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Exploring dimensions of changing pedagogies and challenges faced by students in applying new media technologies in learning

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Abstract

The need to stay abreast in knowledge economy has led to migration from Open Distance Learning to Open Distance e-Learning at UNISA. Central to this pedagogical change has been the fast advancement in the technological universe, with new media technologies being widely adopted across the globe for bridging the transactional distance between students and the OdeL institution. Using the unified theory of acceptance and use of technology as its theoretical lens, the study sought to find answers to the following question: What challenges do NMTS present to OdeL students as they learn using them? The aim is to explore the challenges that OdeL students experience when using new media technologies in learning. Data was collected using in-depth interviews with learners. During data analysis, thematic categorisation was used. The study divulged that the many of students from far-flung rural areas still have limited access to NMTs, which impact on their academic performance, and result in low retention and success rates. This finding suggests that for an ODL institution to achieve an increased probability to retain students and success rate, it must support them with access to NMTs. It further suggests that access to NMTs may help students do better in and to complete their studies. These findings unmasked that to bridge transactional distance, ODL institutions must support students, particularly those who are from rural areas by providing them with NMTs. The study limited its focus to UNISA's Durban hub.

Keywords: Digital migration, new media technologies, distance education, open and distance learning, retention, student access

Introduction

New media technologies (NMTs) are increasingly a key pillar to blended learning, particularly when it comes to quality and efficiency in bridging the transactional distance between learners and academics or between learners and non-academic personnel. Blended learning, a pedagogical approach that integrates online digital media with traditional classroom methods offers unprecedented opportunities for both students and academics for teaching and learning in open distance e-learning institutions, and in higher education in general. NMTs have proven to be pivotal to the hybrid learning approach by augmenting connectivity between individuals, within higher education institutions and between students. Much of this connectivity has amplified interactivity and reciprocity between learners and academics as well as between students and support staff. While there is a satisfactory volume of research on benefits derived from the use of new media technologies, and challenges faced by students while using them for learning purposes, the ones which investigated these phenomena using the unified theory of acceptance and use of technology in Open and Distance e-Learning has been scant. This study employed the unified theory of acceptance and the use of technology to investigate and to find answers to the following critical research question: *What challenges do NMTS present to OdeL students as they learn using them?* Using the university of South Africa as a case-study, the purpose of this study was to explore challenges faced by ODeL students in accessing new media technologies or by students who are using such technologies to learn. This paper also intends to unmask the challenges which OdeL students experience when using the new media technologies for learning.

The educational

The incessant evolving of ICTs and their key character of new innovations has not escaped the interface with the physical world where economic principles of scarcity still apply (Mbatha, Ocholla, & Le Roux, 2011; Mbatha, 2014; Stanciu, Mihai, & Aleca, 2012). The disparities in wealth and its distribution, also endemic in the education

sector continue to underpin issues of access. There has been a claim that despite its ODL pursuits, UNISA fails to support students who do not share contextual features of those living in urban areas and have easy access to a range of new media technologies (Mbatha, 2015). The variances in access appear to counter the Unisa policy of migrating to an ODeL platform as they threaten to exclude students from disadvantaged background from this migration.

The adoption of NMTs in institutions of higher learning in general and UNISA in particular brings with it a lot of potential to alleviate challenges in higher education. NMTs advantage of connectivity eliminates time, place, and situational barriers, whilst enabling high quality interactions between teachers and students (Kanuka, Brooks, & Saranchuck, 2009). According to Jeffrey (2014) NMTs are a key component of blended learning and they reinforce the practice of distance education that accentuates flexibility of time, place, and pace of student learning. In addition, NMTs helps administrators and academics to manage increased enrolment, provide better usage of facilities by reducing lecture schedules, respond to organizational objectives to increase ICT services, and improve student retention and outcomes, collapse the transactional distance (Nart 2010, Graham 2006, Mbatha 2014).

Over the years, substantial literature has noted that learners and academics experience of NMTs diverges a lot due to varying factors that include competency, access, inequalities amongst others (Usluel, Y. K., & Mazman, S. G. 2009; Stanciu, A., Mihai, F., & Aleca, O. 2012). The use of new media technologies has widely become omnipresent in open distance education. Their proliferation and worldwide usage in tertiary education market emanate from the multifarious advantages they offer in teaching and learning. According to Thomson Bridgstock and Willems (2014:67), improved technological infrastructure in universities expands access to education through a range of data-enabled mobile services and computers. Lin and Lee's (2005: 313) insight into the benefits of podcasts in teaching and learning reflects that they are important in information sharing between the students and their lecturers without time-based and geographical constraints. Irrespective of an array of benefits which NMTs offer to the global tertiary education sector, some parts of the countries around the globe still experience challenges regarding access to them. This problem has been popularized in the gamut of literature as the digital divide. As a case in point, many students studying in distance education institutions face challenges that relate to lack of technological resources, popularized as new media technologies (NMTs) such as a computer with the internet, smart phones, tablets, and iPads (Mbatha, Selekane & Ngwenya, 2014). These limiting factors contribute to poor academic performances of the students, decreased success, and retention rate (Mbatha 2010).

An investigation conducted by Minnaar (2011:499), revealed that the foremost student cohort which is unpleasantly affected by inaccessibility of new media technologies reside in remote rural areas where many households are characterized by poor financial, poor academic history and low technological infrastructure. Minnaar recommended that students must receive financial support to access technologies, and other forms of support to enhance their understanding of such technologies as well as how to use them.

Students' access to NMTs has become an inevitable research focus and this study partly addresses it within the borders of open distance education (ODL), limiting its scope to the South African distance education context. The paper aims to uncover benefits which student can derive through using new media technologies in learning and the variety of challenges they experience as they apply such technologies in their learning trajectories. This paper additionally aims to investigate the degree to which challenges students experience when using NMTs impact on students' performance levels, and ultimately the retention and success rate. The use of technologies has permeated distance education and subsequently redefined the way open distance learning environments implements teaching and learning. The student population involved in online learning has increased over the past decades, and such a form of academic engagement became popularly labelled as e-learning (Ventakesh 2005). According to Minnaar (2011, 483), e-learning encompasses accessing study materials, communicating with academics and other students, and interacting with learning content to get support during the study process.

This study is tailored to examine challenges of students' access to technologies used for teaching and learning and narrow its focus to the University of South Africa (UNISA)'s Durban region which are used by the mixture of students from both rural and urban areas. It is deeply ingrained from the present lack of studies focused into addressing the access component within the Durban region. Numerous students at UNISA do not use NMTs technologies, even though an emphasis to use them is promulgated across the entire student population.

These claims in literature indicate a need to illuminate how NMTs can support learning and what the perspectives of learners and academics in different environments are. Consequently, an underlying approach to this study is to probe how the adoption of NMTs has impacted on the learners and academics' teaching and learning experience at UNISA. It is therefore important to understand if learners are benefitting from the use of NMTs in their learning experience and to understand how they are benefitting and if not, why are they not taking advantage of their potential.

As outlined in the opening paragraph of this section, it appears, there is both a practice of inclination and disinclination by learners in the use of NMTs in their studies. Using the unified theory of acceptance and use of technology 2(UTAUT2), the study seeks to offer explanations to the students' acceptance or rejection of new media technologies (Venkatesh et al 2003). The UTAUT2 is derived from the UTAUT, a model that integrates eight prominent theoretical models in information technology research, namely, the social cognitive theory, theory of reasoned action, the innovation diffusion theory, the technology acceptance model, the theory of planned behavior, the model of PC utilization, the motivational model and the model combining the technology acceptance model with the theory of planned behavior, (Venkatesh et al 2003). All these models have in common the lens through which to examine usage intention. The ATUAT theory however rests on four key pillars, namely, performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al 2003). The theory proposes significant strides into the usefulness-intention relationship between students and their use of new-media. The UTAUT can be relevant for this study because it offers explanations to two key variables, user intentions and usage behavior. However, it is not therefore well-suited to the context of this study because it is not context specific hence the adoption of the ATAUT2 theory.

The ATAUT2 theory, as its starting premise, begins by recognizing three key additional pillars to the UTAUT by tailoring it to a specific context. Venkatesh et al 2014 identify these pillars as hedonic motivation, price value and habit. See the integrated ATAUT2 in figure 1 below. According to Nysveen et al. (2005) hedonic motivation emphasizes utility, for example the gratification and fulfilment in technology use. An extension of hedonic motivation is price value. Price value refers to the financial costs related to the use of a technological product a key factor in decision-making when it comes to adopting an innovation. The third additional pillar of the ATAUT2 is habit. This is a behavioral factor, and the argument is that concludes that habit has a direct effect on technology use, and it weakens or limits the strength of the relationship between behavioral intention and technology use (Mbatha & Naidoo 2014; Davis and Venkatesh 2004; Kim and Malhotra 2005; Kim et al. 2005; Limayem et al. 2007)

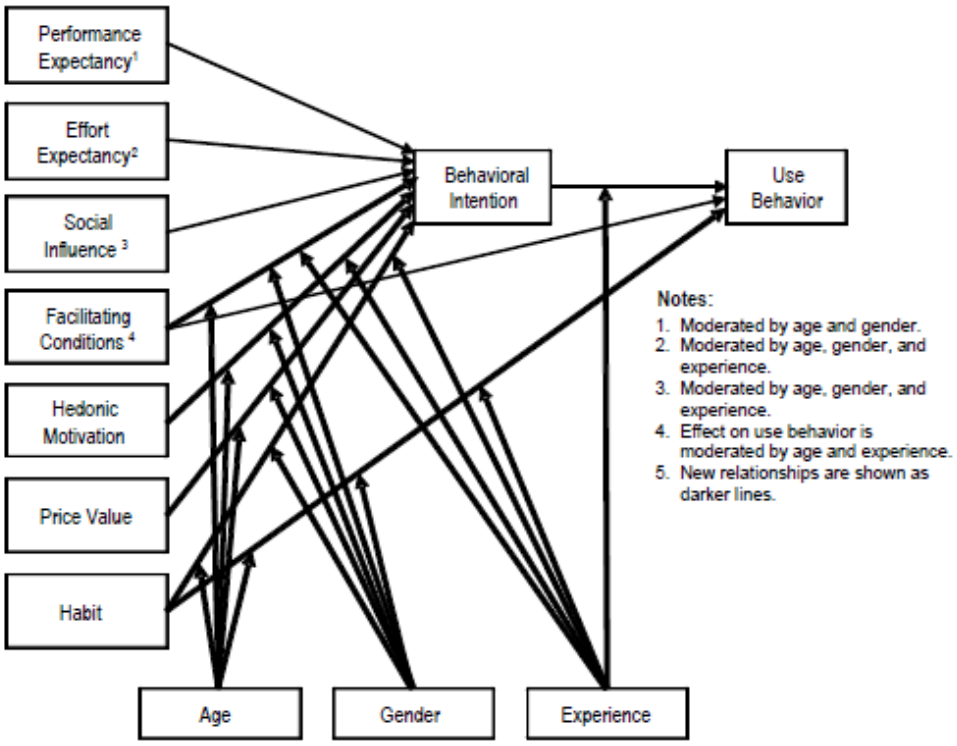

Figure 1: UTAUT2 Research model: Source, Venkatesh et al, 2012

Against this backdrop, it is important to focus on the other four pillars and their relevance to the study. A key basis for using the ATUT2 and its seven pillars is that it provides a basis for tracing contextual factors that influence attitudes, beliefs, motivations, and intentions for using new media technologies. First of the four pillars, the performance expectancy pillar suggests a few issues.

Application of the theory to the study

First of the four pillars, the performance expectancy theory refers to the degree to which an individual believes that using a particular system would improve his or her job performance (Balakrishnan 2014). In the UNISA case,

new media technologies are built on the idea of interactivity. It is therefore assumed that these media technologies can bridge the gap between students and lecturers or students and students by collapsing the distance. Interactivity stands for a more powerful sense of use engagement with media texts, a more independent relation to sources of knowledge, individualized media use a greater user choice (Lister et al 2005:20). Consequently, the interactivity tool is expected to enhance the UNISA student's learning experience. However, there are also some technical limits to the use of new media tools. This is addressed by the effort expectancy pillar.

Second, the effort expectancy refers to the degree of simplicity associated with the use of a particular system (Ventakesh et al, 2003). The adoption of a new tool is also determined by how simple it is to use, particularly for students who already have work overwhelm. For example, a particular tool may have many embedded links that may lead to different links in the process creating challenges for the deliverance of a coherent learning experience. So, there is a challenge of managing information overload. Such experiences, whether positive or negative, could create other ideological connotations that largely shape students' attitudes towards the use of new media technologies. The discussions and consequences of effort expectancy overlap and are contiguous with discussions of the third pillar, the attitudes towards using technology.

The attitude toward using technology refers to the degree to which an individual believes he or she should use a particular system (Ventakesh et al 2003). There are several works in literature which themselves explore the relationship between the users' attitude and the adoption of new media technologies (Mbatha 2009). One example is the hesitancy by both staff and students in adopting new media technologies due many other reasons that may range from work overload to organizational inertia. This resistance to new media technologies can be linked to the fourth pillar, social influence.

Third, social influence is about the degree to which an individual perceives that others believe he or she should use a particular system. The social influence pillar is closely intertwined with the facilitating conditions pillar, which is about the extent to which an individual believes that an organizational and technical infrastructure exists to support the use of a particular system (Kistan 2002). It is important to consider that the cultural reception of a new medium is always positioned in relation to existing media (Marvin 1998). The contrast with older forms therefore shapes the expectations by society for one to use a particular system.

If the new media is accepted due to its complementary and innovative nature to the previous forms, it can then be socially accepted. Another key factor that can enhance or is linked to its acceptance is the organizational and technical support by UNISA particularly through policy and training amongst other factors. The social influence and the fourth pillar, facilitating conditions provide a firm foundation to the explanations and insights into the heterogeneous structure of the beliefs and motivations underlying student user acceptance.

These pillars, epistemologically give us a window into, namely self-efficacy and anxiety are about the individual in their use of technology. Self-efficacy refers to the degree to which an individual judges his or her ability to use a particular system to accomplish a particular job or task and anxiety is about the extent to which one is anxious or emotional reactions associated with the use of a particular system. The literature reviewed in this paper was taken from journal articles and books related to the adoption of technology in education and ODL.

Method

This study used a qualitative approach. The study relied on in-depth interviews for its data collection. Informed consent was obtained from each participant in the study to ensure that each participant fully understood what he or she was doing and to verify the fact that he or she was willing to participate in the study. The respondents were assured of their rights, including the right of consent, protection from disclosure of information, and respect for their privacy. All the research respondents participated voluntarily, and none were forced to take part in the study. Regarding protection from harm, the researchers ensured that the respondents were not at any risk and would not be exposed to embarrassment, unusual stress, or any demeaning treatment. Anonymity and confidentiality were promised and maintained. The information that respondents provided was not made available to anyone who was not directly involved in the study and no information could be traced to any participant. In terms of professional standards, the researchers ensured that the results were collected in a professional manner without misrepresenting anyone and/or intentionally misleading the respondents about the nature of the study. Please ensure that your paragraphs are withing 6 -8/10 lines. A paragraph of 15 lines is too long.

The research applied for ethical clearance, and it was granted by the ethics committee of UNISA's College of Humanities. Requests for permission to collect data were then made to the regional directors, learning, and facilitating manager, lab assistants concerned as well as the libraries' managers in all the regions. Participants and respondents were informed of the purpose of the research and that the findings will result in no harm to them, university, and society at large. All students gave consents and took part in the study on a voluntary basis. Participants were requested to provide permission to record the interviews ahead of it and they all permitted the researchers to do so. Both the respondents and the participants were assured of anonymity and confidentiality. The researchers ensured that all the results were presented honestly without fabricating any data to support any finding. The results are presented below.

The research targeted UNISA's students, irrespective of which level they were at. Such students were using the Durban region to receive learning support services from the university. I targeted students who were registered in 2015. A regional director, the learning and facilitating manager and academics were also interviewed. I targeted a minimum of thirty-six students in the region. Both the convenient and purposive sampling methods were used. This choice originated from the belief that any UNISA registered student I find and who may consent to partake in the study may still provide us with key information I need. To supplement the interview data collection mode, a tablet was also used to record the interviews. The selection of this region was predisposed by the present little documented literature and stemmed from students' concern that they have no access to new media technologies to facilitate learning. Before I present the effects of the shift from traditional media to NMTs, it is important to acknowledge that students and academics have demonstrated the importance of new media technologies in their teaching and learning experience to students in Durban. However, favorable reference to traditional forms of teaching and learning has persisted among students and academics. The study limited its focus to UNIS and findings cannot be generalized since I only use UNISA as a case-study and focused on one of its regional hubs.

Findings and Discussions

Positive contribution of NMTs to pedagogy and the case of un-explored potential.

The purpose of this inquiry was to examine the perspectives and experiences of Unisa's Durban regional students on the impact of the adoption of NMTs in their teaching and learning experience. The study also examined the use of NMTs in enhancing the collapsing of the transactional distance in the learning experience. Inquiry as to what constituted our data was essential throughout the interviews as data gathering and analysis overlapped recurrently. As outlined in the methodology section, data analysis was guided by the principles of inductive and thematic analysis. Data was immediately collated after interviews. Observational notes and audio-recordings were reviewed, and two key emergent themes were noted. Thus, the two key primary themes that emerge together with three sub-themes under the second key theme, guide this discussion. These themes capture the perspectives, experiences, practices, and responses of the interview respondents. Below I present the two key themes each with three sub-themes that emerged in relation to the impact of adoption of NMTs.

The first theme of this study that emerges compels us to examine and appreciate how NMTs have not only changed but enhanced the student learning experience in various ways. I call this theme the collapsing of the transactional distance. The term is derived from the theory of transactional distance which states that out that distance education is not only a geographic separation of teachers and learners but a pedagogical concept where the special characteristic of distance leads to special patterns of behavior between learners and teachers (Moore,

1993). All the thirty-six students interviewed agree that NMTs have significantly contributed to their learning experience at Unisa. Their perspectives agree with literature that, the adoption of NMTs in institutions of higher learning brings with it a lot of potential to alleviate challenges in higher education as they bring the advantage of connectivity eliminates time, place, and situational barriers, whilst enabling high quality interactions between teachers and students (Kanuka, Brooks, & Saranchuck, 2009; Jeffrey, 2014; Mbatha, 2010). Three key sub-themes that influenced utilisation of NMTs were pointed out in 163 of the 190 narratives. The narratives were central in illustrating the acceptance of the NMTs as an upgrade to the students' learning experience. The first sub-theme was remote access.

Students' decision to adopt NMTs was influenced by the flexibility of remote access that the tools bring with them. This was cited as access to various things such as study guides. Lecture material, feedback, and access to fellow students. 9 of the 36 students articulated a strong orientation towards NMTs as they are in full time employment, consequently NMTs made it easy for them to flexibly juggle between work and school. For example, the students did not have to travel to campus for guidance or wait for feedback from the post which never came or arrived late. One respondent pointed out that:

"Ever since I started working, I spent 3 years on level 2 modules that I never completed. I was always on the verge of dropping out…. not because of my own fault…at times they told me my assignments arrived late….at other times I will not get any feedback until after exams. With everything done online everything is almost instant"

Throughout the interviews, in line with the other 8 working students, the respondent explained how NMTs are a key factor not only to her studies but to continue studying with UNISA. There was also a gendered dimension to the adoption of NMTs; "I do not have to travel to campus where I will be forced to stay the whole day and go home at night, risking my life and rape". Male students did not raise the issue of travelling at night or muggings as a key problem or as an advantage that NMTs mitigate against. Another working student said: "I am happy because I can easily keep in touch with my lecturers and if there is a problem, I go to chat groups like myUNISA and engage with my fellow students there". The student, here describes, an attachment and an important point raised by all the interview respondents. That is peer-to-peer pedagogy where students have group chats where they discuss their academic work. This is the second sub-theme, intra-student pedagogy.

One of the key disadvantages of distance learning cited by students has always been the lack of peer-to-peer classroom interactions. One of the most important influences on the adoption of NMTs is how they re-create a classroom environment albeit without the imposing of the teacher as a repository of knowledge. In this environment student may choose topics within their modules they find interesting or challenging. This student-centered approach is enhanced by the NMTs through their interactivity tools students are active participants in their own learning. An example is one student who says:

"I feel very comfortable chatting to fellow students on chat groups. I feel like I am not being judged because many students face similar problems as me and I realize I am not alone. It is different from when there is a lecturer, and you are scared you might be put on the spot."

There are clear patterns of leaner subjectivity as not only important to learning but as a strong influence on the adoption of NMTs. In this case, learning and participation in these chat groups is not only about gauging the level the student is at or contributing but also as a source of self-fulfillment and personal satisfaction. This appears to be very important in learner motivation as articulated above by the student. The adoption of NMTs is not only influenced by academic but administrative factors too.

Interest in the NMTs and administration was one of the sub-themes that emerged. Focus on the previous ODL structure where administrative backlogs in contrast to the emergence of NMTs gained momentum amongst students. Students noted that there was efficiency and no administrative backlogs as in the past where registration or even submission of essays encountered many bottle necks. This administrative efficiency, some of the students kept on referring to as 'the new era', led to more commitment in students' work as they felt that in the past the institution had ignored their grievances in that regard. One student commented that; it was particularly encouraging that all the registration could be done on the self-help computers which were easily available at the Durban hub and other training centers. The student stressed; *"I have always been put off by the registration process. In the past I had to reserve the whole week for registration and only to receive the message that my registration was incomplete. Today everything is just a click away and a click away. If one is unable to use the computer there are Thusong learning centers all over Durban that train computer literacy for free. Unisa now cares about the students."*

In this case NMTs seem to be key in enhancing the student learning experience through the compression of time. In the past this negative relationship between time pressure and learning appeared to have been ignored. Alternatively, once administrative backlogs were done away with student claim that a shift in approach in motivation because they have more time to engage with their academic work.

Problem of inequality in the adoption of NMTs

Given the evidence from the data the student outcomes were mixed, with all pointing out a positive contribution of NMTs in students' learning experience in this principle. However, in practice distinctions began to emanate as inequalities left on the one hand a minority of respondents with computers at home reporting a positive contribution in practice. On the other hand, a huge chuck especially those from the townships and rural areas accepted the NMTs value only when computers were accessed. There was the issue of inequality were resource and computer literacy were raised by 25 of the 36 respondents and in 114 narrative responses. The limited resources and computer literacy skills inhibited the students' motivation to adopt the NMTs hence missing out on the advantages that students with access had. Subsequently, students with limited resources felt left behind and preferred the old ODL traditional methods with their limitations. The theme of inequality in accessing NMTs had three inter-locking sub-themes under it. The three sub-themes are limited access, inadequate infrastructure, and poor skills.

Of concern, there was low motivation among students to use the online resources because of limited access. Even though the students appreciated the value of NMTs, a significant number of them pointed out that they only have access to computers once they are on campus. Internet cafes in their home areas had many other problems ranging from slow speed, expensive or outdated equipment and software amongst other things. To exacerbate the problem, when they came to campus the computers were not enough for the numbers. Consequently, the students did not enjoy the value brought by NMTs. According to students limited access was due to the University being quick to migrate to ODeL without giving attention to ICT infrastructure. Interestingly a few responses acknowledge this position. A student pointed out that,

"Why should we be happy that we have NMTs when some of us are left behind? It is like someone saying we must enjoy a well-baked cake when we are not going to be able to buy or taste it. It is unfair. We are used to this anyways. Unisa has always treated poor students like this."

There are perhaps more similarities between limited access and the question of University ICT infrastructure than the student's response might suggest. In both situations, access is determined by availability of resources, and the university must initiate mitigating conditions through ICT policy. One of the center administrators argued that students are hesitant to use the facilities as they only flood the center when assignments are due to the limited number of computers available. He also pointed out that the situation is worsened by the fact that students with limited skills also want to use the time for training and often the focus then is on submission of work, and they will be seen again when another assignment is due. Despite the administrator's argument the students maintained that the quality of trainers and university commitment to equality when it came to ICT was lacking. There was however evidence that the university was putting more effort into ICTs by establishing Thusong ICT learning centers of which the students acknowledged their existence. The students pointed out that if the University is migrating to ODeL it should make the internet and computers easily available otherwise only the rich students would benefit from the migration. In the end the NMTs the whole process of migration would end up being a burden that expands inequality and preventing students from effectively taking advantage of these tools that pose great potential in enhancing their learning experience. Another challenge that most students faced was poor computer skills. An administrator pointed out that:

"The typical Unisa student has changed from the adult who spends most of his or her time at work to a young student straight from Matric. This means the number of students frequenting the University Campus has more than tripled over the years, but space has remained the same and so has the equipment. It is difficult to service all students at the time they want because even our numbers are limited as ICT staff."

The problem of physical and contemporary demands such as growing student numbers, inadequate funding and resources, insufficient space and personnel is well supported by literature (Almaki 2011). These challenges show a correlation between inadequate resources such as training personnel with student lack of computer literacy especially in poor areas. Staff appears to be over-burdened by student numbers and end up offering crash courses instead of intensive courses. On the other hand, stands also need to show commitment and attend these courses not only when they need to submit assignments. Nevertheless, students appear to buttress and are views are indicators of their acceptance of this new learning and teaching environment, but the inequalities remain an obstacle. It is therefore for the University to consider issues of inequality as addressing them could be an antidote to students' access attitudes and problems.

Conclusion

This was a qualitative research method aimed at examining the impact of NMTs and the students' experience regarding new media technologies in the teaching and learning experience of students at UNISA. UNISA's KZN

Durban hub regional center was used as the educational context. The study outcomes were mixed, with all the students accepting the advantages brought about by NMTs such as the flexibility of remote access, intra-student pedagogy and alleviation of administrative backlogs. Nonetheless, most of the interview respondents pointed out that there is a gulf between potential and practice. The responses revealed that there is a significant relationship between the geographical setting and the accessibility of NMTs. Grounded on this result I deduce that remote rural students face inaccessibility challenge to NMTs used for teaching and learning and that those who are proximal to the regions are better off to access and use NMTs than the rural students. The findings showed that the greater proportion of UNISA's student population in the KZN Durban hub regional center regions have no access to many of the new media technologies used for pedagogical purposes. These findings suggest that there is a need to provide technological support interventions to the affected cohort. Moreover, data reveals that many students reside in remote rural areas and have no access to relevant NMTs which they can use to fulfil the learning involvement. Being isolated from the region undesirably impacts on the students' academic performance, skilling and results in low retention and success rate. Inherent into this concern, is an insinuation that some of the students from KZN region adversely experience a digital-divide problem that subsequently contribute to low access to, and usage of new media technologies used for teaching and learning in the end resulting in exclusion, non-participation, and alienation of students in financial margins.

I recommend that learning centers be built in pastoral far-flung areas and computers with internet networks be supplied to increase accessibility to NMTs and their adoption and usage should be maximized through students' reinforcement. Further to this necessity, intervention programs such as training initiatives are pivotal in transferring technological competencies and stimulate students' e-readiness. Inclusive research focused on all UNISA local eight regions and its other international centers is necessary for expanding the scope for understanding of digital-divide problem and challenges attributed to inaccessibility to NMTs used for teaching and learning. Further to this proposal, the e-readiness aspect demands an inquiry to establish if the resistant character to adopt technologies for teaching and learning exists among isolated rural students.

References

Lin, S., & Lee, V. (2009). Acceptance of Podcasting to Support Learning in Higher Education. Proceedings of the International Conference on e-Learning, 313-321.

Minnaar, A. (2011). Student support in e-learning coursesin higher education insights from ametasynthesis "A pedagogy of panicattacks". Africa Education
Review, 8(3), pp. 483-503.

Thomson, A., Bridgstock, R., & Willems, C. (2014). "Teachers flipping out" beyond the online lecture: maximizing the educational potential of video. Journal of Learning Design, 7(3), 67-79.

Jeffrey, L. M., Milne, J., Suddaby. G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. Journal of Information Technology Education: Research, 1(13), 121-140.

Stanciu, A., Mihai, F., & Aleca, O. (2012). Social networking as an alternative environment for education. Accounting and Management Information Systems, 11(1), 56–75.

Usluel, Y. K., & Mazman, S. G. (2009). Adoption of Web 2.0 tools in distance education. Procedia-Social and Behavioral Sciences, 1(1), 818 - 823.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, *46*(2), 186-204.

Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS quarterly*, 115-139.

Venkatesh, V., Davis, F. D., and Morris, M. G. 2007. Dead or Alive? The Development, Trajectory and Future of Technology Adoption Research. Journal of the AIS, 8(4), 268-286.

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. 2003. User Acceptance of Information Technology: Toward a Unified View. MIS Quarterly 27(3), 425-478.

Nysveen, H., Pedersen, P. E., and Thorbjornsen, H. 2005. Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons. Journal of the Academy of Marketing Science, 33(3), 330-346.

Limayem, M., Hirt, S. G., and Cheung, C. M. K. 2007. How Habit Limits the Predictive Power of Intentions: The Case of IS Continuance. MIS Quarterly 31(4), 705-737.

Kim, S. S., and Malhotra, N. K. 2005. A Longitudinal Model of Continued IS Use: An Integrative View of Four Mechanisms Underlying Post-Adoption Phenomena. Management Science, 51(5), 741-755.

Mbatha, B.T. & Naidoo, L. (2010). Problems hampering the collapse of distance in ODL, Progressio, 32(1), 170–184.

Mbatha, B.T., Naidoo, L., Ngwenya, B. (2010). Bridging the transactional gap in Open Distance Learning (ODL): The case of the University of South Africa. Inkanyiso. Journal Humanities and Social Sciences, 2(1), 64–69.

Mbatha, B. T., Ocholla, D. N., & Le Roux, J. (2011). Some implications of Information and Communication Technologies on public service work environments in South Africa. Information Development, 27(2), 47–62.

Mbatha, B.T. & Manana, K.P.P. (2012). Students' perceptions on the use of Facebook in an ODL landscape. Progressio, 34(1), 13-26.

Mbatha, B. T. (2013). Facebook: the power source of transforming the learning experience. International Journal for e-Learning Security, 3(1), 23-39.

Moore, M.G. (1993). Theory of transactional distance. In D. Keegan, (Ed.). Theoretical principles of distance education. New York: Routledge