2. CONTEXT

In 1833 the German educator Alexander Kapp coined the term 'Andragogik' to describe parts of Plato’s education theory. In 2009 we use the term andragogy to mean the “art and science of teaching adults as distinct from pedagogy, which usually refers to the art and science of teaching children” (Green, 1998, P3). ADULTS LEARN DIFFERENTLY than young people. But more importantly, their reasons for learning are very different. Andragogy (Knowles, 1984, P66), the theory of adult learning, attempts to explain why adults learn differently than other types of learners. Prior to 2006 Dental Assistants in South Africa were not required to obtain formal qualifications, nor were they recognised as part of the professional dental health provider team. Although a formal one-year National Certificate – Dental Assisting was offered by four UoT’s, viz DUT, CUT, TUT and CPUT, only a small number of assistants (±100 per annum) sought training. Thus the bulk of the dental auxiliary workforce consisted of unqualified (but not unskilled) workers. Many dental practitioners chose to employ unqualified persons (and train them to their standards) and this resulted in a fragmented, poorly paid dental assistant workforce.

In 2006 the Health Professions Council of South Africa began the process of registering Dental Assistants as part of the Professional Board for Dental Therapy and Oral Hygiene, after the necessary legislation was enacted. It now became necessary for all dental assistants with more than five (5) years of experience but without a formal qualification to be registered as Supplementary Dental Assistants and those with less than five (5) years experience to register as Student Dental Assistants, with the proviso that they gain a full qualification within three (3) years post-registration. Those assistants who have a qualification from a DUT were registered as Dental Assistants. Bearing in mind that South Africa has approximately 2000 Dental Assistants that suddenly required training in the next three (3) years posed a new challenge to the four (4) UoT’s. The DUT serves as the sole registered and accredited provider for the Eastern Cape and KwaZulu-Natal, and in addition to the “normal” annual intake of sixty (60) students we were suddenly faced with an unplanned demand by the adult learners. The Dental Assisting Programme which consists of one lecturer and one specialist tutor was now expected to cater for these adult learners, without an increase in staff or facilities.

I have been teaching in a number of subjects in the one-year National Certificate - Dental Assisting Programme for a number of years. This study investigates the use of the online environment to deliver both qualification based (and non-qualification based Continuous Professional Development) education to adult learners who are widely geographically located throughout KwaZulu-Natal and the Eastern Cape. Learning theories were studied, and education theory and CPD education was an initiated intervention through an online classroom was based on these theories. Active learning was chosen as the methodology for the study. A strong emphasis is placed on using online assessment...
with immediate feedback to motivate learners. Future plans to develop and implement the online classroom are discussed. I decided to do the Pioneers Online course in 2008 as I realized the various advantages of this way of teaching, based on conversations that I had with a Pioneer graduate in me programme, Dr B.G Holmes-Newsome (now retired). Therefore to me, the use of online teaching is seen as the ideal vehicle to provide teaching and learning material to these adult learners.

3. CHALLENGES

The Dental Assisting Programme, like most other programmes at DUT, face a myriad of challenges and problems, including but not limited to reduced funding, rising student numbers, geographical dispersal, and increased competition for scarce resources such as physical space (lecture labs, “practicals” rooms etc). In addition various problems are experienced by the students throughout the year. Some of these problems can be solved by web-based learning, while others are beyond the control of the lecturer or the students themselves.

The use of Web-based teaching along with the normal face-to-face lectures will assist my teaching together with the learning and life experiences of the students. Today’s adult students are filled with the demands of an work, household tasks, family obligations, childcare responsibilities, the current economic recession, crippling poverty as well as numerous uniquely “South African” issues such as transport, crime and worker-exploitation issues brought on by the Apartheid system. A review of the literature shows that numerous studies have indicated that adult learners seek the convenience and flexibility of online teaching and learning courses in the pursuit of a university qualification. The traditional mode of teaching (talk and chalk), which normally works well with children, does not apply to the adult students, especially in the facilitation and use of online web-based learning. Knowles (1984, p38) predicted that teaching of adults in the 21st century would be delivered electronically. Therefore I, and DUT, needs to begin programmes to address these needs. Some of the challenges that I faced in setting up and utilising web-based on-line teaching to these adult students include:-

1. DIGITAL IMMIGRATION

Many of our adult students have little or no prior computer literacy. “Our students have changed radically," is the observation of Marc Prensky in his article Digital natives, digital immigrants. (Prensky, 2001). Today's students and young workers are part of a group that he calls "Digital Natives." Raised on TV, video games, e-mail, the Web and instant messaging (Mixit®, Skype® etc), Digital Natives have developed cognitive thinking patterns that differ from previous generations. As a result, the challenge facing educational designers is to recognize these cognitive differences and to develop learning offerings that are appropriate to their cognitive learning patterns.” Thus for my “normal” lot of students (Digital Natives) do not pose much of a problem in the e-classroom but the adult “digital immigrant” is relatively difficult to teach using e-learning as a teaching tool, due to their lack of computer skills. The famous saying that you cant teach an old dog new tricks does not hold true for my group of adult learners who, over a period of just four (4) Saturdays became fully au-fait with the use of the computer and WebCT.
2. MOTIVATION

The challenge facing lecturers using web-based on-line teaching tools is to identify teaching and learning strategies that are appropriate for Digital Immigrants, recognizing the different ways they process information and developing learning tools that maximize the potential of their unique cognitive approaches. Adults in the dental assisting field were forced to seek out learning opportunities, due to legislation and operational requirements. Often life-changes, such as marriage, divorce, a job change or loss, termination, retirement or a geographical change, serve as the motivation for the adult to seek new learning opportunities (Wang, 2006 p11).

Therefore these adult students do not offer the challenge of a lack of motivation, unlike the “normal” student who requires constant and continuous motivation. Adults usually want to learn something that they can use to better their position in the workplace, or make a change for the betterment of their lives (salary increases/job promotion). They are not always interested in knowledge for its own sake. Learning for these students is a means to an end, not an end in itself. Very often financial reward is a key motivating factor for them, and this is especially true for many of my adult learners who want to qualify in order to become “promotable” and therefore earn a higher salary.

These adults bring a wealth of information and experiences to the learning situation. They generally want to be treated as equals who are free to direct themselves in the education process (Zemke, 1984 as quoted by Wang, 2006). However a challenge that I do face is the students resistance to want to “unlearn” what they have learnt. In order for me to overcome this challenge I had to first appreciate the differences between the teaching method that I knew (pedagogy) and the teaching method that I had to learn (andragogy). Some of these differences are outlined below:-

<table>
<thead>
<tr>
<th>Differences between Andragogy and Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demands of learning</strong></td>
</tr>
<tr>
<td>Andragogy: Learner must balance life responsibilities with the demands of learning.</td>
</tr>
<tr>
<td><strong>Role of instructor</strong></td>
</tr>
<tr>
<td>Andragogy: Learners are autonomous and self directed. Teachers guide the learners to their own knowledge rather than supplying them with facts.</td>
</tr>
<tr>
<td><strong>Life experiences</strong></td>
</tr>
<tr>
<td>Andragogy: Learners have a tremendous amount of life experiences. They need to connect the learning to their knowledge base. They must recognize the value of the learning.</td>
</tr>
<tr>
<td><strong>Purpose for learning</strong></td>
</tr>
<tr>
<td>Andragogy: Learners are goal oriented and know for what purpose they are learning new information</td>
</tr>
<tr>
<td><strong>Permanence of learning</strong></td>
</tr>
<tr>
<td>Andragogy: Learning is self-initiated and tends to last a long time.</td>
</tr>
</tbody>
</table>

3. Resistance Ahead!

Attempts to try something "new" may cause resistance from various groups within the training or education system. "Calls for change of any kind are seen as impositions or disturbances to be quelled as soon as possible, as unreasonable attempts to change the rules in the middle of the game" (Hodas, 1993 as quoted by Wang, 2006). Starting small may be the best approach for managing this resistance to change, suggests Hodas. Therefore I decided to implement a pilot project with just three (3) adult learners and a single module. This provided me with the ability to undertake action research, and to evaluate, reshape, reflect on and gain the acceptance of web-based teaching as a valid andragogical tool in my teaching armamentum. Thus I overcame resistance to the use of web-based teaching in this method, as not too many students were involved, and minimal disruption of lecture time took place. I can, in all honesty, state that I suffered no resistance at a departmental level, what with the DUT Teaching, Learning and Assessment Policy (2009) promoting the use of e-learning.

4. THEORY

In order to understand the theory of the different learning types (visual, kinetic etc – refer to Pioneers Midmap (Sputnix)– unpublished) it is most essential that the lecturer understand what exactly is LEARNING.

![The Different Learning Styles](https://www.gutenberg.org/files/1853/1853-0.txt)

A common definition of learning is “a process that brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world views” (Illeris, 2000; Ormorod, 1995 as quoted by Wang, 2006). Learning as a process focuses on what happens when the actual learning takes place. Explanations of
what happens during this process of learning are called “learning theories.” A learning theory is an attempt to describe how people learn, which in turn will assist the lecturer to understand the difficult and inherently complex process of learning. Learning theories have two chief values according to Hill (2002). Hill describes these two chief values as one being to provide us with vocabulary and a conceptual framework for interpreting the examples of learning that we observe and the other is in suggesting where to look for solutions to practical problems. Whilst these theories do not give us solutions they do force us to constantly reflect, review, revise and recurriculate, something that is essential to good teaching and learning. This is in keeping with the theories and thoughts of great educationists such as Schön (Reflection in Action, Action in Reflection 1984).

A literature search revealed that there are three main categories under which learning theories fall. These are:-

- behaviourism
- constructivism
- cognitivism,

I will now discuss these theories, with special reference to how they influence the andragogy of dental assisting students.

**Behaviourism**

Behaviourism is a learning theory that has as its focus only the objectively observable aspects of learning, and this theory was most developed by B. F. Skinner (1978, p17), who stated that there are three assumptions about learning. The first assumption is that learning is manifested by a change in behaviour, the second assumption being that the environment shapes the learners behaviour, and the third assumption that Skinner makes in this theory is that the principles of contiguity (how close in time) and reinforcement are central to explaining the learning process. Therefore learning is the acquisition of new behaviour (knowledge) through conditioning (being trained and by active doing). This is of particular relevance to dental Assisting adult learners, who have to take utilise the new knowledge gained through web-based learning into practical application in the workplace (and at the same time undoing any prior “incorrect” knowledge already learnt.

Educational approaches such as applied behaviour analysis, curriculum based measurement, and direct instruction have emerged from this model.

**Constructivism**

Constructivism is a theory wherein learning is viewed as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge, skills and life-experiences. In the dental assisting programme I find that this theory holds more water than the other two learning theories discussed herein, due to the fact that most of these learners already possess, and are acquiring almost on a daily basis, vast amounts of new knowledge. In other words, “learning involves constructing one's own knowledge from one's own experiences.” Constructivist learning has been described by many educationists as being a very personal endeavour, where internalized
concepts, rules, and general principles may be applied in a practical real-world context. Constructivism has many variants, such as active learning, discovery learning, and knowledge building. The lecturer acts as an on-line facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems, challenging dental situations etc. In the Dental Assisting Continuous Medical Education Programme some aspects of constructivism can be found in self-directed learning (e.g. Dental journal reading), experiential learning (on-the-job training), situational cognition, and reflective practice (which is not really applicable to the Dental Assisting learner, but was forced upon them due to the need for the acquisition of CPD points and formal qualifications by the Heath Professions Council of South Africa (HPCSA). As a lecturer I assist students, with appropriate “scaffolds” (physical aids and supporting materials), and gradually decrease this assistance as, through continued practice, learners start the process by constructing their own knowledge base and understanding (Farmer, Buckmaster, and LeGrand 1992 as quoted by Wang 2006:p23). Therefore I am now attempting to move away from traditional classroom-based teaching towards web-based teaching, wherein the students will learn on their own (i.e. construct their own knowledge).

Cognitive Learning Theory

Cognitive theories look beyond behaviour to explain brain-based learning. There are two (2) key assumptions that underpin this cognitive learning theory approach. The first is that the memory system is an active organized processor of information and the second being that prior knowledge plays an important role in learning. Cognitive theories look beyond behaviour to explain brain-based learning. These theories of learning are very useful as they guided me, the lecturer, in learning and understanding how my students learn, social role acquisition, intelligence, learning and memory as related to age. All these aspects are vital in the andragogy of the Dental Assisting adult student.

5. METHODOLOGY

I found that the simple putting of classroom teaching on computer screens did not make adequate use of the interactive and diversified features of online learning. Online education requires teaching strategies that are different to traditional classroom teaching. In addition to the widely accepted teaching strategies such as constructivist approaches (Brooks & Brooks, 1993 as quoted by Wang 2005), the andragogical approach to online teaching is believed to be highly effective among adult learners (Wang, 2005:p69). This andragogical approach is derived directly from principles of andragogy, which put adult students experience and interests above everything else. This is of particular interest and relevance to the Dental Assisting programme, as many of these adult Dental Assistant students bring with them a wealth of experience and knowledge. As there are always new and exciting changes and advances being made in dentistry action-research was chosen as the route to develop the online classroom, in the desire and hope of keeping in touch with these changes. Such a classroom is not static and will have to be changed, improve and developed on a continuous basis. I utilised the action research cycle, which is diagrammatically represented below, in order to ensure an effective and efficient student-friendly on-line classroom. Action research follows a cyclic process of: Plan-Act-Observe-Critically Reflect.

My action research cycle is the following:
As one would be able to observe from the cycle above ACTION RESEARCH is a continuous and never ending reflective process that requires the implementation of different strategies, teaching methods and revised content in my online classroom. No two groups of students are ever the same, and part of my action research is to review my current cohort of students, and to structure my classroom to their specific needs. Whilst I do realise that the online classroom is intended to act as an adjunct to the face-to-face teaching and lecture sessions I have utilised the online classroom as a tool that will enable learners to work at their own pace, in their own time (especially after hours and during weekends) and become self-directed, motivated learners. Therefore I constantly elicit the opinions and views of students in order to reflect upon and utilise their feedback in an attempt to improve/alter my online classroom.
6. DESIGN

It is vitally important and andragogically sound to bear in mind that in a group of students there are those with widely varying learning styles. These diverse learning styles should all be accommodated for in the online classroom and in the design of the content of the classroom. The online designer has to therefore make a detailed study of the different learning styles (refer to the unpublished mindmap of my group, the Sputnix)) and ensure that specific interventions and ways to present information are put into situ in order to accommodate all the different learning styles. I will demonstrate my attempting to accommodate all these students learning styles by reviewing a part of my online classroom.

My online classroom at this stage contains the following tools, activities and resources:

- The homepage where I introduce myself to the students by including a portrait photograph of myself and a brief comment of my educational background. I feel that this will allow my students to be able to “see” me and recognise me as a person, and not just somebody in the background.

- A contents page that includes a detailed learner guide, learning outcomes, study notes, a few PowerPoint® shows for one section with links to online multimedia demonstrations (e.g. a video of CPR being performed).

- A calendar feature which contains a pop-up reminder function that I used to alert students of upcoming events and to make announcements.

- A communication tool that includes an e-mail facility and a discussion tool. I have assisted those students who do not have an e-mail address to set up one, from either hotmail, gmail or yahoo facility.

- An assessment (submission) tool including assignments, presentations, quizzes/surveys, a link to on-line testing, self tests and the provision of a facility for students to review their grades. Immediate feedback is provided with corrective comments being made on every incorrect option. Students are instantly able to see their shortfalls instantaneously and to timeously correct them.

- In the media section I refer to text books and have included both the titles and covers of the books (see below).

![Textbooks](image)

This allows my students to not only read the title but also to be able to recognise the book be seeing it (thus catering for visual learners).

It is my feverant desire that the design of my online classroom encompasses all the desired and required criteria to ensure effective teaching and learning.
6.1 VISION

The DUT Teaching and Learning Strategy (2009) takes as its point of departure the DUT’s strategic plan (2008 – 2012), especially those aspects of it which focus on Teaching, Learning and Assessment. The strategy also takes into account the relatively unique nature of the DUT as a University of Technology which seeks to produce graduates with practical and useful knowledge and skills (extract from the DUT Teaching and Learning Strategy - 2009). For me this is the quintessential role of my online classroom. My online classroom has to be proactive to the needs of the students requirements, and industry requirements. We require our students to “graduate with practical and useful knowledge and skills’ and I sincerely believe that through the added intervention of an online classroom we can actually ensure that our graduates are competent and employable. I intend to continue with, and expand the implementation of online learning to all four (4) subjects in the Dental Assisting course, for the use of both the “normal” student as well as the adult learner.

6.2 ACTIVE LEARNING

If you give a man a fish, he will have a single meal.

If you teach him to fish, he will eat all his life.

Kuan Tza

Greenhalgh (2001:42) states that it is becoming "a truth universally acknowledged" that the education of medical and dental students will be enhanced through the use of computer assisted learning. Greenhalgh (2001:42) also states that educationists are excited about the potential of so called third generation distance education technologies. The differences in learning culture between computer based and traditional learning should not be underestimated, especially for the novice, and as Reingold (as quoted by Greenhalgh (2001:44) argues, "Fear is an important element in every novice computer user's first attempts to use a new machine or new software: fear of destroying data, fear of hurting the machine, fear of seeming stupid in comparison to others, or even to the machine itself to provide a "rich environment for active learning" in which the learner actively builds rather than passively consumes knowledge. This is especially true for the adult dental assisting students, who already have a wealth of knowledge, and who require a stimulus in order to enhance and build upon their already acquired knowledge. The adult students initial fear of computers (with the adult students being digital immigrants) was easily and rapidly overcome. Active learning techniques have been documented as far back as 490 BC when Socrates used problems, scenarios and questions to guide students to analyze and think about their environments (Coltrane,1993, quoted by Greenhalgh 2004, p49). These techniques have been found to help students acquire knowledge, develop critical thinking skills, solve problems in a variety of situations such as dental emergencies and to think independently. As an online facilitator for adult online dental assisting students I foresee the need for active learning to occur in order to ensure effective application of theory into a practical reality. I
also equate active learning with experiential work integrated learning (WIL), this being the basis of
the constructivist theory. This learning works most effectively when it is embedded in a context in
which new knowledge and skills will be used, i.e. the dental clinic. Research on thinking and
learning reinforces the idea that people learn through interaction with others (Johnson and Thomas
1994, quoted by Wang 2006). The workplace has a number of strengths as a learning environment
(Billett 1996, p256) and these include authentic, goal-directed activities; access to guidance - both
close assistance from experts and "distant" observing and listening to other workers and the physical
environment and also everyday engagement in problem solving.

6.3 WORKING SMART

DON’T THROW THE BATH OUT WITH THE BATHWATER
BLEND THE PAST KNOWLEDGE WITH FUTURE LEARNING

Robyn Bell 2002

In these modern times it will be almost criminal not to enhance technology (including web-based
classrooms) to make teaching and learning easier and more productive. “Work wise, not hard” is a
motto to adapt, and I [and to use webct to do just that. The use of this LMS greatly reduces time
spent marking, tracking students, record-keeping and the murder of innocent trees. Imagine, no more
heavy books to lug home, no arguing with a student who claims that I left my assignment with the
secretary before the due date or "the dog chewed up my assignment.” Online classrooms will help
solve many of my problems, such as time (lack of), voluminous amounts of paperwork, save me
hours by saving time in that the time to mark assessments is reduced (my Grades tool). For the adult
distance learner this will address the problem of travel and getting “time of from work” to attend
lectures.

6.4 BLENDED LEARNING

Jackson (2006, p4) quotes Valiathan, (2002) as saying that the term “blended learning” is used to
describe a solution that combines several different delivery methods, such as collaboration software,
web-based courses, and EPSS and knowledge management practices. Valiathan also adds that
blended learning is also used to describe learning that mixes various activity based activities,
including face-to-face classrooms, live e – learning and self-paced instruction

Blended Learning is a combination of the following:-

- Teacher Directed learning
- Self- Directed learning
- Directed Learning
- Independent Learning
- Student Self Directed
Blended Learning  
Life Long Learning  
Simulated work situations  
Real Work Life learning  (Sputnix, 2009)

Bash (2003, p67) writes that the transfer of learning from school to work settings is a chronic concern of vocational education, and that constructivism, a learning theory, suggests a way to restructure the learning environment that will make the transfer of that learning more effective. Adults engage in a lot of learning (other than professional development) and much of this ‘extra-curricular’ learning influences their thinking and their work practices. The DUT slogan “Making Knowledge Useful” is highly applicable in this case.

Bash (2003, P72) identified two more characteristics based on his observations. One characteristic is that adult learners are more likely to express their sense of urgency than their younger fellow students. The other characteristic is that adult learners tend to have higher motivation levels than their younger fellow students and are more likely not to drop-out.

7. IMPLEMENTATION

Numerous studies show that the andragogical model is conducive to adult learning in cyberspace. Pedagogy can be detrimental to adult learners as it does not adequately take into consideration their prior experience, interests and readiness to learn. The use of Web-based teaching along with the normal face-to-face sessions will assist my teaching as well as, almost certainly, the learning experience of the adult dental assisting students. Research confirms that the "focus in teaching and learning should be on the individual's active construction of knowledge" (Stevenson 1994, p29). The essential role of vocational education is "to facilitate construction of knowledge through experiential, contextual, and social methods in real-world environments" (Lynch 1997, as quoted by Stevenson, p27). Because the focus is on the learner, vocational education should be conceptualized as a learning process rather than a teaching process (Stevenson 1994, p45), and this is a philosophy that I subscribe to. I firmly believe that as an online facilitator I need to allow adult students to develop their own knowledge and understanding, by acting as a coach who provides guidance that gradually decreases as learners become more proficient, and not the “sage on stage” that I require to be with my “normal” students. This I have done through the implementation of an online classroom.

7.1 PILOT ACTIVITY

My pilot project entailed setting up an online classroom for the subject “Medical and Dental Emergencies”. I chose to test my classroom on three (3) adult students, and based on past performances I chose one (1) student that performed exceptionally well, one (1) student who displayed average performance levels and the final student was one who was academically struggling. I did this to ensure that my online classroom catered for all students (Bloom’s Taxonomy).
The major advantage of using online classrooms, as I discovered in conversations with my guinea pigs, is that there is personalised learning—each learner can progress at his or her preferred pace. They can repeat, interrupt, and resume at will, which may have particular advantages for weaker students who can review material on numerous occasions, and at times that are suitable to them (e.g. at 04H00, when the baby is still asleep!!). I intend rolling out online teaching to all students and across all subjects within the next year.

### 7.2 RELEVANCE

Adult learners may not be willing to learn anything new if their lecturers fail to demonstrate a relationship between course contents and “real life” for the students (Bash, 2003, p65). In other words, adult learners want their lecturers to address relevancy to learning. Wang (2006, p2), states that to help adults learn, lecturers are expected to be learning facilitators, resource persons, and process managers, and based on this difference between teaching children and helping adults learn, online teaching becomes effective if it features syllabus-based projects, learning activities, and teaching tools that are designed to create collaborative learning environments and relevant experiences for students. I ensure that all assessments are relevant and applicable to the South African situation. The recommended textbook, for example, list the national emergency contact number as being 911. I ask my students to research the different emergency services available in their immediate situations and to obtain information on their response times, capabilities as well as contact details. Projects such as this ensure relevance to the work situation.

Wang (2006, p6), further states that the lecturer must first gain a student's attention in order for the student to listen and learn. This can be accomplished by first posing questions to the student and/or incorporating a range of methods and media to meet student's varying needs. After gaining their attention, the instructor would then need to retain the student's attention. The relevance factor involves relating the information to the student's previous experiences. This allows the student to make a connection and thus their attention is retained and enhanced.

### 7.3 FEEDBACK

To be fit to guide the development of the whole human being, without deforming or improvising him, it is necessary that the teacher be experientially aware of all the learner's underlying anthropological potentialities which seek the opportunity to blossom forth. This is precisely the role of the educator, to make them blossom forth, to lead them out from within

= ex ducere-(Jousse 2004)

I engaged in conversations with my three (3) guinea pigs in order to elicit their feedback on the online classroom. All three (3) indicated positive responses with comments such as, “this is fun, it is exciting” to “I like the fact that I can answer questions, get them wrong and not be laughed at by others.” When I asked all three (3) students if they would recommend the online classroom to the rest of the class I received a resounding and unanimous “yes.” However all was not hunky-dory with a common complaint that they could not obtain an immediate response to their queries, nor could that quickly and rapidly seek clarity on items that required clarification or further explanation. I strongly would like to spread out the project to a larger audience and then review the feedback from a larger, more representative target audience in the near future. I also questioned my students about their backgrounds (family, work etc in an attempt to understand the dynamics that they face as students, so as to take these into account when designing and facilitating my classroom.
8. REFLECTION

A review of the Teaching and Learning Strategy at the DUT - 2010-2014 indicates the following objectives:

OBJECTIVE 2
Within the limitations of their academic programmes, lecturers should go out of their way to assist first-entry students to adjust to the demands and culture of tertiary education.

OBJECTIVE 3
Lectures are encouraged to apply a diversity of teaching strategies in the delivery of academic programmes or modules. (Including the use of e-learning.)

Upon reflection, I can clearly see the advantages (and disadvantages) of implementing web-based teaching and I fully intend to utilise, as an adjunct to face-to-face teaching, web-based teaching. I do recognise the shortfalls of web-based teaching but I also recognise the value that it could potentially add to students knowledge and to an improvement in the retention of these adult first year students, who if not adequately coached, have a high potential to drop-out. Thus web-based learning is not just a teaching tool, but it can also be used as a student retention tool.

8.1 ASSUMPTIONS and 8.2 FUTURE ADJUSTMENTS

Greenhalgh (2001:43) argues that access to the wide range of online options must surely make learning more exciting, effective, and likely to be retained. This assumption is potentially but by no means inevitably correct. The question that I have asked myself is “Does the delivery of information via web-based learning to passive students transfer to useful skills on the job?” and “Does learning become more exciting, effective, and likely to be retained?”

In order to answer these questions it may be it may be helpful to rethink some of our own assumptions about learners. Berryman , 1991 as quoted by Wang (2006, p6) holds that we often assume incorrectly that:

- People easily transfer learning from one situation to another if they have learned the fundamental skills and concepts.
- Learners are "receivers" of knowledge in verbal forms from books, experts and teachers.
- Learning is entirely behaviourist, involving the strengthening of bonds between stimuli and correct responses.
- Learners are blank slates ready to be written on and filled with knowledge.
- Skills and knowledge are best acquired independent of realistic contexts for use.
Upon reflection I realised that I am guilty of all of the above assumptions. I dissected these assumptions amongst my pilot students and found that they are all only partially correct but largely incorrect when utilising web-based teaching in the andragogy of adult learners. Based upon these assumptions (both actual and perceived) I plan to adjust/tailor my online class to dispel these assumptions. I also noted that my adult learners were not as “computer-illiterate” as I expected them to be. In fact research by Bell and Crosbie (2002), as illustrated below, proves that the different expectations of lecturers and students have changed significantly over the last few years.

### Summary about the Learning Needs of Adult Learners
**Robyn Bell and Cheryl Crosbie 2002**

<table>
<thead>
<tr>
<th>Adult Learners in the Past Before 2002</th>
<th>Adult Learners Now 2002</th>
<th>Adult Learners in the Future 2002 and Beyond</th>
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</thead>
<tbody>
<tr>
<td>Preferred Style Of Learning</td>
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<tr>
<td>Experiential Learners</td>
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<td>Visual Learners</td>
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<td>Auditory Learners</td>
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<td>Teacher Directed/ Involved/ Instructed/ Demonstrated Learners</td>
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<td>Problem Solvers</td>
<td>Problem Solvers</td>
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<tr>
<td>Analysers</td>
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<td>Analysers</td>
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<td></td>
<td></td>
<td>Action/ Dynamic/ Fast moving</td>
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<tr>
<td></td>
<td></td>
<td>interesting visual stimulation</td>
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<td></td>
<td></td>
<td>Reactive/ Interactive</td>
</tr>
<tr>
<td>Skills bring to learning</td>
<td>Skills bring to learning</td>
<td>Skills bring to learning</td>
</tr>
<tr>
<td>Previous, knowledge and skills</td>
<td>Previous, knowledge and skills</td>
<td>Previous, knowledge and skills</td>
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<td></td>
<td>Computer Competent</td>
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<td>Computer Confident</td>
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<td></td>
<td></td>
<td>Computer Literate</td>
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<tr>
<td>Expectations of Teachers</td>
<td>Expectations of Teachers</td>
<td>Expectations of Teachers</td>
</tr>
<tr>
<td>Ability to challenge the students thought processes</td>
<td>Ability to challenge the students thought processes</td>
<td>Ability to challenge the students thought processes</td>
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<tr>
<td>Facilitator of students learning</td>
<td>Facilitator of students learning</td>
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<td>Competent and Confident</td>
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<td></td>
<td></td>
<td>Computer Knowledge and skills</td>
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<td></td>
<td></td>
<td>Able to communicate with students online</td>
</tr>
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</table>
8.3 IMPACT and 8.4 LESSONS LEARNT

Whilst it is still too early to really assess the impact that the use of webct has had on my teaching and learning I can safely say that, based on my pilot project, I foresee that web-based learning and teaching will have a positive spinoff for my students because it is multi-media rich, easy to use and interactive. The advantage to the student and the institution would be highly trained, successful, competent students who will qualify and allow the University to receive its funding.

Although my learners have access to a dedicated computer lab the following factors could be limiting in the successful implementation and use of my online classroom.

- the availability of internet access to my students, due to DUT’s constant bandwidth problems and the high cost of internet in South Africa, and
- learners may also have varying levels of computer literacy
- the age of my learners (who range in age from 30 years to 53 years)
- Time, that most precious resource
- My (and my students) inability to touch type

I therefore have learnt to recognise, and to take into account the limitations placed upon the successful implementation and use of online teaching. This course has made me more aware of my andragogical and pedagogical skills and capabilities. My personal skills have been developed tremendously during the past year, not only technical skills, but also pedagogical skills and andragogical skills.

The writing of this paper has expanded my critical thinking. All this personal growth will be reflected onto the students. This is in keeping with my belief that learning is dynamic, everlasting and life-long. For me Pioneers 2008-2009 has been time well spent and I would like to extend my heartfelt thanks to Mari (for creating a safe space), Preggy (for bearing with my constant questions and “But how do you do this?”), Gita and my Pioneer classmates as well as to my “Guinea Pigs” for all their help, guidance and unbelievable patience, I would also like to thank my colleagues Ms YP Nair and Mrs F Kader for rescheduling their lectures so as to allow me to attend the e-Learning sessions.

Thank You and God Bless!
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