Technology-enhanced ODL learning with computers: An andragogical online phenomenological study

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Abstract

This paper is framed within the context of the need to open up access to education for diverse students using one of the technology-enhanced open and distance learning (ODL) blended methods. It analyses how technological gadgets can be educationally exploited in order to reach out to students located anywhere in the global village. Unisa has also adapted its teaching and learning approaches by exploiting an array of available technology. It has, for example, emphasised greater use of Information and Communication Technology (ICT). The challenge was to determine how postgraduate students interacted with Unisa using the online facility, myUnisa. We argue that, while technology can assist to widen access to higher education, postgraduate technology-enhanced ODL teaching and learning can limit accessibility and learning with computers if convenience, cost-effectiveness, reliability and user-friendliness are not socioeconomically sustainable and guaranteed to be offered to students who reside in disadvantaged areas. Accordingly, wider access can only be achieved if technology-enhanced ODL teaching and learning blended methods are crafted in such a way that they take cognisance of adult learning theories as well as technology accessibility.

The study assumed a qualitative interpretive phenomenological research design. We drew upon phenomenologists such as Schutz (1970, 1972), Schutz and Luckmann (1974) as well as existentialists such as Merleau-Ponty (1962). We mainly used online
interactional Weblog (blogging) method to capture the views and experiences of postgraduate students about learning with computers, according to the frames of reference salient to the participants themselves. Embedded in this research was an understanding of the andragogical model as theorised by Malcolm Knowles in 1990, and specifically oriented towards the adult learner.

The snowball sampling technique was employed to identify participants. Four online interviews were conducted and data saturation occurred after the third with no new emerging data. Mamelodi was the only area included in the research.

Data analysis follows guidelines provided in the IPA literature (Smith & Eatough 2006; Smith & Osborn 2008). This approach is inductive in nature, allowing ideas and themes to emerge from participants’ personal accounts rather than imposing a predetermined theory, thus opening up the researcher to possibilities that had not been considered. Results and findings will be discussed.

Key words
Technology-enhanced ODL learning with computers, accessibility, andragogy, postgraduate student, sustainability, disadvantaged areas

Introduction
While many different terms have been used to describe what students need, such as digital literacy, technological literacy, and 21st century skills, education leaders, nationally and internationally, are beginning to embrace a new common definition for what it is that students need to know. Information and Communication Technology (ICT) Literacy reflects the need for students to develop learning skills that enable them to think critically, analyse information, communicate, collaborate and problem-solve. It also reflects the essential role that technology plays in realising these learning skills in today’s so-called knowledge-based society.
Students can learn ‘from’ computers — where technology is used essentially as a tutor and serves to increase students’ basic skills and knowledge — and they can learn ‘with’ computers — where technology is used as a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher-order thinking, creativity and research skills (Ringstaff & Kelley, 2002). A major concern of many educators with regard to educational technology is its potential to exclude those who may not have access to it, or who may not be able to use it. Regardless of what research may indicate concerning the positive effects of technology on student learning, technology will be of limited use if is not available to all students. Mobilising ICTs that make people learn better, achieve more and perform better, and acquire new knowledge, behaviours, skills and understandings, is the hallmark of any ODL institute given the challenges it might be facing.

The transitional nature of our global village and the way we do business is increasingly based on technologies and information.

- People’s knowledge and skills need continuous updating.
- This is challenging both our formal educational systems, and how we train and learn at work.
- There is increasing demand for new competences (Manson, 2010).

In response to some of these global phenomena such as the demands for knowledgeable and skilled personnel, Unisa is gradually rolling out ICTs that can enhance teaching and learning for all its students, current and prospective. Amidst all these global changes impacted upon by technological advancements, the biggest challenges henceforth are whether adult students are competently ready to utilise the gadgets to their best abilities to enhance their potential. We need to ask whether these technologies are readily available and accessible and/or whether they simply hinder their learning endeavours.
Theoretical framework

Phenomenology is a philosophy that takes intuitive experience of phenomena (what presents itself to us in conscious experience) as its starting point and endeavours to extract the essential features of experiences and the essence of what we experience. Schutz & Luckmann, 1974, 5 make startling revelations about the existential relationship between human beings and their environment:

‘the following is taken for granted without question: (a) the corporeal existence of other men; (b) that these bodies are endowed with consciousness similar to my own; (c) that the things in the outer world included in my environs and that of my fellow-men are the same for us and have fundamentally the same meaning; (d) that I can enter into interrelations and reciprocal actions with my fellow-men’ (Schutz & Luckmann, 1974, 5).

The assumptions reveal that:

‘that we, up to a certain degree, obtain knowledge of the lived experiences of our fellow-men—for example, the motives of their acts—so, too, we also assume that the same holds reciprocally for them with respect to us’ (Schutz & Luckmann, 1974, 4).

Schutz & Luckmann, (1974, 3-5) believed that of the everyday life-world, agents assume that they can easily communicate with each other. This assumption is not without limits, however: ‘When a man tries to slip into another person's shoes, he fails’ (Schutz & Luckmann, 1989, 102). To fully understand the other and his or her actions we would have to access his or her—inaccessible—consciousness. This limitation constitutes one of the many boundaries of one's life-world. The boundary separating the consciousness of ego and alter ego belongs to the 'medium transcendences’ (Schutz & Luckmann, 1989, 109-117) of the life-world.

Agents employ different strategies to get a glimpse of that which lies beyond the boundaries of the ‘medium transcendences’. Although this boundary can never be crossed, we can get a glimpse of the other's consciousness by using signs to
communicate with each other. Sign systems — language in particular — are capable of transgressing this and other boundaries of the everyday life-world. Signs refer to something that is not immediately given in the situation at hand and to something beyond the actual experience (Schutz & Luckmann, 1989, 131-147). They are capable of crossing the boundaries of time and space ('little transcendences'), alter ego ('medium transcendences') and even our everyday experience ('great transcendences': dreams, ecstasy, religious experiences etc.). This does not only apply to language but to all forms of human communication: body language, gestures, facial expressions, etc. (Soeffner, 1988, 521). Communication is thus conceived as a means for agents to deal with these transcendences of the life-world.

Human behaviour is understandable and interpretable by other human beings because of its semiotic dimension (Soeffner, 1999, 7). This semiotic characteristic is rooted in the human condition characterized by a lack of instincts (Gehlen, 1986) and ‘biological ambiguity’ (Gehlen, 1986; Plessner, 1965). From such an anthropological perspective we are thus bound to interpret human behaviour. In order to constrain the ambiguities inherent in our behaviour and our actions we rely on ‘metacommunicative hints’; Soeffner, 1999, 10) to signal to the other how to make sense of our behaviour. Nevertheless, human behaviour, actions, and signs point to a horizon of meanings beyond their actual meaning in the concrete interaction.

**Literature review**

Greg Neal of Victoria University in his paper prepared for presentation at the AARE Annual Conference in Parramatta in November/December 2005 centred around students’ reflections on the effectiveness of ICT as a learning resource used by ‘middle-year’ students. Looking at the literature the author lamented the lack of direct investigations into student opinions and little was known about how students think about their own learning (Fletcher, 2003), particularly in relation to technological innovation in learning environments (McLoughlin, 2000). In the same vein, there is a lack of literature that captures the views and experiences of adult students on the accessibility of ICTs as a learning tool.
Educators are aware of the impact technology has as ‘a tool for achieving instructional goals’ (Ringstaff & Kelley, 2002). While there is increased interest in the integration of technology in learning and teaching, very little remains known about how the use of ICTs is changing students’ approaches to learning (Rumble, 2000).

This means that a new challenge confronting education relates to meeting the needs of all students: personalised learning where learning is designed around students’ needs (Hargreaves, 2004). Hargreaves (2004) highlights the importance of ‘nine gateways’ to personalising learning ─ curriculum, workforce, organisation, student voice, mentoring, advice and guidance, new technologies (ICT), assessment for learning, and learning to learn, with each potentially ‘enhancing student motivation and commitment to learning’ (ibid, 7). It would be meaningless to say we are personalising learning unless we involve them (students) in the process (Hargreaves, 2004, 10). Practices that focus on designing curriculum experiences have been encouraged as central features of reform initiatives to improve the quality of learning in schools. The use of student voice benefits teachers and therefore possible changes to teaching practice and curriculum experiences.

What are the views and experiences of postgraduate adult students in working ‘with’ computers as an interactive learning tool?

**Adult learning**

The word ‘pedagogy’ refers specifically to children and assumptions for teaching children. Pedagogy is an archaic term that the ancient Greeks utilized to describe the education of children. Thus, pedagogy does not encompass the needs of adults common in management classrooms today. Underpinning andragogy are four assumptions regarding learning: a self-directing self-concept; use of experience; a readiness to learn; and a performance-centred orientation to learning (Forrest & Peterson, 2006, 113). Even with these dynamic changes, it is ironic that an article in the
inaugural issue of the *Academy of Management Learning and Education* prominently featured the concepts of pedagogy and pedagogical choices (Clair, MacLean & Greenberg, 2002). By adulthood people are self-directing. This is the concept that lies at the heart of andragogy. Andragogy is therefore adult student-centred, experience-based, problem-oriented, and collaborative: very much in the spirit of the humanist approach to learning and education. The whole educational activity turns on the student.

**Andragogy and self-directed learning**

Contemporary use of the term developed from the works of Malcolm Knowles. Though first introduced in 1968, it came into widespread use in the 1970s with Knowles’ publication, *The Modern Practice of Adult Education: Andragogy Versus Pedagogy*. The term ‘andragogy’ dates back to 19th century Europe.

Knowles had already begun building a comprehensive theory of adult learning that is anchored in the characteristics of adult learners. Beginning with concepts researched by Cross (Adult Learning Theory), Gagne (Conditions of Learning), Houle, Rogers (Experiential Learning), Tough, and others, he developed the andragogical model based on several assumptions that differed from the accepted pedagogical models. These include:

1. The need to know – Adults need to know why they need to learn something before undertaking to learn it.
2. The learner’s self-concept – Adults have a self-concept of being responsible for their own decisions, for their own lives. Once they have arrived at that self-concept they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction.
3. The role of the learner’s experience – Adults come into educational activity with both a greater volume and a different quality of experience from youths.
4. Readiness to learn – Adults become ready to learn those things they need to know and need to be able to do in order to cope effectively with their real-life situation.
5. Orientation to learning – In contrast to children’s and youths’ subject-centred orientation to learning (at least in schools), adults are life-centred (or task-centred or problem-centred) in their orientation to learning.

6. Motivation – While adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life and the like) (Knowles, 1990, 57-63).

Andragogy literally refers to the art and science of teaching adults. Darkenwald and Merriam (1982) posit that an adult is someone who has assumed the primary social role of worker, spouse, or parent and has left the principal social role of full-time student that children and adolescents hold. In simple terms, pedagogy is oriented to teaching children and being cognisant of their characteristics (ibid). By comparison, andragogy is dedicated to teaching humans who perform socially productive roles and have assumed primary responsibility for their own lives. Pedagogy focuses on issues relating to children, the andragogical mind-set puts primacy on the issues of application of knowledge to real life. While accepted by many educators, andragogy was refined based on criticism from other adult educators. Knowles had stated that an educator was either pedagogical or andragogical (Knowles, 1977). However, educators described situations where Knowles’ andragogy was used in pre-adult populations with effectiveness. For this reason, Knowles (1980) revised the relationship between the two terms in the 1980 edition of his book. In the new edition of The Modern Practice of Adult Education, he defined the relationship as a spectrum ranging from the subject-centred pedagogy to the learner-centred andragogy.
Table 1. Pedagogical-andragogical learning assumption

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<tr>
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<th>Pedagogy</th>
<th>Andragogy</th>
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<tr>
<td>Self-concept</td>
<td>Learners are dependent on external sources such as an instructor to assess and provide for their needs.</td>
<td>Learners are aware of themselves and their needs and bring this knowledge to the educational activity.</td>
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<tr>
<td>Learner’s experience</td>
<td>Learners bring little experience to the educational activity and thus experience is not used in the learning process.</td>
<td>Learners bring a wealth of usable experience and knowledge to the educational activity, thus experience is used in the learning process.</td>
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<tr>
<td>Readiness to learn</td>
<td>The need to know develops from external forces: often an instructor mandating the learning process that should take place.</td>
<td>The need to know develops from an internal need to better address roles and responsibilities the learner faces.</td>
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<tr>
<td>Learning orientation</td>
<td>Subject- or teacher-centred</td>
<td>Problem- or performance-centred</td>
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Adapted from: Knowles (1980)

**Andragogical assumptions about learners**

The andragogical model takes a different approach. Adults must know why something is important before they will learn it (Knowles, Elwood & Swanson, 1998). Based on this assumption, the first component of an andragogical class is that prior to instruction, students should be convinced of their need to learn.

With the second component, the learner’s self-concept, the andragogical model assumes that adult learners feel responsible for their own learning. Knowles et al. (1998, 65) explain further: Once they (adults) have arrived at the (independent) self-concept they develop a deep psychological need to be seen by others and treated by others as being capable of self-direction. They resent and resist situations in which they
feel others are imposing their will on them. The assumption is therefore that interactive programmes must be framed within students’ experiences in most cases.

Conversely, the andragogical model places a high value on student experience (ibid, 65-7). Students bring insight based on their prior life experience. Therefore, the third component of an andragogical class is that students’ experience is valued. The andragogical model assumes that learners become ready to learn when they experience a need to know something that connects to their life situations (ibid, 67). For that reason, the fourth component of an andragogical class is that instruction helps students cope with life situations.

Knowles et al. (1998, 67) contend in the andragogical model that learners are problem-centred. This means that learning must relate to a problem that students see in their lives. Therefore, the fifth component of an andragogical class is problem-centred instruction. Knowles et al. further posit that the andragogical model assumes that learners will respond to external motivators as well; however, the most powerful motivators are internal pressures like job satisfaction and quality of life (ibid, 68).

The andragogical model as depicted in figure 1 offers flexibility, broad applicability, the ability to take into account the perspective of the adult student, and cohesiveness with other learning theories. The model is flexible because it can be applied in whole or in part taking into account that some situations dictate how material must be taught. Lessons that deal with the protection of human life call for strict indoctrination (Knowles, 1998, 93). The andragogical model is also cohesive with other learning theories. The model aligns with Bloom’s taxonomy, constructivism, and transformation theory. Bloom’s taxonomy encourages higher levels of thinking which falls in line with treating students as if they’re capable of self-direction. Like the andragogical model, constructivism and transformation theory recognize the undeniable influence of an individual’s experience on his or her learning (Knowles.1998)
Figure 1. Andragogical assumption about learners

Source: Knowles et al., 1998, 62-8

The second component of an andragogical class is that students are treated as if they are capable of self-directed learning. There are two types of self-directed learning – when the individual is completely on his or her own and when the individual is aided by one or more helpers (Knowles et al., 1998, 135-9). The latter type is the one under review. The notion of self-directed learning is consistent with Bloom’s taxonomy of the cognitive domain. The six levels of cognitive ability are knowledge, comprehension, application, analysis, synthesis, and evaluation (Shields & Hassan, 2006, 17). As instruction moves from one level to the next, higher-order thinking is required (Bogan & Porter, 2005, 46; Boone, Boone & Gartin, 2005, 26). Encouraging self-directed learning also encourages students to move beyond knowledge and comprehension and on to
higher levels of thinking. Experience is a foundational concept for adult learning (Mezirow, 2006; Wilson & Hayes, 2002, 173). Lindeman (1926, 9) regards a student’s experience as ‘the resource of highest value in adult education’. He also calls it a student’s ‘living textbook’ (1926, 10). Life demands learning (Lindeman, 1926, 10; Rager, 2003, 278). People want to learn things that they need to know in order to cope with their lives. People’s lives dictate the information they need to know (Knowles et al., 1998, 144). Instruction should focus on the students and what problems they’re facing (Harris, 2000, 229).

Research design

The research design was a qualitative interpretive phenomenology study research approach. We used Web logs to collect data. The use of Web logs (‘blogs’) has become a popular platform to reach out to postgraduate students at Unisa as the institute tries to find new ways to integrate this popular technology into lecture facilities (Beeson, 2005; Quible, 2005; Ducate & Lomicka, 2005; Glogoff, 2003). By the end of 2004, 32 million Americans said they had read a blog, eight million Americans had created blogs, and almost half were created by people under the age of 30 (Raine, 2005).

Lenhart (2006) alludes that by 2006 these numbers had increased to 12 million American adults who keep a blog and 57 million American adults who say they read them. It can safely be concluded that students come to universities with a facility for maintaining and communicating through blogs. Like online threaded discussion groups, blogs are an easy way to engage in dialogue on the web outside university. The availability of several blog providers such as Google’s blogger.com, LiveJournal.com, and WordPress.com make it free and easy to set up, manage, and update blogs frequently and without additional support. By using blogs ‘students become familiar with blogging, a tool now used by an ever-increasing number of employers to support routine operating functions’ (Quible, 2005, 76).
Past research has summarized findings from case studies involving the use of blogs in a single course (Glogoff, 2003; Quible, 2005; Ducate & Lomicka, 2005). This study finds that by completing the required readings and then posting discussion questions and reflections on topics of interest to which their university peers can respond — essentially beginning the conversation prior to the class session — students become more engaged in the course material. This exercise requires students not only to read the required course materials but to engage with them critically in order to move beyond a superficial understanding of the materials. By using the same assignment and assessment tool, the authors found that blogs can be effective in enhancing class discussion in a range of disciplines and in integrating liberal learning into professional programmes.

Data analysis and interpretation

The data was analysed using interpretative phenomenological analysis IPA resulting in the development of themes within and across interviews. IPA allowed an examination of the participants’ perceptions while recognizing the researchers’ influence and interpretation. It was an idiographic approach involving detailed analysis of each case to produce a condensed interpretative account of a smaller number of participants, rather than a thinner account of a larger sample.

The data analysis technique was able to identify themes that were emerging from data. We analysed detailed responses from online blogging and Facebook facilities with two groups of older postgraduate adults (30 people in total) with different levels of expertise in the use of computers when engaged in social networking. Two categories were identified, namely Category A, adult students who have computers but were not connected, and Category B, adult students who had computers but were not connected and relied on cafés. Interviews were transcribed verbatim and analysed.
Discussion of results and findings

The following findings are to be seen from a contextual point of view. Participants consisted of 20 female and 10 male postgraduate students. Their ages ranged between 25 and 46. The majority had professional experience of 10 years and more, thus enhancing the validity of the findings.

There were two categories of adult students, one with computers at home but not connected, the other had computers but not connected and relied on internet cafés to connect. The major themes that emerged from the two categories were that students lamented the use of computers as being a major stumbling block in accessing learning materials from university sites because of cumbersome log-in processes. These require that students follow prescribed steps that are sequential in design until the task is successfully accomplished. Some students found themselves stuck at some of the compulsory steps in the process and gave up, particularly those in Category B who used internet cafés because this proved to be an expensive exercise.

Although some older adults have learned how to use computers to log on and surf the net, the majority experienced difficulties in following instructions on how to access myUnisa in order to communicate with the university. Accessing myUnisa presented some challenges for some older students. It will appear that adult students were frustrated by being introduced to the use of computers which was going to be an added expense on their part as they felt that the time they spent fiddling with the computer cost them a lot of money which they did not have.

It was clear that some adult students seemed to have negative attitudes towards the use of computers which may arise from not really understanding the technology and not seeing the need to use it in their everyday lives (Turner, Turner, & Van De Walle, 2007). Students felt that a lot of time was spent learning from the computers rather than learning with them.
Conclusions and recommendations

Figure 2. Barriers to Learning with computers

As indicated in figure 2, the aim of this paper was to provide insights into adult learning with computer. Not understanding how to use computers together with not seeing any benefits can form major barriers to learning so finding a way to overcome such barriers may help older adults become more willing to work with new technology. If negative attitudes to technology are a factor in the use of computers then consideration must be given to changing attitudes (Broady, 2008).

In implementing any strategy to improve the quality of learning there is arguably considerable benefit in studying the effect on adult students, and looking at the experience through their eyes. This paper has concentrated on two of Hargreaves’ (2004) gateways to personalising learning: student voice and the use of new technologies (ICT). We discovered that adult students experienced frustration in adapting to new technology particularly if it has nothing to do with what they want to learn. We also offer the suggestion that mentorship models need to be developed so that adult students can be persuaded to work with computers. Social networking for adult learners is a big challenge.
Learning new skills requires the use of both working memory, which can only handle a limited number of processes at a time, and long-term memory from which we recall previous experiences that have been stored (Kehoe et al., 2009; Mayer & Moreno, 2003). Difficulties can arise when older adults embark on learning computer skills, when it's a completely new concept due to cognitive processing slowing down as they age. Using a mentoring approach could alleviate some of the anxieties according to a study carried out (Shedletsky, 2006). Adult students can learn ‘from’ computers — where technology is used essentially as a tutor and serves to increase students’ basic skills and knowledge — and can learn ‘with’ computers — where technology is used as a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher-order thinking, creativity and research skills (Ringstaff & Kelley, 2002).

Institutions of higher learning such as Unisa can encourage the formation of peer to peer study groups where skilled adult students within the group can be identified to become mentors. Such groups can be located within areas where students reside. ICT is generally an expensive undertaking, hence it is clear that postgraduate students who come from disadvantaged environments need some form of assistance in order to effectively adapt to the new challenges. Computer hubs can be established in those areas where these students are located.
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