to make significant investment for such technology.

To be specific, would the student be willing to purchase a Smartphone even if it is the recent developed one which go for less or in the range of R1000? Comparatively, the cost of commitment of this nature would be easier for the functionalities of the phones as well as the next best option which is a tablet or laptop (considering portability in this case). The Smartphones will capture the ability to access the website at any point as well as playback ability comfortably. The discussion of the Smartphones will be limited to the scope of this project as mentioned above. In the results obtained, the respondent overwhelmingly expressed their capability in investing in the devices if the use of the method will be expanded to accumulate other courses that they deem useful. The chart in **figure 7** shows the 92% declaration of willingness to commit in buying compatible.

Caution should be observed in the assumption that the above will happen. Many students expressed their concerns in knowing how to navigate through the website as well as the downloading and further use of the material. Other than that, the quality of the podcast is also a factor. It is important that the podcast be treated as a very important product that will create an impending experience upon consumption. The experience is what will necessitate further action. Therefore, the experience has to be enhanced with commentary and contributions of students having considerations and upgrades especially in the questions addressed so as to improve the product with time.

That is to bring to attention that the level of investment the students will be willing to make depends on the awareness campaign of the product. The approach taken by the institution or body in teaching the target how to access and make the most of the product is another factor. From registering on the websites hosting the material, steps to select the material, navigating through the website, downloading the material to understanding the settings and configurations to be made in the phone will come in handy in that process. That implies that probable set up of assistance or help desk for conveying such information and skills to the student is needed in addition to running campaigns on the same. Also, the quality of the product (podcast) in terms of clarity, the content of the recording and ability of the questions asked in the interactive session of the podcast to satisfy the queries of the students.

6.2.5 Submission of research proposals

A research proposal is rendered passed if the proposal is accepted for the particular course. It is most certainly a basic objective of this study and the pilot project to give material that will help in the compilation of research proposals and final submission that will be an achievement since the student will have passed the module. The submission at the end of data collection, the research writing was ongoing and there are some students who had not yet submitted their finished proposals. The fraction of the sample that was in this bracket was small (5%).

A subtraction was also made for those respondents who had not used the podcasts (7%). The analysis needed to maintain objectivity by not going out of the scope of the areas of interest established by the research. For this case, the submission of research proposals by the sample that used podcasts was important. It signifies the ability of the podcasts to guide a research proposal writing student through the entire process and ensuring that indeed the proposal is received and accepted, indicating a pass as mentioned above.

No reports were received of a proposal that was rejected on submission for the masters' students who used podcasts. In addition to this, most of the students who had not used the podcasts had not submitted the proposal. Exact start times of the project were not collected in this study but the fact that the students had not submitted may indicate a degree of challenges or hardships on the preparation of the final paper. In that case, it is evident that use of the podcasts resulted in

lower casualties of this kind. The doughnut chart in **figure 8** below indicates the spread of submission and non-submission percentage for students that used and those that did not use podcasts.

6.2.6 Use of podcasts to compile research proposal

In this section, an analysis was done with particular interest to samples that were aware of the existence of the podcasts and whether indeed they used the podcasts in compilation of the research proposal that was submitted. The nature of investigation in this case is that which seeks to establish whether the podcasts were of any help to the process. The results in this section could either nullify or support some of the analysis conducted as well as any impending theories, assumptions and considerations that were done. Current standings in the data collected indicate that a majority of the students who were aware of the existence of podcasts actually used them in the preparation of the research proposal.

Notably, **figure 9** is slightly different from the “awareness” (**figure 4**) since some registered and did not use it. About 88% used the podcasts in compiling their work. The portion of students who were aware but did not use the podcasts had earlier sited problems in accessing the material from the IONO fm website. Among the reasons brought forth as discussed above include inability to navigate the website to get the podcasts, lack of mobile devices to enable access in rural areas apart from public utility areas (institutional or commercial) and inability to download for use. It therefore means that the sample that was aware of the existence of the podcasts was willing to use it till the end. With lessons from this study, exhaustive awareness campaigns and the need to solve the challenges faced by the end users of podcasts, the use of podcasts would be very successful in the research proposal writing module as was studied in this research.

6.2.7 Influence of podcasts on improving performance in the research proposal writing course

What does performance in research proposal writing entail? To understand this, the feedback channel gives an accurate account that indeed there are students who get frustrated and end up not completing the course as discussed in the next item analysis. The ultimate performance is

passing, since the goals and objectives of registering for the course revolve around that. In research proposal writing one comes up with a topic, a supervisor is allocated and one is considered to have passed when the supervisor accepts the proposal as having met the minimum threshold set or pass mark.

Therefore, it is accurate to work under the assumption that if a proposal is not rejected upon submission to the supervisor, the student has passed the course. Performance can also be a factor of delivering in time. The performance of the students in this case will be a combination of a self-report of, if the podcasts can improve performance or not, as well as the speed of delivery (submission) that the students who used podcasts had in comparison of those who did not. In the self-report, a unanimous 95% of the sample indicated that they believed that the use of podcasts can improve performance in the course. In that case, the researcher put an assumption that the respondent had done a comparison of how he or she performed or would have performed with the podcasts. This also incorporates what the students went through in the process of preparation. For example, respondents who had not used the podcasts in preparing their submitted proposals, in stipulating that the podcast can improve performance declare that either the podcasts would have eased the work or made their work even better in quality.

Regarding their speed in submission as was analysed in the preceding section, in terms of percentage, the students who used podcasts finished the proposal writing and submitted their papers by the time the data collection process was concluded. As indicated before, this may be a representation of the ease of working with podcasts as compared to working without podcasts. This is based on the assumption that the students started working on the project at the same time and hence a similar period of handing in from the university. Opposing students (5%) to the influence indicated that there may be input from other factors such as the topic chosen in the proposal, which is also valid. These data are captured in **figure 10**.

NOTE that there are several questions from the questionnaire that have been intentionally skipped. They are similar to some of the questions in the interview and thus will be included in the interview results below. REASON: The analysis involved coding of the questions similarly and no separation was done at that point.

6.3 RESULTS FROM THE INTERVIEW

6.3.1 Gender

The interview process had a total of 12 interviewees, 10 male and 2 female. Accumulated numbers for the interviewees was as shown in the **table 4**.

6.3.2 Problems in writing the research proposal

The nature of this query was tackled as qualitative to understand the nature of the situation. As the statistical data showed, there were many problems related to the preparation of the module as was mentioned from the feedback and discussion forum.

One such problem was the maintenance of communication in the process of education process as well as the factor of inability to access the campus on regular basis. Most of the students in masters' class are committed due to the fact that most work while trying to quench their educational thirst. It is therefore, a war of providing non-interactive education versus even offering other related services. A solution to part of this problem is by providing interactive learning material through podcast. Moreover, the need for convenience in getting material off campus can also be done by podcasts. An example of these concerns was aired by a student as indicated below:

“Good day all. I have been communicating with the relevant Unisa parties regarding the submission of my first draft proposal.....To me it is just unheard of that there is no other mode of communication other than e-mails which are not followed up. Being situated in DURBAN makes me feel like there is just no way I will ever be able to get in contact with Unisa, unless I fly down to Gauteng. This is really unacceptable, especially on this level of education.”

Another problem encountered in the student is the lack of consistent material to use on the preparation of the proposal. Most of the students complained of lack of sufficient communication from the supervisor regarding any help on what the proposal should or should not have. Many of the students as they unveiled tend to go on their own research expeditions to learn and write the material. Another group utilises the help from other students who pull up and form discussion

groups from which they help each other. The provision of material which is approved by the teaching staff of the university will be very useful. Examples are as follows:

“Hello everyone, I am also doing MPEDU-91, has anyone heard from the contact person regarding the proposal module? I will appreciate your contribution if you have any information in completing the research proposal.”

Another student indicated:

“Hi colleagues, I thought i was the only one who is frustrated and stressed too about the issue of research writing. I too share the same problem if there is anyone who can help me can forward the response to..... Cell.....I also need the due date for research submission.”

The nature of sharing and the need for the materials is indicated in the following communication

“I am one of the students doing MPEDU-91 with the same frustrations as others who need guidelines as to how to start making a draft for research proposal. I have read all your comments and I strongly appreciate the support you are giving to each one of us. If there is anyone of you who got help just recently with one of the proposed solutions, just let me know through this email.....Cell..... Please! Help with the deadline for submission research proposal.”

On the other hand, there is a small group of students that indicated that they did not have any problems in writing the research proposal. The reason for this can be pegged on many reasons among them personal commitment, ability of the student as well as the communication and sharing of information and material observed from the feedback channel. An example of example sharing was indicated on the following communications:

“H. Thank u so much for the attachment, it is very informative. At least there's some light now as how to get starting. Thanks again.”

“Thanks for your help... the attachment given is all that is needed for now.”

“Hi guys, for those of you that only started with your research proposal...has an attachment with guidelines for the preparation of a Research Proposal. It is guidelines from 2010. That helped me to prepare my research proposal. You can email your draft proposal to...”

The statement above echoes the problems and concerns of these students and rubber stamps their needs or accurately highlights the gravity of the matter in consideration of the statistical data that was received from the questionnaires as well as codes counted from the focus group interview process.

6.3.3 Ability of another method of disseminating learning material to change the experiences in writing research proposals

Students have various capabilities according to Belot et al. (2004).). It is not the aim of this study to dispute that indeed material exists in regard to preparation of research proposals. However, researcher and institutions have differed in the formats that the researches take in spite communication and serving the same purpose. That is the confusing part for the students who are left with a many different formats to choose from and a harder task of understanding some of the methods that depending on the capabilities mentioned herein, may prove to be quite hard. This is in addition to the methods used, including and mostly hard copies or soft copies of the material (written material).

As indicated in chapter 3 of the study the findings are underpinned by the constructivist theory, where learners take part in activities which suggest the construction of new concepts or new ideas grounded on their knowledge, both previous and current. Learning is perceived as an active process and learners as active constructors of knowledge. Mobile devices are considered in terms of their capacity of embedding the learners in the realistic context together with enabling access to some supporting tools (Naismith et al., 2004: 3). The use of podcasting has been framed within this theory by Mendoza (2011, [online]). This theory is useful in terms of explanation of learning through podcasting as an experience in which students involve themselves in completion of the task, which means they evolve as constructors of their knowledge (Cruz & Carvalho, 2006).

On this matter, a clear majority of the students believe that the current method that is used in the Unisa as an ODL university, specifically the research proposal course needs to be changed. Most students highlight the fact that there is absence of uniform learner support material on the procedure and guidelines in research proposal writing module and also limited interaction and support from the university or supervisors or relevant stakeholders in the college. To this effect, the results merge with the thoughts that form the basis of recommending podcasts use and thus a point of convergence. In the commentary of this question as was posed in the questionnaire, interview and deductions made from feedback commentary, the following was noted:

“Having regular interaction on planned scheduled time with supervisors and regular support can really assist.”

“It would be good if there could be more guidelines when doing the research proposal...”

“...regular meetings with supervisors assist because the approach is not the same.”

6.3.4 Listening to podcasts

Responses from questionnaires and interviews confirm the penetration of the method so far as registration and awareness is concerned. In addition to that, it brings into light the existence of challenges that students may be facing in adapting to the method. As echoed from the statistics from IONO fm observation, the students do have interest in the programme. The responses show a divide that indicates there needs to be sensitisation and more efforts towards teaching the students what to do or how to use the material rather than giving them leaflets and letting them experiment on their own. In the long run, the experimental effects will show but effectiveness will be evident if comments such as the following will be taken into account.

“I was unable to download or listen to it.”

“I did not listen to it, because, Unisa is not offering students internet access and that is not good for us. We have some learning barriers.”

“...I never used it before...”

“ To be honest I didn’t know how it is working I would open it then close it in the Unisa computer lab then close again I would just attribute that to the lack of knowledge.”

“Didn’t know about that, and don’t know what it is about.”

The above samples of views and feedback from the data collected show the diverse reasons that lead students not to listen to the podcasts. Other experiences, views and opinions from those who used the podcasts were as follows:

“it explained everything all we hope for is just to pass because of what you have done”

“I liked the lectures voice and how she explained everything”

“it helps to understand the concepts”

“The tone was loud and clear, the information straight to the point”

6.3.5 Challenges in using podcasts and suggested improvements

According to the results obtained from the data collection, the earlier assumption that was made for the delay in using or downloading material is confirmed. From the table obtained from IONO fm administrators over a six-month period, a number of theories had been developed on the cause of delayed access even after registration. One of the theories was challenges in navigating the website and getting to final download and use. In this question there emerges confirmation of some of the earlier mentioned or speculated concerns. Some of the concerns as will be discussed in detail below include lack of navigation skills in the website, inconsistency in getting access to the website for use, inability to download, some concerns were not fully satisfied and absence of help or information when one is stuck.

Starting with expectations, the researcher expected the students to follow the leaflet instructions to find the website. The first step was to create an individual account. Keying in the details and creating a password was the easy part. With the leaflet, searching for the module site within IONO fm was the next step. According to the probing that was done in interviews and random

results from questionnaires and observations from the feedback channel, this was the hard part and frequently frustrated the students to the point of leaving it at that and trying to learn from others or going through the guidelines again. Another area of considerable difficulty for the first timers was now selecting the modules and either listening or downloading.

Downloading is another issue. For some of the respondents, listening to the material online was no problem. A sample comment mentioned: “...*the podcasts play starts automatically even if not selected at times...*” but the download was a problem for some of them. Some of the ones who complained are ones who used mobile handsets. Though they indicated that they downloaded finally, the most logical theory to answer that would be the signal strength and specifications of the handset. The most troubled were students who accessed the material from public use computers. A general fear of existence of viruses and malware in the computer was discovered in the data collection especially the interview. Some took the opportunity to get the files and use them in other areas or carry them with portable storage units like flash disks. The problem with the public use computers is the risk or “corrupting” the material.

It was noted that some of the students did not have mobile devices that they would use to access the material conveniently at any particular time they needed it. The matter cuts across even those who had laptops as the data suggested. However, severe effects were in those who did not even have a laptop and relied on public utility computers either on campus or paid (commercial). The effectiveness of using podcasts is also engraved in the number of times the target was able to access the information, the more the better the retention. Those who had schedules within their work places or engagements, and had laptops could not access them always in such circumstances. They had to wait till they either got home or had sufficient environmental requirements to suit the use of the laptop. The ones who relied on public computers also suffered the same fate but as the probing indicated. Students who had capable handsets functioned well especially if the material had already been downloaded. As a respondent indicated: “...*I accessed the material every time I wanted and felt the need to...*”

Admittedly, the **interactive sections of the podcasts** could not have covered all the areas of interest to the students, especially the questions. In liaising with the content providers, that is, the relevant lecturers and research material, the recording was done using common queries that have

depicted in other institutions as well as from experience of the contributors to the content. It is therefore very sensible that not all types of questions were catered for in the podcasts. Students still had questions about some of the topics despite getting reasonable information. This is however noted as a limitation of the method since in most cases it is not a live event. Improvements can be made to the existing content over time to cater for such queries and thus provide more knowledge.

It is essential that a central communication provision should be allocated as data collected showed. The willingness of students to engage in the use of podcasts has been noted and as some of them have indicated, they encountered problems that just required consultation from an expert or personnel with better skills in using the podcast and using the devices. Navigation for example, can be instructed on phone as well as demonstrated to individuals as well as large groups. The operation and scope of study as well as other resource constraints are contributors to this. Nonetheless, the response shows the importance of incorporating such functions to the project. The challenges in this case are a result of coding done from concerns raised across **ALL** the research instruments in this study.

6.3.6 Deployment of the podcasts as a full fledge project to cater for the research proposal writing course

Use of the lesson from this study to develop and deploy a full fledge podcast usage in Unisa and other regions would a very fruitful award to this research. On a side note, a product such as this one should have reasonable acceptance and motivation from the students. In that case, evaluating this is an essential part of this project. When the customer has established a need for a product, it becomes easier to present the product and expect a good reception. It is encouraging that in the data collected, most students (97%) supported the deployment of the method. The sample gave this overall opinion and support for a number of reasons which shall be discussed forthwith.

An example of a reason for deployment is the prompt nature of the process. In essence, all it requires is an upload by the designated personnel and everyone will gain access. This is with no consideration of the geographical separation that binds the group. As one respondent mentioned, conventional dissemination of material if it comes from the institution may be sent via post. Post

it fast within towns depending on the type of mail or country. However, for individuals who have subscribed to the ODL programme, mail will take a relatively longer time to get rural areas. This is translated to the deadlines which are followed regardless of the delays that some may have encountered. This is underpinned by the important theory within the context is the activity theory (Engestrom, 2002). This approach is useful in terms of its potential of contextualising the technology in terms of existing strategies and available resources in ODL teaching and learning.

For some of the sampled students, the convenience of using it anywhere is the major reason for recommending deployment. A majority of the group in support, about (50%) cited this as the most applicable reason for advocating its deployment. For example, two of the sample responded saying that:

“...It will be good for those who have access to it since one can access the material every time he or she wants to... “A student can get information anytime and anywhere.”

The combined portability and accessibility is a good tool for ODL students who have registered for the programme mostly due to the fact they have other engagements that may not give them time to attend regular university schedules.

In Chapter 5, the lack of interactive learning was a cause for alarm especially due to the absence of communication and clarifications about pressing matters in the research proposal writing module. To cater for this, the podcasts present a semi-interactive forum where the main speaker delivers a lecture on the topic and a studio student asks questions. The students felt this as participating parties in the discussion especially if a query they had is tackled in the podcasts.

A new emerging reason from data collected at this point is the little amount of time that is needed to go through material in podcasts or audio format as compared to reading print. Reading print is divided into skimming, taking notes and deep reading as well as research. In audio modules, the student only needs to listen to one clip to finish one topic. For example, a seven minute audio may be volume of paper which may take many hours to read. Even listening the audio recording over and over would consume less time. For committed members of the learning community, a few minutes of time are very valuable. Whereas another student may take a full

day to read a topic, an ODL student may take the lunch hour break if he or she is working and listen to a topic two times.

“...I would recommend it as the material is able to reach the intended students on time without the delays associated with other means of disseminating the material such as by ordinary post. Students, especially those in rural areas usually experience delays caused by ordinary post...”

As a primary source of material, if the recoding is clear and concise and the questions asked very relevant, there is elimination of misunderstanding and provides a foundation for a student even in future research or readings related to the subject. As a foundation, the formatting and content of the research is unified and thus further research is meant to build upon what has been pinpointed from the podcasts. Frustrations that come about as a result of noticing that one has done the wrong thing are averted. This boosts the student’s morale and confidence in work presentation.

Another group highlighted the need to incorporate technology into learning. Instances where the use of technology can be used for improvement, for example, use of podcasts instead of print material, using the technology may make the process more interesting and create considerable ease and flexibility. One statement from the sample mentioned that:

“...Technology is moving away from print which is tedious to read and contributes to environmental degradation through cutting of trees.”

Non supporters of the use of podcasts mentioned that indeed the method tries to cater for the inability to meet interaction demands and pressure on teaching staff of learning institutions, although the value of physical interactions should be upheld. One reason given for the real time interactions is that the questions asked are all addressed instead of having a portion answered while another is not. One respondent explains that even the students themselves can help each other through discussion groups. In the exact word the respondent stipulated that:

“...technology is improving as we have to meet the standards but I believe human support is also important so that we have a proper guidance by interacting through discussions.”

This brings another aspect that in any case should not be misunderstood. It is necessary that the podcasts should replace every existing methods of learning. Rather, it should create an aspect of flexibility in terms of convenience, a new way of reading but not a substitute for human interactive learning. The periodic visits by lecturers, for example, should remain and form avenues of settling queries that are not addressed in the podcasts.

6.3.7 Influence of podcasts on the rate of dropouts that may be attributed to hardship in research proposal writing course

The result to this question is similar to the above analysis dealing with the influence the podcast may have on the performance of a student in the research proposal writing course. A unanimous report showed that indeed the sample was convinced that the rate can be dropped as a result of using podcasts on the course (92%). Because podcasting is a relatively new technology to be used in education, Diffusion of Innovation Theory may well be applied. In particular, this theory considers the process of what is known as technology diffusion and focuses on factors that impact the decisions of technology adoption. Some of the views indicated:

“I do think since it really provides guidelines on how to write the proposal, because when there is no guidance and one become stuck, a person can decide to drop-out, such guidance will limit dropouts.”

“Lack of podcasts can have influence because some people find it difficult to access the library”

“...the podcast is accessible any time anywhere. One can play it over and over again to get a clear understanding”

“It’s like a guide that is available to you all the time otherwise it is frustrating alone”

“There are different entry levels of computer literacy among the students. Most of the students don’t have easy access to internet or don’t have training in internet usage. Some kind of support in the form of training would go a long way in helping a majority of masters’ students especially those in the upper age group”

The important tool as the collected data has shown in reducing dropouts is the provision of a guide that will be available throughout. It therefore reduces the headache of searching for material and choosing formats which at times may be revoked by the supervisor and the student requested to restart. Internet challenges are evident even from the registration of the website. People who have problem with data mining in the internet will have a better chance in utilising the podcasts. A similar solution will be given to those whose location makes it challenging for them to access library facilities to access books on the matters.

Others of the contrary opinion (8%) stipulate the personality of someone as the key contributor to the drop out “... *Some who are weak are likely to quit as opposed to strong willed and persevering individuals.*”

6.4 NARRATIVE

6.4.1 Registration for proposal writing module

The study had established inclusion criteria that also included the clause that the student should have registered for the research proposal writing course between the year 2011 and 2012 which would be captured as an effective range to cater for the operation time of the pilot project and collection of data. In essence, the intent was to capture a sample that can make use of the modules that were uploaded to the IONO fm website. From the data collected, it was established that all the members who participated actually met the criterion and thus there was no disqualification of any sort.

Student’s narrative from the website however showed that there are several students who had wanted to take the course beforehand but faced doubt of getting a supervisor allocated and the challenges of getting material since many students had complained in the discussion forum of similar problems. That pushed their continuation of their unit. With several improvements and personal conviction to get the course done, they registered within the period captured by this research. About 8% of the respondents gave such claims. Examples that lead to the delay of registration as the researcher observed from the discussion forum feedback include:

“I am very disappointed, I paid for this course in January, so far no supervisor is assigned to me to mark my draft research proposal which I submitted through the drop box. I don't know what to do next.”

6.5 OBSERVATION AND CASE STUDY RESEARCH TOOLS

6.5.1 Listening to podcasts

Observation was used to collect data from the IONO fm website as shown in **figure 5** and **table 6**. In this research, the observation and case study tools were used hand in hand. Determination of causal relationships or exploration of the events leading to the data was used to understand what was obtained from the IONO fm website.

Podcasts were uploaded to IONO fm website from where the students were encouraged to register for free and even information leaflets on the use of the website were published and sent to the students who had registered to participate in the project and research in general. The reporting for this question was both a question in the interactions between the researcher and the samples as well as an observation exercise that saw the researcher make requests to the administrators of the IONO fm website to provide data on the use of the podcasts over a specified period of time, for this case, a monthly account.

In that case, the administrators provided information on the research proposal writing podcast from the basis of registration as well as details of the number of times a particular topic was played in that time. For example, for the month of December, the break down showed that the introduction was accessed 39 times, the general orientation was accessed 9 times and the rest of the topics uploaded performed according to the table below as obtained from the administrators.

In another broader summary of the performance, this time over a period of six months, the data indicated that indeed there was a slow initial registration to use the service that can be attributed to several factors. One of the factors is the lack of information as has been realised in previous question's analysis. This is why the researcher developed a step by step guide to help market as well as reduce the technical problems that the willing students may encounter in the process of accessing the material. Website use and more so use of such new methods can be a difficult time to switch or try new methods of doing something. For this case, a level of technical knowhow

was required to fully navigate the site and get the data, much of which was assumed to be catered for by the leaflet. The assumption could have locked out some of the students who are either challenged by such technology or take time to understand.

Thirdly, the existence of time limits in submitting the proposal could have denied or scared several students from taking a risk and trying the new method. It is quite evident from several psychological researches according to Baumeister and Bushman (2008); indeed one would tend to treat something new that had potential harm with reasonable suspicion and not wanting to commit to the new method. The other probable theory that would explain the dismal initial performance would be total ignorance or conservancy that would withhold the students from moving away from the norm. This in essence validates the need to have the results of this pilot project as a mirror of what would happen in time.

Notably, according to the results from the IONO fm administrators, the rate of registration and access to the site improved over time and further cements the need for time to study and get used to the new method. As some students put it: *“the system is good but it would take a while to get used to”*. The downloads from the website were evidently increased as a result of increased confidence for students who tried to use the podcasts. For example, in the month of July, there were no downloads and only new members were signed in. In August, there was an addition of 3 members and a total of 13 downloads, meaning that every member had done at least two downloads that month. In the month of September, an additional 7 members were registered bringing the total to 13 members. With the 30 downloads, it means that the two downloads each was added by an extra 4 indicating that the confidence was still there.

Interestingly, October brought forth a rise in the registered number of members. There are several theories that can explain this. One is that, the awareness of the existence of the podcasts had grown and the students were more willing to use the product. The other theory would be that the students who used the podcasts gave and shared their experiences with several friends who in turn wanted to get an experience of their own depending on the information that was shared. The most probable in this case was that indeed the students' registrations were voluntary and that would be supported by the lack of downloads that month. This indicated that there was uncertainty and may be challenges in getting the modules and downloading them.

With the trend already established, the next month, November, proved to be no different and the number of registered members nearly doubled that of the previous month. Keenly looking at the materials downloaded gives a deductive argument that the registered members from the previous month may have engaged in research on the leaflet issued about the site or obtained help from others to significantly make the number of downloads to go to 69. In addition to that, the members who joined from that month may have also shown activity. December provides a rather odd situation from the preceding trend. The number of registrations was as high as November showing stability in growth but the number of downloads was lower at 14. From observation a clear justification is made from the institutional calendar that is off for the month of December coupled by the limited learning around the holidays. This explains the low number of downloads for the month. The findings are underpinned by the perspective of behaviourism theory where podcasting activities may be understood as activities that foster learning as a change in observable actions done by learners. It is known that, within the behaviourist theory, the best way to facilitate learning is that of offering reinforcement based on association between a certain stimulus and a particular response. Application of this principle to educational technology allows drawing the following parallel: stimulus comes in a form of computer-facilitated learning which presents the problem

6.6 INTEGRATION OF RESULTS

6.6.1 What challenges do post graduate/masters' Students face in research proposal writing within ODL context?

In this study, the research question was answered using open-ended queries in the narrative, the interview as well as the questionnaire. As described in detail in **section 6.3.2**, there are numerous problems that the students face. The problems can be summarised as:

- The current modes of communicating with the university are not effective. For example, emails are not answered.
- Information regarding the research proposal writing is not sufficient.
- The steps one should take in creating a draft or the proposal itself has not been outlined anywhere.

- Guidelines are jumbled up since everyone has a different source, mostly from reading, uniformity is a problem.
- There is no single approved format that has been issued.

In answering this research question, the tools will give a comparative aspect that will be used to compare the podcasts to the conventional methods.

6.6.2 To what extent do the learners find acceptable the use of podcasting on mobile technologies as a delivery medium?

The nature of this query began with the evaluation of whether the students think there is any need of replacing the current print based system. As **section 6.3.3** explains, the students have grown tired of the current methods of disseminating information in Unisa with special reference to the College of Education. In **section 6.2.2**, a direct question is posed regarding the suitability of podcasts as a replacement of the current methods. Referring to the analysis chapter, in **figure 3**, 90% of the respondents agreed that indeed podcasts is a worthy substitute.

6.6.3 To what extent does the use of podcast on mobile technologies as a medium of delivery help students to achieve the outcomes expected from the course?

To test the extent to which the students would respond, a pilot project was launched as described in Chapter 4. Awareness levels of the existence of the site were examined as well as whether students actually have the mobile technology to access the resources. To fortify and verify the extent to which the students would go, a question was posed to assess whether the students can actually make a financial commitment to purchase the mobile devices as in the analysis chapter. All the responses to the above were positive. When asked whether the project should be converted to a fully-fledge one, they described the process as a very good one especially for reasons suited for the ODL students as described in **section 6.3.5**.

6.6.4 How do students who have completed the research proposal writing course which integrates podcasting compare to students that did not have podcasting used as a medium of delivery regarding performance and drop-out rates?

To assess this, a self-reporting question was posed to the respondents in the questionnaire and the interview. The question asked whether the podcasts can positively affect the performance of students in research proposal writing module. The response indicated a unanimous response with only a minor group (5%) having divergent opinion. The other 95% describes that indeed the podcasts are of great help as in Chapter 5 **section 5.5.11**. Furthermore, the researcher evaluated the extent to which the podcasts can help in reducing the dropout rates in the ODL programmes specifically due to the challenges in the research proposal writing module. The response confirmed that the students believed it would help.

6.7 CONCLUSION

Despite having a relatively low response rate, the research corrected the figure to ensure that the number used was in tandem with the number of students from the region. That way, the sample would fairly represent the population and maintain validity. A detailed explanation of the analysis was made followed by a rigorous analysis process to establish the connection the data collected had in connection with the concepts discussed in earlier chapters. The input of the podcasts emerged clearly even to achieve unanimous reports that capture both students that used the podcasts and those that did not. The willingness of the students to participate in the use of podcasts is beyond doubt. This was evident in the agreement to use the method as the means to disseminate information but with warnings not to fully roll out all other conventional means but to create a matrix of the best recipe. Apart from that, there are several challenges that emerged as the factors that contributed to some not using the podcasts at all. Most of the challenges can be overcome. The next Chapter presents a detailed summary of the findings, conclusion to the study and recommendations for the study.

CHAPTER 7: SUMMARY AND RECOMMENDATIONS

Concluding this study, this Chapter provides a general overview in order to demonstrate that the aims originally expressed in Chapter 1 have been addressed and achieved. The researcher summarises the study and highlights conclusions arrived at consistent with the literature study discussed in Chapter 2. In addition to this, the Chapter goes through the empirical inquiry done in the study by means of observations, interviews and document analysis in Chapter 4. The final Chapter also suggests recommendations including possibilities of future research. It also presents a model/framework for ongoing training to complement the recommendations.

7.1 SUMMARY OF THE STUDY

7.1.1 Chapter 1: General orientation, problem statement, research methodology, study outline

Nobody will deny that the evolution of education is a piece of history that if held comparatively with other histories will have a very shocking score on the volumes that will emerge. This Chapter looks into the evolution of the education with particular interest to open distance education. This included pencil paper stage, print out/hand out stage to audio and video technologies and other modification of these modes of disseminating information. Accreditation is especially given to the information era also known as the electronic era that captures and include the use of internet and digital technologies in education. To this, a dynamic section of learning emerged, that is, e-learning.

Apparently, at this point, deviation from the norms was rampant. Lower attendance was required and this led to improvement of ODL. Other positive beneficiaries include the sharing of information and materials related to learning among instructors as well as students themselves. Also, the Chapter also exposed some of the limitations of the modes of learning and disseminating information. The major limitation seen was the requirement of use of a particular device at a specific place. Cannot anything go beyond that? The need to further stretch was linked to the existing technology like laptops digital cameras and mobile phones which if

harnessed form an entry of education to the mobile era. The use of mobile devices, as other research showed, had been tapped.

In the midst of the exploding need for use of digital solutions in education, an entertainment was coined to fit the realm of education and hence the birth of the use of podcasts in education (Copley, 2007; Vogt et al., 2010; Lee et al., 2008). The interest in podcasts was mainly due to their benefits in offering students the ability to access learning material everywhere. Also, the addition of this in its compatibility with mobile devices was noted as a means to further improve its usefulness. Research has also indicated that the receptiveness of materials disseminated in podcasts is higher than when conventional methods like textbooks and course notes are used hence making it a viable alternative to some of the conventional methods as documented by Cebeci and Tekdal (2006); Evans (2008); Copley (2007) and Vogt et al., (2010).

Other researchers as highlighted in the chapter showed the applicability of the method in many fields of study and not forgetting the number of universities that had embraced the method. That was compared to the distance learning in University of South Africa (Unisa) which is predominantly print based and the large number could benefit from the use of the method. But, is the use of podcasts feasible? The study thus determined the core of its area of interest as determining whether the method of disseminating educational information is acceptable and a recommended substitute to the current conventional methods. This is especially for the masters' students who are undertaking their research proposals as a problem area as identified in the problem statement and a means to assess the impact of the method on other faculties.

The achievement of the overall aim was facilitated by a number of objectives, namely:

- identify challenges postgraduate research proposal writing students face in context of ODL;
- determine by means of students' narrative and online survey whether postgraduate research proposal writing learners find podcasts an acceptable method of delivery;
- determine benefits of podcasting to students in relation to research proposal writing achievements; and

- compare the performances and dropout rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing course.

For the research, a framework was needed for which this study used a theoretical one. Six theories of approaches to learning/education were determined and established to be sufficient to offer a strong foundation for the research. The theories include the behaviourist approach, the constructivist approach, situated learning, collaborative learning, informal and lifelong learning, and learning and teaching support (Naismith et al., 2004).

The impact of the research was to be determined lest another obsolete time-consuming attempt is made for no apparent reason. The most prominent was the incorporation of the methods of dissemination to the schedules of the distance learning students which included the challenge of making it accessible to the 'nomadic' nature of the students. The use of the podcast is set to boost the retention rates of the students, improving the research proposal writing skills and boost motivation by eliminating any frustrations that exist in the use of the current methods. The research also gives a detailed analysis of the use of the method by the student giving information for use by institutions with a vision of jumping into the digital and technological training of taming education to meet everyone's schedule.

A research method was determined for the study with major consideration of the intended or expected output from the research. For one, this study was intended to unearth information on the topic of interest and thus needed appropriate methods. For this reason, the researcher decided to use triangulation approach in data collection as well as data analysis to achieve the objectives of the study. Limitations were noted as the lack of control on the use of the use of the podcasts and thus the students could avoid listening to the podcasts altogether. As delimitation, the study was refined and only focused on a narrow subject and did not diverge to costs of podcasts production or students attendance among other aspects that surround the matter.

7.1.2 Chapter 2: Literature review

The researcher expounded on podcasts in the education realm. For example, M-learning is an aspect of online learning that is very closely related to podcasts as the mobile technology can be harnessed to provide the same mobility to the means of disseminating information and materials. As described by one of the teams of researchers Laurillard and Pachler (2007), the M-learning provides digital support for learning activities which are active, productive, communicative, collaborative and investigative and has the advantage of the ability to take place even in remote areas. In addition to this, the ability of the method to provide 'just in time' learning which is due to the complete flexibility to the learner is what reinforces the interest in this field.

Admittedly, research into M-learning has been on the rise over the past several years due to the existing advancements in the mobile industry that is consequently pulling everything towards the mobile era (Vavoula & Sharples, 2008; Evans, 2008). It is no doubt that the devices have been used to supplement other methods even as it stands in the area that the study will be carried out. Documentation and critique of various applications have been done especially to the field of English Second Language (ESL) and Computer Science.

Of importance to this study is that the literature review was very clear in exposing the history of use of podcasts and the impact the means of disseminating information had on the ease of use and most important, the performance of the student. The starting point for the realisation of the impact is the fact that the students are relieved of the oppressive environment that conventional methods have presented in their means. A comparative take was done with comparison to the use of radio broadcasting which had its limitations of lack of personalisation and the value of airtime associated. Essentially, it led to development and use of cassettes. Arguably, podcasts were brought forth as a means of bringing back the good of radio type of broadcasting whose fundamental principal was the audio nature of material dissemination with improvements to cater for the limitations in the actual radio broadcasts. It is like a second life to the radio broadcasting but with a touch of the digital wind.

Currently, the use of podcasts has been rampant and successful utilisation, particularly at the Duke University in the United Kingdom. Independent studies report the acceptability of the

method by students due to the skills they have on operation of digital and internet-based applications and devices. To some point, the social nature of the students that propels them to have particular needs in mobile devices and it is a factor that has led to the acceptance of the method as it fits into the lifestyles of the end users (the students).

Nonetheless, classifications have even been made regarding to podcasts. The classes include substantial, supplementary or creative podcasts. As other distinctions are developed, the curiosity on the attitudes of the students is another area of interest for many researchers like Chan and Lee, Miller and Piller (2005) who exhumed that podcasts reduce anxiety and increase satisfaction among students. The contribution of podcasts was tackled in depth using a critique method of existing research and information on the subject. Closer home, the impact of podcasts in distance learning was shown to have success stories in reducing the current problems in print-based distance learning.

To add to that, the existing challenges for the use of podcasts for the areas in which the technology has already been used was expounded to establish how the institutions or researchers dealt with the challenges. The mentioned problems are also anticipated in the pilot project and thus form viable areas of concern from which recommendations may be based for correction to help in actual deployment of such support systems for distance learning in the area of study or similar areas.

7.1.3 Chapter 3: Theoretical framework

In essence, the research was mostly practical with the inclusion of a pilot project of a podcast service. There was need therefore for establishment of a foundation that will give guidelines to the spectrum of expectations to be witnessed in this. In a way, the empirical research that was solicited for this purpose was in one way or another building on the importance of this method or showing the existence of a gap in this research specific to the area that necessitates this research. It is built on the theories of learning that would make the achievement of the aims of this research possible. Due to the emerging technology, the research in this area has come of age and is feasible even to the area of use as in this study.

7.1.4 Chapter 4: Research design and methodology

The objectives of this study are very specific. They are by large the guiding veins to be used to propagate the research to meet the aims. In that case, the Chapter sought to explain and justify the use of methods of collecting data for the study. The need for information obtained from the study is very important and in that case will be the basis of evaluation of the whole process. The methods of data collection need to be suited to the type of information to be obtained (qualitative or quantitative). Since the data comprised both, the researcher used several data collection methods through undergoing a triangulation analysis which was complementary and provided understanding of the phenomena in the study.

To achieve this, the Chapter discussed in depth, the specifics of the research designs used (since the data collection was triangulation too), the sampling procedure that was used, the data gathering processes, the instruments that were used to collect the data as well as an evaluation of the validity and reliability of the research conducted. The triangulation/ mixed method was justified in the Chapter and also gave the reasoning behind the use of both qualitative and quantitative research methods. Notably, the data collection tools that were used in the study include online observations, online reflections (via a commentary tool incorporate in the podcast website, email and discussion forum), online survey (electronic and printed types) and finally, focus group interviews.

7.1.5 Chapter 5: Data analysis

For a mixed method, there is definitely a blend of analysis tools that will be used to be able to process the data to make meaning of it. In that regard, this Chapter developed a step by step process which ensured and confirmed that the data collected were as per expectation and maintained the standards of the study. For that matter, it is in this Chapter that the sampling was discovered not to conform to the standards of proper sampling. The respondents as per what was received at the commencement of the analysis exceeded the representative ratio while the other one had not met the representative ratio. To reinstall the validity and reliability of the results, a correction was used to make sure that the sample was correspondent to the persons it represented.

In addition to this, methods of analysing the data, which in this case was found to be both qualitative as well as quantitative, were investigated and justified. Due to the nature of the types of data and the intent to which they suited to this study, the SPSS software was chosen to handle statistical data (quantitative) whereas Atlas.ti was chosen to handle qualitative data. The functions of the software in this case were to achieve the desired output that would make meaning to the research. The SPSS in this case coded data and was used to manipulate data to get representative figures that were displayed in tables and charts. In contrast, Atlas.ti was used to code responses and establish links and relationships between variables as well giving representative ratios to the sample.

Care was taken to outline every step that was taken in the whole process so as to make the replication of this study very easy and instil confidence and integrity to the process. In terms of the questions that were asked in the questionnaire and the interviews, the analysed data were discussed in relation to the nature of the query and harnessing support from the qualitative data obtained from the questionnaire itself, observation and commentary from the students. To avoid confusion, the data were represented following the questions order in the interviews and questionnaires. Any inabilities that were noted were highlighted in the course of writing as well. Naturally, the discussion also explained the tentative result that was obtained as a response to each type of query raised in the study.

7.2 SYNOPSIS OF THE FINDINGS

As indicated in 5.3, the findings of this mixed method inquiry are presented and integrated through a comprehensive literature study and empirical inquiry as obtained in Chapter 2 and 3 and are summarised hereunder:

7.2.1 Biographical data

7.2.1.1 Gender

In the initial respondents' tally, 48 respondents were distributed as 11 female and 37 male participants. The research as articulated in Section 4.2 and 4.4 indicated that the respondents were not representative of the initial calculated representation ratios, thus necessitating a need for correction discussed in detail in Section 4.4. The adjusted respondents for the questionnaire were

36, in which 29 were male and 7 were female. The interviews which were conducted after this realisation were very keen to maintaining the representative ratio thus eliminating adjustments. There were 12 interviewees, 2 female and 10 male.

7.2.1.2 Regional representation

Among the Unisa centres, for reasons explained in Chapter 4, the regions used in this study were Gauteng and Durban. Initial respondents for Durban were 13 adjusted to 12 whilst Gauteng initially had 39 but was adjusted to 36 for both questionnaires and interviews. In the adjusted participants, out of the 12 from Durban, 3 were female while 9 were male. In Gauteng's adjusted respondents (36), 29 males were selected and 6 females.

7.2.1.3 Registration for the proposal writing module

In heeding to the inclusion criteria in Chapter 4, the question was posed to ensure that indeed the participants that were used in this study were all in the category of interest as explained in the preceding sections. All the participants in this study met the inclusion criteria even for those who were eliminated in the correction stage of the data.

7.2.2 Problems in writing the research proposal

To maximise on feedback and get a good representation of the weight of the matter, statistical methods were used. The statistics showed that indeed there were many problems from the use of the print-based distance learning protocols. In addition to this, it was imperative that the research reveals the nature of these problems as was obtained from the discussion forum in the data collection methods. Among the problems realised was communication and lack of consistent material to use in preparing the proposal.

However, a small section of the students indicated that they have not had any problems in writing the proposal. Details indicated that this may be as a result of personal commitment, student abilities and the use of auxiliary channels such as the one created by this project to communicate and share with other students, who may provide materials. The response showed to a great extent the nature of the problem that the students encountered and the need for an

immediate solution to maintain the quality of education and keep the students motivated so as to solicit interest in education.

7.2.3 Ability of another method of disseminating learning material to change the experiences in writing research proposals

It is not in dispute that there exist other sources of material that aid in preparation of research proposals. As Belot and colleagues (2004) pointed out, the capabilities determine whether the students will be comfortable with particular methods. For research proposals, there exist many formats in the internet that are uniquely different but achieve the same purpose. This study sought to know whether a replacement of the current methods of disseminating materials (for the research proposal writing), would be able to change the experiences that students have. To this the student overwhelmingly agreed that the system (print-based distance learning) should be changed. Most of them site the need to have uniform material for the module. A convergence point is therefore established in line with the intents of this research (to recommend use of podcasts).

7.2.4 Podcasts as a good substitute in disseminating the research proposal writing material

Following the previous question, the study inquired the applicability of podcasts as a substitute to the current print-based distance learning. The inquiry was very specific and sought to establish the attitude the students had to podcasts as a means of disseminating research proposal writing material as compared to the existing framework that they have many complaints on as established earlier on. In this question, the students indicated that the use of podcasts will make a standard format that will reduce frustration, improve motivation and confidence in submission of the research proposals.

Although they also mentioned the need for supervisor-student interactions, the matter is not captured in the scope of this study and in any case distance learning is meant to have minimal supervisor-student interactions. In statistics, 90% of the students pointed out that indeed podcasts will be a viable replacement given their experience as pertains to this study and the knowledge they have on advantages of podcasts. The other minority include the students who felt that

instead the supervisor-student interaction is the best way forward. This shows an overall acceptance of the use of podcasts. It therefore eliminates the question of acceptability from the intended students and rolls the ball to other factors in the use of podcasts.

The interactive nature of the podcasts can take credit for the acceptance due to the presence of instructors who give information and in the mix of all that, students ask questions regarding problem areas in the writing of proposals. This can be used by the students as discussed in Chapter 1, 2 and 3 at any point of need as either the core material or supplementary to the others provided.

7.2.5 Awareness of the existence of podcasts for the research proposal writing module

In research, it is important to establish the source of divergent views or the lack of any feedback thereof. In this case, the confirmation that the investigation preliminaries, that is, the students actually used the podcasts for the research proposal module would give greater insight to the area of interest. Nonetheless, the lack of use would also give opinion but if to a great extent the awareness was not properly carried out, it would form explanations for variations in the study.

For this study, the statistics show that 7% of the sample was not aware of the project that was conducted. According to the website registrations that were received, out of the 130 students who registered to participate, only 121 registered giving an account of the figure. The figure is acceptable and in this case was explained by the feedback obtained by those who did not register in the questionnaire and the interview process. In that case, the other questions shed light on the circumstances which led to their unawareness. The awareness campaign for the pilot project can therefore be deemed to have been significantly successful and the contribution of the full participants was viable to commence further analysis.

7.2.6 Listening to podcasts

Having crossed the hurdles stipulated, the use of the podcasts was an area that needed investigation despite the self-reported claims from the students. It is for this reason that a secondary verification mechanism was put in place for diagnosis and analysis as to the challenges and other aspects surrounding the use of the technology on mobile devices. The data were obtained from a collaborative approach between the researcher and administrators of IONO

fm website. Data showed that the introductory podcast was most listened to and others had lower listeners.

Analysis showed that the reason behind this is the technical problems that the students faced in accessing the podcasts. Although the problem was anticipated and a manual compiled to help the students have an easy time going through the website, its effectiveness was not guaranteed. This is because there was no live demo and a help desk to cater for such situations and it fitted within the boundaries of the study. Other explanations come with the difficulty in taking a risk of using the podcasts, which at the time were foreign in doing a research proposal which was on a strict deadline. Therefore, the confidence in the method could not attract significant commitment for all the students. Coupled with conservancy (tending to stick with the norm), the students need reassurance that is very possible with larger projects as opposed to the constrictions in this study that were both budgetary and time bound.

Notably, administrators in the report showed that the rate of registration increased with time showing that indeed the students were absorbing the method and trying their best to indulge in the use for which great benefits awaited. The ‘downloads’ increased for all the topics as well as time went by. It means also that the students were learning how to go around the site to access what they needed. This is positive and indicates that the same can be achieved for future projects of this nature. The results in this case brought to light the challenges that the students face in the use of podcasts in such conditions and offer means of recommendation for such projects.

7.2.7 Possession of mobile devices that can access the podcasts remotely

One of the important aspects of this study is the implementation of a system that will enable the use of mobile devices in accessing the learning material which in this case is podcasts. Distance learning, details of which were discussed in Chapter 1 and 2, is meant to serve many purposes. Among them, creating an opportunity for students who live far away from the school to have access to education while they continue with other duties, it also equally gives consideration to members who would want to learn as they work. Essentially, it is the ability to access material at any point or anywhere that makes this project a very specific one. Mobile devices in this case are captured as laptops, tablets and PDAs as well as mobile phones.

Admittedly, 25% of the sample said that they did not have mobile means of accessing the material as defined in this study. Most of them are confined to desktop personal computers and for those who do not have them, an occasional visit to public utilities that have computer services like universities or commercial premises was described as the means of operation. This number, which is a significant portion of the sample, also explains the low user downloads of some of the topics in the IONO fm website.

7.2.8 Willingness of Masters' students to purchase mobile devices to enable them to use research proposal writing podcasts effectively

The ongoing trend of the mobile era is one that was noted in the formulation of this study. Most importantly, it has the effect on the mobile phones available to the users. At present, there are phones which can be able to offer same or competitive performance to some of the desktop computers that are in use. It means that the website used to host the podcasts in this study can be accessed by these devices. It was also anticipated that the students may not have the mobile devices at present and it was thus any area of concern to the study.

Upon evaluation of the current phone prices about R1000 can get one a mobile phone with capabilities that have been specified as above. It was therefore an object of interest on whether the masters' students are willing to make such a purchase to enable him to access such material to be used in the course of education. In the analysis, it emerged that 92% of the students are willing to make such an investment. It was pegged to the multiple functionality of the mobile phone that has the added advantage of accessing such material. Therefore, it is more like an upgrade that the students are willing to undertake. With such considerations, the use of podcasts will not have many challenges in acceptability provided other aspects of the podcasts remain of high quality, even element dealing with support in knowing how to use the services and the quality of the podcasts itself which were mentioned as the major area of concern.

7.2.9 Challenges in using podcasts and suggested improvements

One of the theories developed earlier in regard to the causes of reduced download of files on the website is confirmed at this stage. The specific theory was that indeed the students have problems in having their way around the website and this has an effect on the ability to download the podcasts. A control measure of this was done by developing a leaflet containing guideline on how to access the files was made. As mentioned previously, the reliability of the method is not very good since the document itself may contain technical information here and there that would be simplified by the direct presence of a person to help in understanding the operations. The data obtained showed that there were frustrations in using the system and the students opted to use other conventional methods that would be easily accessible.

Students who accessed the material from public utility areas faced even more challenges since the presence of malware and viruses would corrupt the files and thus hindered the transfer of the files to other mediums like memory sticks. In addition to this, the lack of mobile devices also limited the times the students could access the materials. This is against the target of the study to make access an on-need basis issue. The nature of queries in the content in the podcasts interactive session according to some of the students was not exhaustive and one would need to supplement the information. This was however noted as a general limitation of the use of podcasts since they do not occur live.

7.2.10 Deployment of the podcasts as a fully-fledged project to cater for the research proposal writing course

In the aim of this study, examining the feasibility of using audio podcasts was not only theoretical but was to be applied to real situation preferably in the same area of this research. In that case, it was part of the interest of this study to determine the extent to which the students will approve of the use of podcasts. This in effect is an open proclamation of the need for the product. The data collected for this question was very encouraging as 97% of the sample supported the deployment of the method. It therefore shatters any doubt on the deployment. The speed of transmission of information with this method as opposed to mailing services used in

sending the print-based is incomparable. This method is a 'one-click' give away; therefore, it does not eat up the deadlines that have to be met by the students.

Over 50% cited the convenience as the major reason for endorsement of deployment. Others cited the portability and accessibility that is coupled with the use of mobile phones as a very beneficial to the ODL students due to the engagements many of them have. Also, the semi-interactive nature of the podcasts is a viable substitute of the non-interactive nature of print-based ODL programmes. The students, who in giving this feedback had an experience of using both print and podcasts, stipulated that the ease of reading using podcasts is higher since the oppressive environment in reading texts is eliminated and the time spent is reduced significantly.

Other attributes that lead to endorsement include the concise nature of the material and incorporation of technology in learning. Opponents of the method made it clear that the method cannot be able to substitute normal interaction in conventional methods. In that case, it is made clear that the method is not meant to substitute everything in all cases but is a good complementary method especially to ODL students.

7.2.11 Submission of research proposals

In the event that a research proposal is submitted and accepted, the research is rendered as passed. For this case, the study formed a query of the nature interested in whether the students who use the podcasts can be able to pass the research proposal module. The data in this case are that of the students who had submitted their proposals at the start of the analysis process.

The students who had not submitted their proposal was 5% of the total sample. Care was taken to subtract the sample that had not used the podcasts (7%). This was in the taste of maintaining objectivity in the research. The results show that the podcasts can guide students into passing the research proposal module. Amongst the students that used the podcasts, there was no report of a case where ones research proposal was rejected.

7.2.12 Use of podcasts to compile research proposal

Interest in this was the portion of the sample that was aware of the existence of the podcasts. To that effect, it eliminates any excuse of awareness and gives room for thought for other processes.

The investigation aimed to unearth whether the element of choice presented to the students against other methods would still lead them to use the podcasts. In that case, it would indicate that the preference was based on the ability of the podcasts to meet educational needs of the students to a degree of surpassing the other existent methods.

The sample that used the podcasts in compilation according to the data collected was 88%. Notably, the figure is slightly less than that of awareness. This indicates that some of the students were aware of the existence of the podcasts but chose to use the other sources of information in the preparation of the proposal. Reasons as discussed in depth mostly include the challenges that were associated with the access to the material.

7.2.13 Influence of podcasts on improving performance in the research proposal writing course

What is the high performance sought in the research proposal writing course? The study's enquiry led to the realisation that actually there are many students who register for the module but do not finish in time. As the data from the discussion forums showed, frustrations were many and a considerable number of students did not finish the proposal. As mentioned earlier, the acceptance of a submitted proposal is synonymous to passing the module, since the lecturer considers the minimum threshold or required a pass mark for that matter. If the proposal is not rejected, the student is considered to have passed the module. Unanimously, 95% of the sample believed that the use of podcasts can be of benefit towards the passing of the research writing module. In that case, the researcher took an assumption that the student made a comparative assessment of how he or she would perform with or without the podcasts to make the comment in this query. Other students, the opposing 5% attributed the ability to perform on ability and chosen topics which is also valid. Majority of the students who used podcasts finished the proposal at the time this study was concluded meaning that even the speed is improved as well.

RP completion rate for those who did not use podcasts

7.2.14 Influence of podcasts on the rate of dropouts that may be attributed to hardship in research proposal writing course

A similar margin was established in the question as was witnessed in the question of performance. For this case, the sample indicated at 92% that indeed the number of dropouts that is witnessed as a result of the challenges that face them during the preparation of research proposal being removed or lowered considerably. It is evident that even internet use is a challenge for many based on challenges in navigating the podcasts website. It therefore means that these students will benefit from using the podcasts to save the data mining trouble as well as unlimited access to those who live in far areas.

7.3 RECOMMENDATIONS

From the conclusions drawn above, it is beyond doubt that the research was successful. By the study being successful, it means that the study has shown that indeed the use of podcasts should cease from being in books and similar studies to something tangible that indeed the students who endorsed the method can be proud of in many ways. Boldly therefore, it is the recommendation of this study that the podcast project should be re-strategised to cater for the shortcomings noted in the conclusion and made into a fully operational feature of (Unisa), ODL programmes.

Subject to consideration of the limitations of this study and the challenges that will be pointed out in this section, the use of the method of disseminating information is one whose potential to help the students, increase the motivation to continue in higher learning is nothing short of what was reviewed from past researches and existing cases in Chapter 1, 2 and 3 of this publication. Lessons adopted from the study have immense application even to areas where the use of podcasts has been put in place and those that have never installed such alike. Whether or not the success of the result will be guaranteed is a matter of consideration of what has been deemed by this study. This is accompanied by other arising issues that may not have been captured due to limitations specified in the preceding chapters of the study.

The above is a general recommendation of the whole project and the specifics of the recommendation as per the conclusion following in the subsections herein.

7.3.1 Preparation of quality audio recordings

In the results, it was noted with immense stress that the quality of the audio podcasts is a factor that will affect the decision that students will have to make. Quality in this case is defined in the content of the material being relevant, concise and understandable. It therefore means that the compilation of the content of the podcast has to be done professionally and with great concentration from the supervisors/educators as well as the students.

The input of the student in regards to this is composed of areas of inquiry that have been identified by the particular group of students depending on the topics under consideration. Whilst a team of experts will dwell on the curriculum, it is best to get the questions to be answered “from the horse’s mouth”. Prior or during the compilation process, the student should be asked to contribute by asking troubling questions that will be compiled and answered in the podcasts in consideration to time and space as well as in other avenues that can be attached to the podcasts in case they are too many. Such an attachment can be referred to as “Introduction to research proposal writing FAQs”, if the podcast is about Introduction to research proposal writing and so on. In doing so, the rate of aborting use of podcasts will be reduced and it will be a comprehensive source of information that the students are in need of.

7.3.2 Massive pre-launch awareness campaigns

One of the factors that affected the use of podcasts as determined by this study is the level of awareness on the existence of such services. In the pilot project for this research, registration of students who were willing to be included in the project was done and emails and SMS communications sent in regards to any updates. Nonetheless, there were still a considerable number of students who did not remember it. If it was possible to get the students aware and create an acceptable amount of curiosity about the service, the first use will be used as a means of convincing the students that indeed the means of material dissemination is a good one.

It will therefore include incredible evaluations that will lead to getting the student’s attention. However, it is the view of this study that the exact means is dependent of the resources that have been allocated towards the whole study and the share to this follows. One of the very cheap, in fact, cost free is the branding of the product. Like a commercial product in the market, the name

of the product is very crucial in ensuring that the consumer can be able to recall it during time of purchase. Similarly, create an interesting name that the students can associate the podcasts with. Other methods include posters, leaflets and brochures of the product. If there are resources, more initiatives such as road shows and event sponsorships to cement the podcasts will go a long way to ensuring that students have recognised it.

7.3.3 Simplicity in website host for navigation

“I could not download it” is an all familiar term as the responses showed. For those who will take time to get used to it or for the non-technical students who are very willing to try the service and sing of the transformation hailed by this study knowing you way around the website is a very crucial part of getting to the “honey”, that is, the podcast in this case. Simplicity is what will create this platform for accommodating the skills and the willing students a chance to utilise podcasts.

In recommendation, where possible, the site of the podcasts should be a single-dedicated host to these podcasts only (not include others or only for a particular institution for which the students can easily follow). Use of standard website that is an umbrella for many podcasts from all over the world is a cost effective method but the fact that the podcasts that may be entered there may be just a drop in the pool creates a high chance of getting confused and lost in the process. The more dedicated/specific the website, the better for the sake of learners whose expertise in internet related matters is considerably low.

In the event that the use of an umbrella type of website is inevitable, more efforts should go into providing demonstration and support services for students. This option is not entirely being cursed out since such websites contain other podcasts as well which may be helpful to the students; it is a library of its own realm. Not much can be done on the design of the website in this case but in any case the choice of any of these two recommendations will work under the stipulated terms.

7.3.4 Support services for configuration of mobile devices and training in use of the podcasts

The main aim of this study was to enable the students to use the mobile devices they have to harness the benefits of using podcasts as an educational tool. Support services in this case are a concoction of physical address where students can get help regarding the use of the website within specific working hours. As a benefit, students who may purchase new gadgets to fulfil the call to this service will have a challenge of using them to their advantage. That leads to the issue of staff. In this support centre, the staff should be conversant with use of any mobile device and demonstrate first hand to the student how to use the file including access to the podcasts.

Another task of the support system will be to harmonise the registration of the students and act as a link to any problems that arise, for example, inability to access the website and password related issue among others. Students with any problems will visit the support centre and the issue will be addresses. In many ways, this will ease the use of the website and curb any resulting frustration that would have emerged.

7.3.5 Public endorsement of the contents of the podcasts to give confidence to users

It is not enough when a student or an external body declares itself as a provider of educational material for a particular course. As mentioned in the preceding chapters and sections above, there exist very many ways of doing things, even academic. Some of the methods are universally approved while some are not acceptable in all institutions of higher learning. The content of the podcasts should be created based on the approved course outline from the institution.

Having met the threshold from the institution, it is important that relevant personality from the institution endorse the podcasts as having met the requirement of the university and recommend its use and if seen fit highlight some of the advantages of using the method. This should be done publicly at an appropriate function, in this case the launch of the service to the students. In essence, the confidence of the students will be improved and the need to endless hustles in data mining will be seen as a waste of time and resources.

7.3.6 Collection of feedback and recommendations for improvement

End users of podcasts are identical to buyers of a product outside the education realm. In reasoning, the student will encounter issues that involve the product not necessarily bad but sometimes it could be. It is important that negative implication or faults noted by the student be addressed so that the use of the podcasts is not aborted due to such cases. Similar to the IONO fm website system, a feedback channel is a sure way of tapping into the thoughts of the students regarding the podcasts and will also point out the areas of weakness for the website, the podcasts themselves and other related matter including performance of the support systems. Not much can be said about it but its importance goes to the point of determining the success of such a project.

7.3.7 Recommended framework for the use of podcasts to teach research proposal writing.

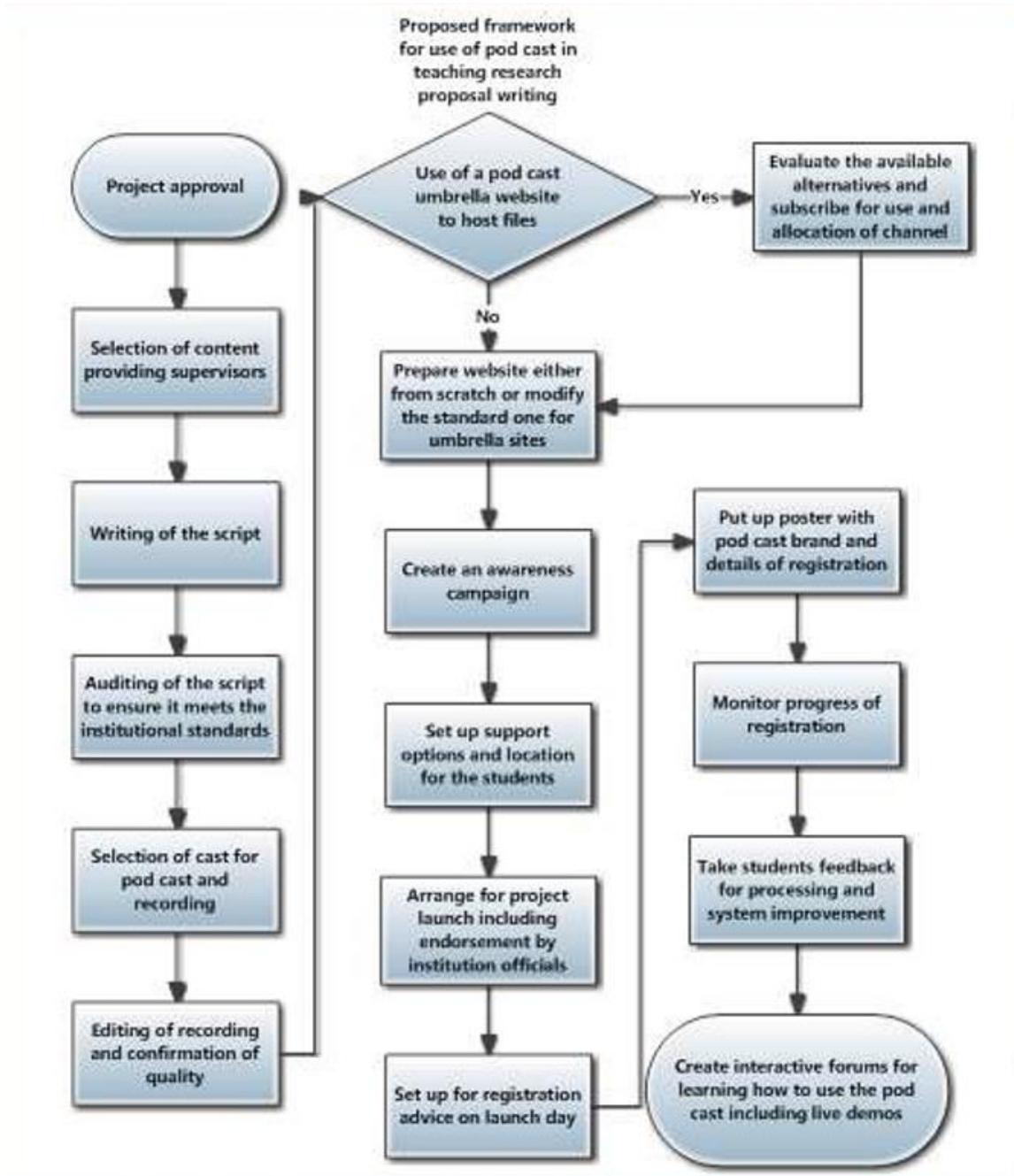


Figure 24: Recommended framework for use of podcasts in teaching research proposal writing module in ODL environments.

The creation of a fully-fledged podcasts facility for the area investigated will be a significant contribution of this research towards improving teaching and learning in ODL. In line with the recommendations therefore, the above flow diagram is the framework that explains the process for which the use of podcasts to teach research proposal writing can be done and taking into account finer details which have been mentioned in this study.

The framework gives a visual summary of the process that was used in this study but has an added advantage of incorporated improvements that are as a result of the data collected and fruitful analysis that makes the recommendation very realistic. Among the added functions that were not in the initial study is the endorsement from the institution on a public event that will boost the image of the podcasts and instil confidence in using the method, branding of the podcast to make sure the students remember it as part of heightening the awareness campaigns in this project and options of an umbrella podcast hosting website or a customised one.

Notwithstanding, the study framework also incorporates the need and use of a support system for the students. Note that the new additions are as a result of the analysis that was done and will improve the performance of the project significantly.

First, the framework suggests consultation with the institution and the personalities involved to approve the project. It follows that the content of the podcasts has to be formulated by a team of supervisors with relevant experience in the field. Afterwards the script, which will be in the form of a lecture, will be created by the same team so as to ensure no stone is unturned. The input of the script will include input from the students who will forward burning questions regarding research proposal writing and other additions will be made by the panel of professions who know various areas of weakness. Auditing of the script will follow to ensure that indeed it is in line with the course outline and formats approved by the institution. As the recording takes centre stage, a cast will be selected with one as the speaker (lecturer) and others as students who will take part by asking the questions. The recording will then be edited and the quality checked to meet the standards required.

Another task that will be encountered is a decision making one as established from the recommendations in regards to the hosting of the podcasts. One option presents using the

Umbrella websites which host podcasts from all over the world, while the other entails the creation of a full customised website for this material only. If the Umbrella option is chosen, there will be need to evaluate existing Umbrella websites to establish the best. Preparation of the websites will follow with one starting from scratch while the other will entail customising the existing one (the Umbrella website).

Awareness campaign will be planned from that in consideration of resources and desired objectives. As deemed important in this study, a support system including a specific location and dedicated staff will be set up to help students. A colourful launch will follow as part of a marketing/popularisation strategy to help the start of the project. Institution official will be in attendance to give endorsement to the project in terms of conformity to the institution standards as well as a means of boosting confidence in the method by students. At the launch, registration advice will be done in exhibition stands to capture the curiosity of the students. The podcast will also be given a brand name and after the launch posters with the registration process will be put up.

As part of the follow up processes, the model recommends monitoring of the registration progress to device measures of increasing popularity and dealing with issues of stagnation or abortion of processes. Student's feedback will also be taken for processing to evaluate the project and keep the performance at the expectations of the project. Also, timely interactive forums will be held to address issues on how to use the podcasts, system performance and should include live demos of the processes. If all this is followed, the project will be able to handle many challenges identified in this study and would have better chances of success.

7.4 POSSIBILITIES FOR FUTURE RESEARCH

Regarding future research, the study recommends the following to be done in ensuring that indeed the technology is utilised optimally:

- i. This research deals with the use of podcasts in research proposal writing. Further research should investigate the applicability of the podcasts in other subjects which will help in transforming the ODL programme.

- ii. As the changes in the mobile era are not a matter of speculation, longitudinal research in the area of interest to this study, that is, use of mobile devices in podcast use, research on the emerging trends in the podcasts themselves will ensure that the system remains current and in tandem with student needs and expectations.
- iii. Closely related to this, the aspect that indeed ODL students have a large age bracket in the participating students, the interaction of the use of mobile devices and podcasts in this setting and the difference in consideration of age should be studied with the aim of catering for the deprivations of the members of the programme to create an atmosphere where everyone is comfortable with the use of podcasts.
- iv. As noted in the preceding chapters, the technological expertise or skills of the students is not uniform and is a major concern since it affects the ability of the student to access the podcasts. In that case, research to establish the level of skills in the targets of this project will be helpful in knowing the approach to be taken in ensuring that the students are able to access the materials.
- v. Now that the students have declared a profound interest in investing on mobile devices, any additives that can be made to the students to use in addition to podcasts will be in line with incorporating technology into education. Thus research on emerging technology that can be used complementary to podcasts is required.

7.5 CONCLUDING REMARKS

Comparing the stage of the mobile era that this research has been conducted, the merger of mobile devices and podcasts could not have had a better landing. The level of sophistication that is being incorporated on the mobile devices is capable of handling the entire study without requirement of any external aid. Closer home, the contents of this research have been as a result of continuous research over the years for the contributors and the researcher as well. It is the hope of the researcher that indeed the findings of the research and the recommendations will be used to fuel and propel the incorporation of mobile devices in education. All this, is to make the quest for students to climb the education ladder, a matter of interest and not perseverance of the frustrations that come with it.

ODL has become an integral part of the current society and as it is, many challenges have come upon it. As the study has showed, the current print-based operation of the programmes has been a source of frustrations and many students have either lost hope or the experience in a particular quest for knowledge has made them not to wish for any more. Is there a possibility to change this? Definitely as the study has shown, the solution lies in creating a bridge to conform to the current schedules of the modern man and woman. The most reliable bridge in this case is the mobile technology. Coupled with education solutions such as podcasts, the potential to improve ODL has been proven from this study. The challenges presented as per the recommendations can be overcome to create an effective system.

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APPENDICES

APPENDIX A: ETHICS CLEARANCE



APPLICATION FOR ETHICS REVIEW: COLLEGE OF EDUCATION

- Students should be made aware of the policy for research ethics of UNISA available at:
http://cm.Unisa.ac.za/contents/departments/res_policies/docs/ResearchEthicsPolicy_apprvCounc_21Sept07.pdf

- **INSTRUCTIONS:**
 - Complete all sections of the form in full. **Avoid statements such as SEE PROPOSAL.**
 - Include appendices of all relevant documents (such as consent forms, letters requesting permission to conduct the study, and research instruments) and **ENSURE THAT ALL SUCH DOCUMENTS HAVE BEEN LANGUAGE EDITED.**
 - Make sure that the ethical compliance agreement, section D16 is **SIGNED.**
 - Submit the completed form to your supervisor who will submit the form to the College of Education Ethics Review Committee.

- The Ethics Review Committee will evaluate the methodological, technical and ethical soundness of the application.

- The completed, signed document should be submitted to the College of Education Ethics Committee Chairperson: Prof Lovemore Nyaumwe nyauml@Unisa.ac.za

A RESEARCHER'S DETAILS

A1 FULL NAME

MARIA MADIOPE

A2 STUDENT NUMBER

(ATTACH LETTER OF REGISTRATION CONFIRMATION FROM UNISA)

4103-682-4

A3 ADDRESS

P.O. Box 911 358

Roslyn

0200

A4 CONTACT DETAILS

- | | |
|--|--|
| <ul style="list-style-type: none">• TELEPHONE• CELL PHONE• EMAIL ADDRESS | <ul style="list-style-type: none">• 012 429 6972• 0825793767• madiom@Unisa.ac.za |
|--|--|

A5 ACADEMIC AND PROFESSIONAL QUALIFICATIONS

<ul style="list-style-type: none">• ACADEMIC• PROFESSIONAL	<ul style="list-style-type: none">• Med Computer based Instruction• Curriculum and learning programs developer.
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B DETAILS OF PROPOSED RESEARCH

B1 TITLE OF DISSERTATION/THESIS

<p>Feasibility of using audio podcast on mobile technology to teach research writing in open distance learning: Case of the university of South Africa</p>

B2 PROGRAMME DETAILS

<ul style="list-style-type: none">• DEGREE:• AREA OF SPECIALISATION:• PROGRAMME CODE	<p>DEd</p> <p>Didactics</p>
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B3 NAME OF SUPERVISOR OR PROMOTOR AND CONTACT DETAILS

<ul style="list-style-type: none">• TITLE, INITIALS, SURNAME• DEPARTMENT• TELEPHONE• EMAIL	<p>Dr J M Ranko-Ramaili</p> <p>Office of Research and Graduate studies</p> <p>012-4298988</p> <p>rankojm@Unisa.ac.za</p>
---	--

B4 NAME OF CO-SUPERVISOR (IF APPLICABLE)

<ul style="list-style-type: none">• TITLE, INITIALS, SURNAME• DEPARTMENT	Dr. Mohamed Ally Chair and Professor, Centre for Distance Education Researcher, Technology Enhanced Knowledge Research Institute Athabasca University Canada 1-866-916-8650
<ul style="list-style-type: none">• TELEPHONE• EMAIL	mohamed@athabascau.ca

B5 ORGANISATIONS OR INSTITUTIONS INVOLVED IN THE STUDY

<ul style="list-style-type: none">• NAME• ADDRESS• CONTACT DETAILS	University of South Africa P.O.BOX 392, UNISA.PRETORIA.0003 012 670 9000
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B6 SPONSORS OR FUNDERS

<ul style="list-style-type: none">• NAME• ADDRESS• CONTACT DETAILS	University of South Africa P.O.BOX 392, UNISA.PRETORIA.0003 012 670 9000
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B7 OTHER PERTINENT INFORMATION SUCH AS CONFLICT OF INTERESTS

NON

C PROPOSAL SUMMARY SHEET

C1 PROPOSAL ABSTRACT

- *Introduction, background and purpose(include at least 3 references to recent literature)*
- *Problem statement and anticipated outcomes*
- *Population; sample & sampling technique; inclusion or exclusion criteria (if applicable); withdrawal or discontinuation criteria (if applicable)*
- *Research design, activity timeline, research instrument (self/adapted/existing); data analysis method; ethical concerns with reference to respondents, institution as person, researcher, specific to study field. Safety procedures and criteria (if applicable)*

C2 RESEARCH OBJECTIVES

The aim of this study is to explore the **feasibility of using audio podcast technology to teach research writing in open distance learning at the University of South Africa.**

In order to attain the set aim, the following objective are proposed:

- Identify challenges postgraduate research proposal writing students face in the Open Distance Learning context
- Determine by means of students' narrative and reflections whether postgraduate research proposal writing students find podcasts an acceptable method of delivery
- Determine benefits of podcasting to students in relation to research proposal writing set outcomes
- Compare the performances and drop-out rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing module.

C3 RESEARCH DESIGN

The study is explorative interpretive research. An exploratory approach as I try to the **Feasibility of using audio podcast on mobile technology to teach research writing in open distance learning**. The study will use a qualitative research approach.

Participants in this study are all Masters' students registered for the research proposal module in the College of Education, from both Gauteng and Kwa Zulu Natal. The study uses purposive sampling of all the students who make use of podcast in the Gauteng and KZN regions of UNISA.

- The module lecturer will design and develop the script for the research writing module and record audio podcast.
- The audio podcast will be populated by the researcher on the module site Or IONO fm
- Students registered for research proposal writing module will be informed about the podcasts and how they could be accessed.
- Observe the student registered for the research proposal module (MPEDU91) twice a week for 3 months on:
 - whether they are accessing podcasts
 - how often
 - how they access the podcast
- Request students to reflect daily by means of narrative using Discussion forum on MyUnisa.
- I will use the Atlas-TI for qualitative data analysis.

C4 HOW SHOULD THIS STUDY BE CHARACTERISED? (Please tick all appropriate boxes.)

Personal and social information collected directly from participants	Yes [√]	No
Participants to undergo psychometric testing*	Yes	No [√]
Identifiable information to be collected about people from available records (e.g. medical records, staff records, student records, etc.)	Yes [√]	No

***Please add details on copyright issues related to standardized psychometric tests**

C5 WHAT IS THE AGE RANGE OF THE PARTICIPANTS IN THIS STUDY?

Approximately 30 – 60 years

C6 LIST OF KEY TERMS, ACRONYMS AND ABBREVIATIONS

Open Distance learning, Podcast, mobile learning

C7 DESCRIPTION OF REPORTING TO ETHICS RESEARCH COMMITTEE

The researcher will on completion of the study send a copy of the dissertation to the ethics committee.

C8 DESCRIPTION OF HOW PARTICIPANTS WILL BE INFORMED OF THE FINDINGS OR RESULTS AND CONSULTED ON POTENTIAL OR ACTUAL BENEFITS OF SUCH FINDINGS OR RESULTS TO THEM OR OTHERS

On completion of the study the researcher will send a report to all participants an electronic version of the research findings via email.

C9 DESCRIPTION OF THE RISKS OF THE PROCEDURES WHICH PARTICIPANTS MAY OR WILL SUFFER AS WELL AS THE LEVEL OF RISK

None

D PROPOSAL RELATED INFORMATION AND DOCUMENTS

(ATTACH RELEVANT DOCUMENTS TO THE PROPOSAL)

D1 PARTICIPANT INFORMATION SHEET (IF APPLICABLE) – APPENDIX 1

D2 DESCRIPTION OF THE PROCESS OF OBTAINING INFORMED CONSENT

The researcher will visit the regions to hand deliver the informed concerned forms during the contact research workshops. The participants will then complete the forms and give the researcher the forms back.

IF THE PROPOSED PARTICIPANTS ARE 18 YEARS AND OLDER, IS THE INFORMED CONSENT FORM FOR PARTICIPANTS ATTACHED?

Yes ✓	No	Not applicable
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IF THE PROPOSED PARTICIPANTS ARE YOUNGER THAN 18 YEARS, ARE CONSENT AND ASSENT FORMS ATTACHED? (In order for minors (individuals younger than 18 years of age) to

participate in a research study, parental or guardian permission must be obtained. For minors themselves, a youth assent form is required.)

Yes	No	Not applicable√
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D3 INFORMED CONSENT FORM IN ENGLISH AND THE LANGUAGE OF THE ENVISAGED PARTICIPANTS – APPENDIX 2 (IF APPLICABLE)

D4 RESEARCH INSTRUMENTS SUCH AS QUESTIONNAIRES, INTERVIEW GUIDES AND SIMILAR DOCUMENTS – APPENDIX 3 (IF APPLICABLE)

D5 MEMO TO INSTITUTION REQUESTING PERMISSION TO CONDUCT THE STUDY – APPENDIX 4 (IF APPLICABLE)

D6 LETTERS OF PERMISSION FROM RELEVANT BODIES – APPENDIX 5 (IF APPLICABLE)

APPENDIX B: INFORMED CONSENT LETTER

I.....agree to participate in the research project on, Feasibility of using; that is being conducted by Ms Maria Madiope from the University of South Africa.

I understand that the purpose of this study is to hold an individual interview to clarify:

- The challenges postgraduate research proposal writing students face in context of Open Distance Learning
- Determine by means of students' narrative and online survey whether postgraduate research proposal writing learners find podcasts an acceptable method of delivery
- Determine benefits of podcasting to students in relation to research proposal writing achievements
- Compare the performances and drop-out rates of students who used podcasts as a method of delivery to those who did not use podcasting during the postgraduate research proposal writing course.

I understand that the person leading this study will attempt to keep the interview focused on this topic and that I myself will act individually, not wanting to discuss issues outside these topic. I understand that my participation in this study is entirely voluntary and that if I wish to withdraw from the study or leave, I may do so at anytime, and that I do not need to give reasons or explanations for doing so. If I do withdraw from the study, I understand that this will have no effect on my relationship with the University of South Africa. I understand that because of this study there could be violation of privacy. To prevent violation of my privacy or others privacy, I have been asked to talk about any of my own private experiences that I would consider too personal to reveal.

I understand that the information I give will be kept confidential to the extent permitted by law, and that my name in this study will be kept confidential by the researcher and the university. I understand that the study involves an individual interview that last 2 hours or less, which will be

audio taped. I also understand that if the researcher decides to reuse the audiotapes for training purpose in the future will contact me prior to their use.

If there are any concerns or questions about the study, please contact Ms Maria Madiope or Dr Ranko-Ramaili at the Department of Graduate Studies, University of South Africa 012 429 6972 or 012 429 8988

I have read and understand this information and agree to take part in the study

Participants signature:

Date:

8. Have you listened to the podcasts? Yes No

If NO please give an explanation for why not

Didn't know about that, and don't know what it is about.

.....
.....
.....

If YES please describe your experience

.....
.....
.....

9. Do you have a mobile device that can enable you to access the podcasts remotely and at any time, e.g. ipad, blackberry or any phone with internet access or laptop and 3G?

Yes No

10. If No, in a situation where the podcasts are made stable and available, would you be willing to purchase a device to access them?

Yes No

11. Have you had any challenges in using the podcasts? Yes No

If YES what can be corrected to make the use of podcasts easy to use?

.....
.....
.....

12. Would you recommend a deployment of the podcasts as a means to disseminate material for the research proposal writing module or other in the ODL programme? Yes No

Give an explanation of your choice?

.....
.....
.....
.....
.....

13. Have you submitted your proposal yet? Yes No

14. Have you used the podcasts to compile the proposal you are writing or have submitted?

Yes No

15. Do you believe that the use of the podcasts comprehensively would improve on the performance in the research proposal writing course? Yes X No

16. Do you think that podcasts have a positive influence on the rate of drop-outs that may be attributed to hardship in research proposal writing module? Yes No

Please explain

.....
.....
.....

END!

THANK YOU FOR PARTICIPATING!

Please complete the questionnaire and give it to the bearer. For any clarification of RPM podcasting please email your enquiries to: madiom@Unisa.ac.za

APPENDIX D: INTERVIEW SCHEDULE FOR FEASIBILITY OF AUDIO PODCASTS IN MOBILE DEVICES IN UNISA

I. OPENING

A. ESTABLISHING RAPPORT

[Shake hands] My name is.....and I am a researcher interested in means of incorporating technology into education to make the learning experience more productive and favourable especially for Open and Distance learning (ODL) students such as you.

B. PURPOSE

I would like to ask you some questions about a project by this research that involved the use of podcasts in the Research proposal writing module. I will ask questions regarding yourself, your experience in writing the research proposal as well as question in regards to the use of podcasts in this project.

C. MOTIVATION

I hope to use information that will be obtained from this study to recommend whether the use of podcasts for this module is feasible. That is to say, if all goes well there may be a possibility of full implementation of the project in this module among others in the ODL program at UNISA and may be beyond.

D. TIMELINE

This interview will take about 20 minutes. Are you available to undertake this interview? It will be of very much help towards achieving aims of this research.

Transition into the main part of the interview.....

Filling in gender of the interviewee

Male Female

II. BODY

No.	QUESTION	ANSWER
1.	Please describe your experience on using the print-based ODL program	
2.	What can be done to improve your experience in research proposal writing	

3.	Describe your thoughts towards podcasts replacing the current means of disseminating information	
4.	What do you think of the podcasts currently developed for the research writing module	
5.	In your opinion, is making an investment of buying a mobile device to access the podcasts possible for a student?	

6.	Describe some of the challenges you encountered in using the research proposal writing podcasts	
7.	From the experience in the use of the mobile podcasts, describe some of the key observations and the recommendations you would give that will make the project successful in the event that it would be developed to a full-fledge project.	
8.	How would you compare preparing the research writing proposal with or without the use of the podcasts?	

9.	How do you think the podcasts would affect the performance of students in the research proposal writing and the rates of drop out from the course?	
----	--	--

Transition to the end of the interview session.....

It has been a pleasure and honour to interact with you and to find out your experiences in regards to this project. I have surely learned a lot that will go into improving this project and making the project a success as a whole. Briefly let me summarize what you have shared with me during this interview.

III. CLOSING

A. SUMMARY OF INFORMATION.....

B. RAPPOR

I am grateful for taking time off your schedule to engage in this interview. Kindly, is there any other information that you would like to give that you feel is relevant and will be of use in this project and research?

C. ACTIONS AFTER INTERVIEW

Well, I think I have gathered all the information that I need. I would request that you allow me to call in case there are any clarifications on this matter. Thank you very much for your time. I will share the results of the project with you when I am done.

APPENDIX E: INSTRUCTION ON HOW TO ACCESS YOUR MPEDU91 AUDIO PODCASTS ON IONO.FM

Dear Student,

Welcome to this initiative where additional audio material for the MPEDU91 course will be made available for access on Smartphones, tablets and PCs. The iono.fm platform has been developed to allow users to download hundreds of exiting audio programs over the internet. Because we support a wide variety of phones, tablets and PCs your audio programs are available right where they are and when you want it.

Various techniques are employed to make the files as small as possible. None the less, *please note that unless you have a free data connection there will be data costs associated with the data uses to download the episodes.*

The UNISA recordings are only available to class participants. Below are instructions on how to easily gain access to the podcasts and listen to them on your PC, phone or tablet. You are also most welcome to make use of the service to listen to any of our other content or to listen via your iPod, e-mail, RSS or some other mechanism as described on our website on this page:

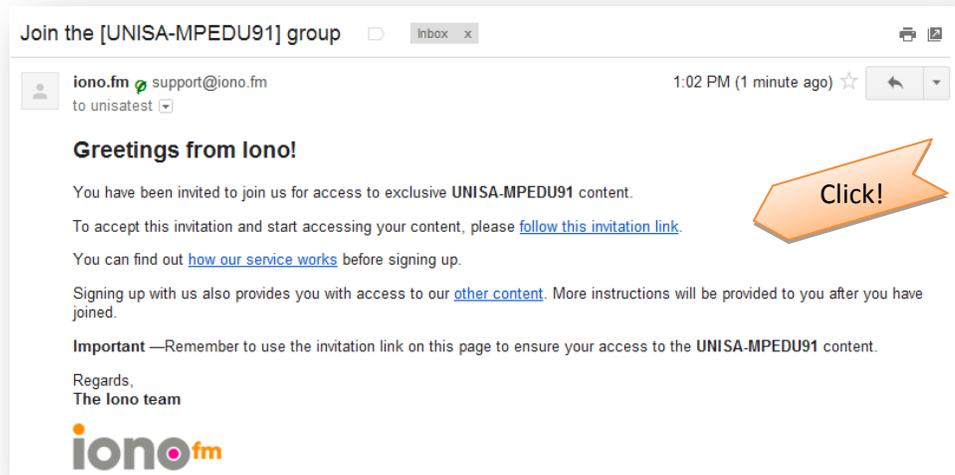
<http://iono.fm/home/players>

There is also more information available on our website at www.iono.fm.

Registration

The UNISA recordings are not available to the general public. You will receive an e-mail with a link inviting you to join this group.

Click on the 'follow the invitation link' url to register for access.



If you did not receive the e-mail you can enter the following link in your internet browser to register: <http://iono.fm/home/register/Unisa>.

This will open a registration page where you need to fill in the required details if you're a first time iono.fm user:

ionofm

Email: Password:
 Remember Me [Forgot yours?](#)

[Home](#) [Browse](#)

[For You](#) [For Business](#) [How It Works](#) [FAQ](#) [Contact](#) [Players](#)

Register account — UNISA-MPEDU91

This page allows you to register for access to the exclusive content provided by **UNISA-MPEDU91**.

Existing users, please log in via the "[Add to my account](#)" section below to enable access to this group for your account.

If this is your first time on our site, please use the section below to create a new account. After you have successfully created an account, we will provide you with helpful information on how to use this service.

New account

Please provide the following **required** details to create an account —

Name:

Surname:

Country: ▼

Email:

Confirm Email:

Password:

Confirm:

Member Nr:

Please note — you have to sign up using the email you were invited at or provide your UNISA-MPEDU91 membership number to join this group.

If have not yet registered with iono.fm please fill in the details indicated above. ***Please note:*** ***You either have to register using the e-mail address that your invitation has been sent to, or, if you want to use another e-mail (or did not receive an e-mail), enter you student number in the Membership Number field.***

If you're already an iono.fm user you can scroll down and log in with your iono.fm e-mail address, student number and password.

You will see a **Registration Complete** message once you've registered as indicated below.

Click on the UNISA Logo to get to the MPEDU91 podcasts.

iono fm unisatest@iono.fm | Logout 0 playlist items

Home Browse Playlist Account

For You For Business How It Works FAQ Contact Players

Registration Complete

Welcome Unisa Test

Thank you for registering with us! We really hope you enjoy using our service. If you experience any problems or have any queries, please don't hesitate to [email our support team](#). Of course you are also welcome to send suggestions on how we can make our solution work better for you!

The following links should help you get started quickly:

- Find out [how our service works](#).
- [Browse our catalog](#) to find something you like.
- See what content is in your [playlist](#).
- Listen to your content via one of our [player applications](#).
- View and change your [account details](#).

Joined group — UNISA-MPEDU91

Your account has been registered for access to exclusive **UNISA-MPEDU91** content. From now on, you will be able to see all content that belongs to this group while browsing our site.

For your convenience, you can subscribe to these channels immediately:



UNISA **Research Writing Module-MPEDU91**

Series, ±13 min each [+ Add to Playlist](#)

This podcast series augments the Unisa Course MPEDU91 (Research Proposal Writing.) Besides general orientation and background information it focusses on your literature study, theoretical framework, research methods and finally the qualities of a good proposal.

6 episodes

South Africa

[Play 12 min](#) #1 Introduction to Podcasts

You can remove yourself from this group on your [account page](#). **Note** — if you remove yourself from this group, you will have to be invited again to regain access!

(For your convenience, we have also sent you a confirmation email that contain this information)

Regards,
The Iono team

feedback

Listening on you SmartPhone, Tablet or PC on the iono.fm website

The [IONO.fm](http://iono.fm) website works on nearly all modern SmartPhones, Tablets and PCs.

Once you've opened the UNISA provider page you will see the MPEDU91 course channel as indicated below. Click on the Channel icon to open the channel page where the episodes are.

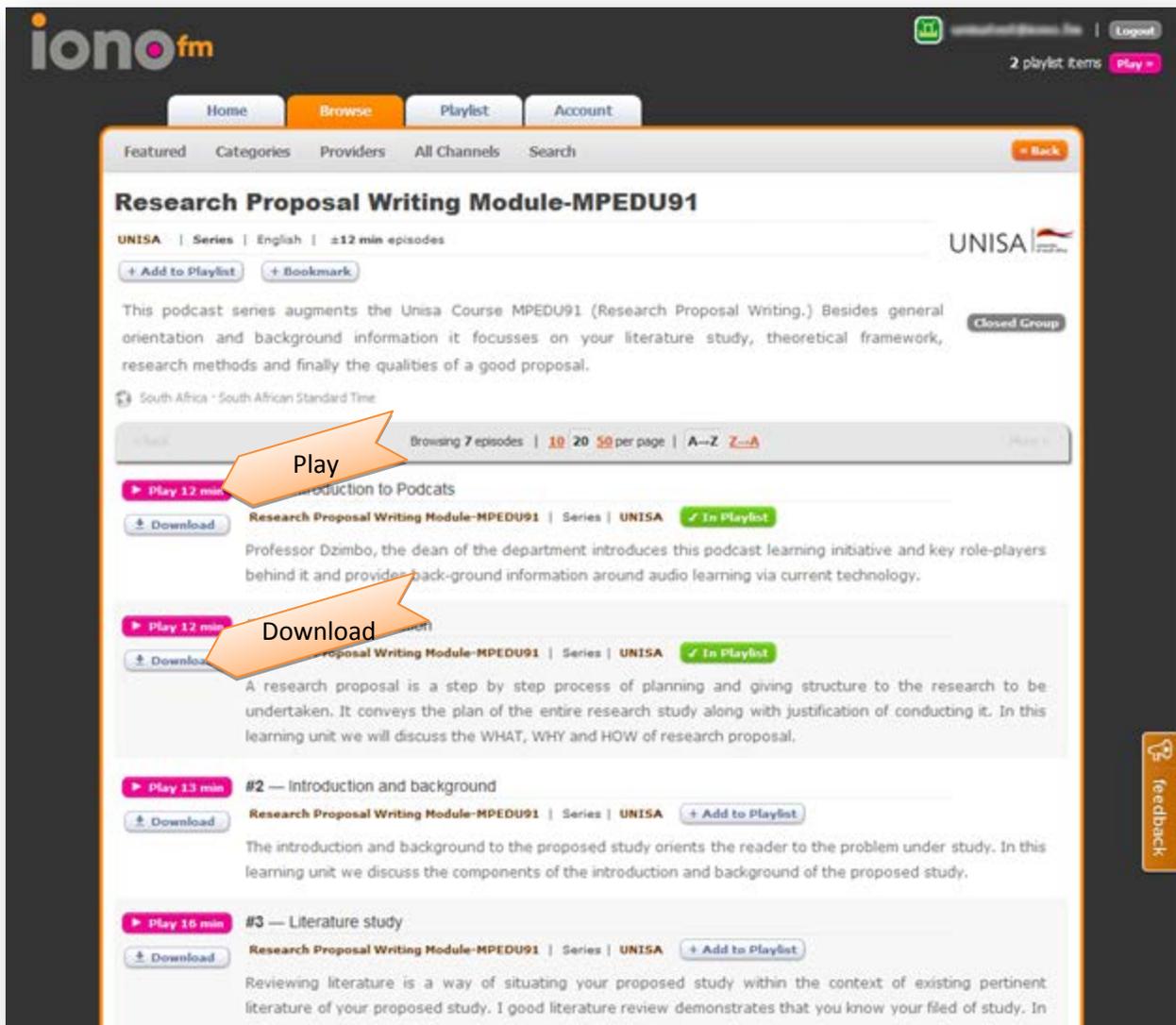


The screenshot shows the iono.fm website interface. At the top, there is a navigation bar with 'Home', 'Browse', 'Playlist', and 'Account' tabs. Below this is a sub-navigation bar with 'Featured', 'Categories', 'Providers', 'All Channels', and 'Search' options. The main content area is titled 'UNISA' and includes the URL 'http://www.unisa.ac.za' and a 'Closed Provider' status. A description of UNISA is provided. Below the description, there is a pagination bar showing 'Browsing 1 channels' and options for '10', '20', and '50' items per page. The main content area displays a list of podcast episodes for the 'Research Proposal Writing Module-MPEDU91' course. An orange arrow points to the 'Click!' button next to the channel icon. The episode list includes '7 episodes' and a 'Play 12 min' button for the '#0 Introduction to Podcasts' episode.

After opening the MPEDU91 course channel you will arrive on the channel page with all the episodes. (The direct link to the recordings is <http://iono.fm/channel/1319>. You may want to add a bookmark in your browser this so that it's easy to access it again.)

On the MPEDU91 content page you will be able to click on the play button to listen to the episodes as indicated below. This will open a player in a new window and start playing the episode.

You can also download the episodes while you are for example on a free Wi-Fi connection to listen to later. This will save the episode on your computer, Smartphone or tablet. Browsers normally have a function that allows you to see files that have been downloaded and to listen to them again, for example under 'Tools' select 'Downloads'.

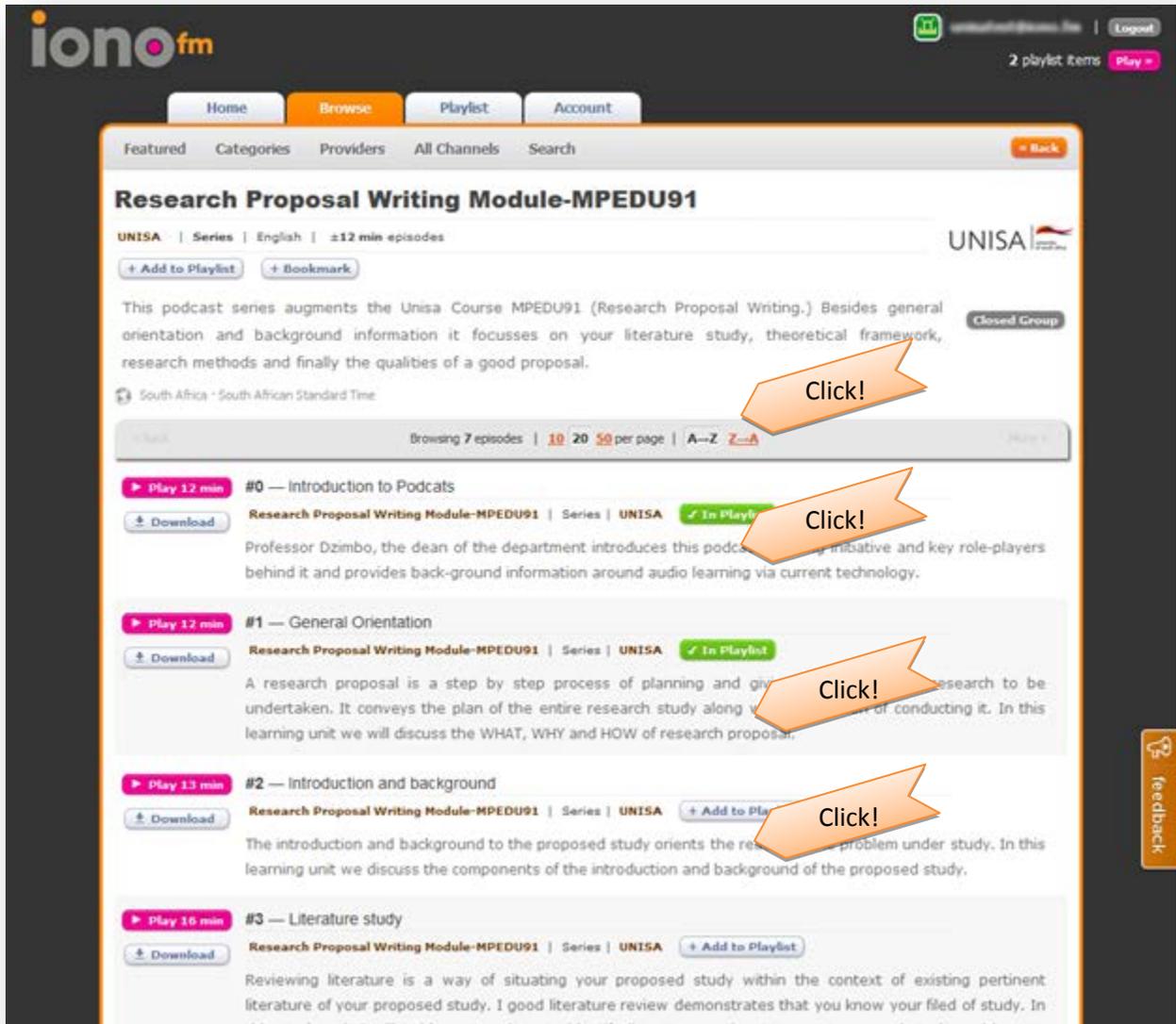


Listening on non-Smartphones and older handsets

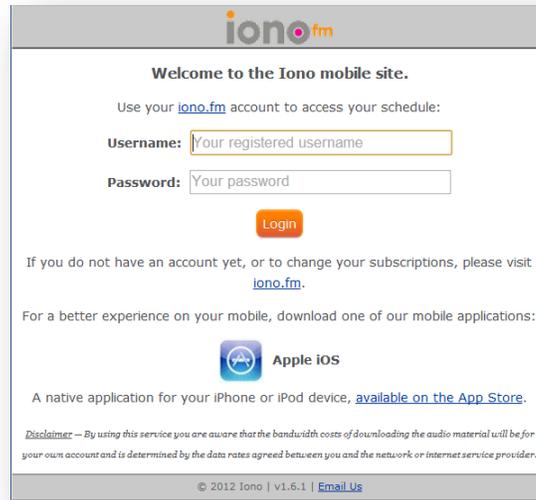
If your phone does work with the iOno.fm website as described above you can still listen on our lite mobile player. In order to do this you need to be able to open a web page on your phone and at least be able to play music from the internet.

An easy way to listen on an older handset is via our lite mobile player (<http://iono.mobi/>). You will first need to use a PC to add the episodes you want to listen to your playlist as described below.

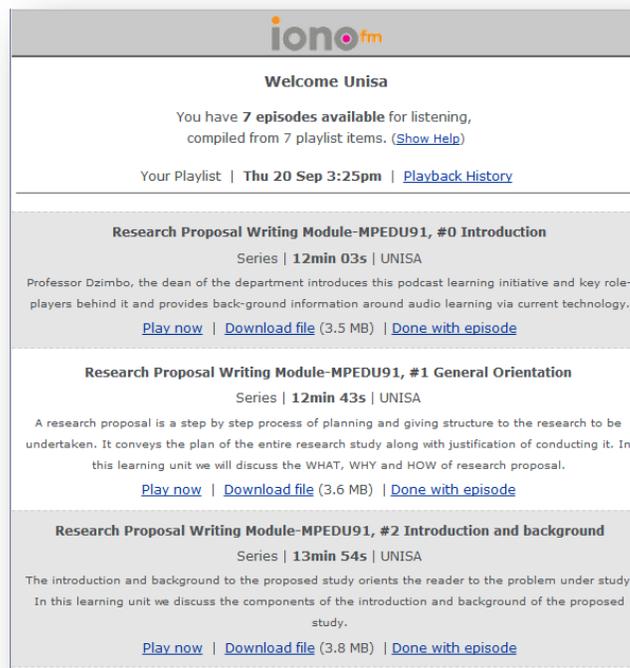
Once you've registered, use a PC browser and go to the MPED91 content page at <http://iono.fm/channel/1319>. Add all the episodes to your playlist as shown below.



With all the episodes in your playlist you can open the iono.mobi website on your mobile phone. The address to enter in your phone internet browser is <http://iono.mobi/>.



Log ion using your iono.fm e-mail address and password that you used to register with and you will see all your episodes and be able to download or play them:



Other Questions and Answers

1. After I've registered, how do I get back to the MPDEU91 channel page on iono.fm again?

Once you have registered for the MPEDU91 content as described above AND are logged into iono.fm you will be able to open the podcast page as shown below on your SmartPhone, Tablet or PC.

Open your internet browser and type the following address in: <http://iono.fm/channel/1319>.

You can also access it via the search function as shown below:

The screenshot shows the iono.fm website interface. At the top right, there is a 'Logout' button and a notification for '7 playlist items' with a 'Play' button. The main navigation bar includes 'Home', 'Browse', 'Playlist', and 'Account'. Below this, there are tabs for 'Providers', 'All Channels', and 'Search'. A search bar is present with the text 'Enter your search term -' and a 'Search' button. The search results show 'UNISA' with a '1 channels' indicator and a description: 'UNISA is Africa's leading distance learning... inspiring leaders of tomorrow.' There are also pagination controls and sorting options.

1. Log in with registered user

4. Type *Unisa* and click search

2. Click!

3. Click!

feedback

This will take you to the UNISA content provider page from where you can follow the instructions detailed in section 2 above.

2. *I'm on iono.fm but I cannot see the UNISA channel. When I try to go to <http://iono.fm/channel/1319> it tells me 'Not Allowed'*

This will happen you are not logged or did not register to access the content. Follow the instructions in *section 1*

3. *What about listening via an iPod, or e-mail or RSS?*

We support a number of mechanisms for listening to audio material. Read our <http://iono.fm/home/players> information page for instructions on how to use your iPod, e-mail, RSS or other mechanism to listen to your iono.fm content.

4. *Can I also listen to other audio content via iono.fm?*

Yes certainly! Feel free to browse around. All the content you see on the iono.fm site is available for free so listen as much as you want and feel free to share with other people as well. (Just remember that you may pay for the bandwidth you use to download it.)

If you want to know more about us you can read up on our website www.iono.fm, and these other pages:

- http://iono.fm/home/how_it_works,
- <http://iono.fm/home/FAQ> and <http://iono.fm/home/players>