Chapter 13

Techniques for Self-Determined Learning in a Heterogenous 'Classroom'

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For education to create and develop a self-determined learner, it is imperative to utilise the best approaches to teaching and learning and to ensure that students are empowered by giving them the opportunity to make choices, manage and control of their own learning. This chapter provides techniques to self-determined learning or heutagogy in a heterogeneous classroom. A heterogeneous classroom is composed of diverse learners with varying abilities, different learning styles, language and race, among others. This holistic approach to teaching and learning requires educators to allow students to take the reins of their learning and to relinquish dominance by facilitating learning instead of centering teaching around themselves. To prepare learners for future careers, the 21st century learner would require new, complex and wide range of cognitive and metacognitive skills (Blaschke 2014, p.1) which includes curiosity, innovation, problem solving, decision making and self-control.

Introduction

The University of South Africa (UNISA) has been a distance learning institution since its early beginnings in 1916, providing higher education to thousands of adults who were not able to pursue higher education face-to-face. The models of learning informing the institution's provision have been very diverse over the last one hundred years. The university has become the largest provider of teaching degrees in the country with the demise of teacher training colleges. *Being a Professional Teacher* is a compulsory module for all students enrolled to become teachers at UNISA. It is offered by the College of Education (CoE) at UNISA. The CoE offers all teacher education programmes and produces more than 50% of teachers in the South Africa. For many first year students, enrolling at the university having come from face-to-face learning institutions, e-learning is often novel and challenging. The purpose of using an e-learning approach for first year students is to enable learning, allowing students to access information electronically, empower teachers and students through the use of digital technology (Abbad, Morris, & de Nahlik, 2009; Bates, 2005; Keller & Cernerud, 2002; LaRose, Gregg & Eastin, 1998).

Generally, technology has provided more people access to education. E-learning provides access for all students, particularly for distance learning students, irrespective of their location and enhances opportunities for learning in many impoverished and under-resourced rural areas. Increased access to information and education, as a whole, means the role of teachers and lecturers must also change (Vandeyar, 2014). Using technology, creates a world of new discoveries and exploration (Setlhako, 2018) and as facilitators of learning, lecturers need to encourage, support and engage students so that they participate actively in the learning process. This is a major way of ensuring that lecturers as facilitators of learning provide relevant knowledge and skills related to societal and educational needs, especially in times of rapidly changing technology and

economic uncertainty. Technology enables people to have easy access to information to keep functioning, in times of economic uncertainties, through internet connection using online platforms. Hase (2016) asserts that it becomes easier for people to fulfil their abilities as self-determined learners. It also gives people innovative incentives to be creative and find new ways to improve their lives.

However, the so-called 'digital divide', an unequal access to information, communication technologies (ICT) and, therefore internet access, is a factor to consider given the demography of most of the UNISA students. The student population is very heterogeneous with respect to culture, race, religion, learning styles and linguistic backgrounds; family structures; socio-economic status; and ability levels (Kronberg, York-Barr, Arnold, Gombos, Truex, Vallejo & Stevenson, 1997). The aim of obtaining a teaching qualification in this program is to develop teachers, whatever their background, who have mastered the 'four Cs', namely critical thinking, creativity, communication, and collaboration (Blair, 2012), appropriate employability skills and competencies required for the 21st century and the changing world of work as well. They will have developed cognitively and exhibit critical thinking skills and become experts in their content and pedagogical knowledge (Blaschke and Hase, 2015; Brown, 2015; Salehi, 2018).

What we can add to content and pedagogical knowledge now is technological knowledge (Kurt, 2018). Students need to integrate these three types of knowledge, technological, pedagogical and content (TPACK) into their learning (Kurt, 2018; Mishra & Koehler, 2006).

The South African Higher Education Act (1997) states that one of the purposes of higher education is to provide South African society with high-level competencies and expertise necessary for the growth and prosperity of a modern economy. The South African White Paper on e-Education (DoE, 2004) states that South African students should be

able to use Information and Communications Technology (ICT) so as to fully participate, confidently and creatively, in a global society. This technological knowledge and skills needs to be embedded in modern education. As all institutions of learning are mandated to embrace e-learning, it is required of them to develop new and relevant approaches to teaching and learning.

Learning

There is a growing awareness in educational circles that students have a role to play in the teaching and learning process, given the opportunity (Daly, 2008; Freire, 1972; Hill, 2015). However, in the South African context because of cultural factors, there remains a strong perception that the best ways in which people learn occur from respecting seniors, considering their experiences and involving them in the planning of activities, or providing a conducive environment, but ignoring their unique style of learning (Richards, 2002). In Africa in traditional societies, patriarchy remains a strong element of culture. The system encourages a resistance to questioning, critical thinking and going against the tide.

Lave and Wenger's (1991) 'situated learning' and 'community of practice' seem at present to speak most directly to the needs of 21st century learning. This type of approach to learning makes it possible to include ideas about social and global responsibility so that students understand their social and civic responsibility (Hurtado, Ruiz, and Whang, 2012) from a young age. In addition, as countries are gradually becoming interconnected and the global markets improving through technological advancement (United Nation, 2019), new occupations that require different skills and competencies are founded. Such innovations call for education to change and the way they in which knowledge is delivered will need to change. Thus, the imperative for today's teaching and learning is to identify the new skills sets that will equip tomorrow's students with skills that will

enable them to deal with the challenges of the Fourth Industrial Revolution.

Heutagogy challenges the traditional way of teaching and learning. Researchers such as Alraqas (2020), Hase & Kenyon (2007) support the view that learning has become more self-directed and self-determined. In this learning approach, for example, students are required to critically interrogate their own thoughts, learning and reflecting on what is learned and how it is learned. Heutagogy (SDL) as a major shift towards learner-centred learning could assist South African educational institutions to move away from a passive teacher centred approach to a more active, learner centred approach. This means there is a growing acceptance that students should play a greater role in the teaching and learning process, given the opportunity (Daly, 2008; Freire, 1972; Hill, 2015).

One of the pillars of heutagogy is the autonomy that students have to develop and acquire. As that happens, educators have to relinquish their total control of learning, shifting to a learner centred approach, if they are to thrive in a heterogeneous classroom. This is a huge change, where students need a new framework of learning and teachers a new teaching framework that empowers students to take responsibility for their own learning. An old mind set in the South African context, related to cultural factors, suggests that the best way students learn occurs from respecting seniors, considering their experiences and involving them in the planning of activities, or providing a conducive environment, but ignoring their unique style of learning (Richards, 2002). In this case, critical thinking and autonomy could create a barrier to the successful implementation of a heutagogical approach.

Figure 2
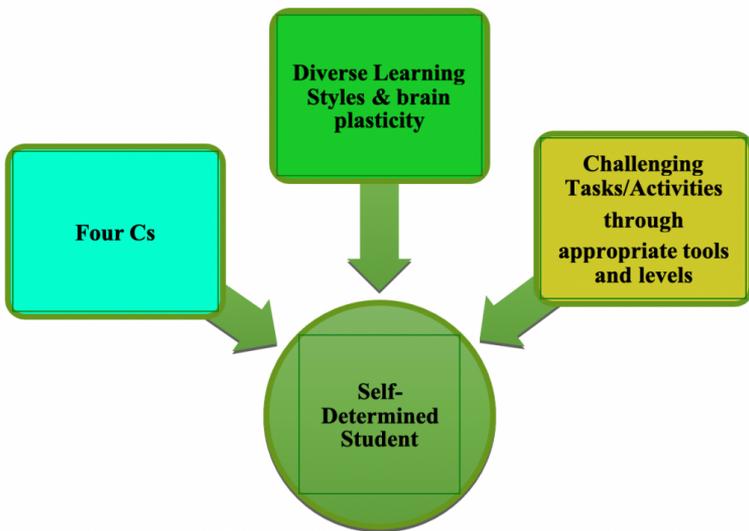
Self-determined student

Figure 2 shows how the student is guided towards self-determined learning through the provision of instruction at appropriate levels (after Bloom) mediated through appropriate technological tools (Cennamo, Baum, Newbill & Finn, 2012; McNierney, 2004). The instruction takes into account the diverse styles of learning of each learner, their heterogeneity on so many levels, and with the development of critical thinking skills, the learner becomes autonomous. Not only does self-determined learning require motivation to carry out tasks, it is also about how people learn, and their capability to unlearn existing methods.

Self-determined learning also challenges the curriculum and explores new ways of teaching and learning. It, therefore, requires engagement and social interactivity between, students and students, students and teachers as well. Vygotsky (1978) argues that optimal learning takes place when taught from a social interactive paradigm in which students are encouraged to share, exchange, negotiate and make

meaning to help construct new knowledge. We need to design education systems that are based on the "optimism of the students, not the pessimism of the educators" and heutagogy, as a learning process that is learner-centric would help us to do that.

User-centred instructional design for effective teaching and learning

The learning partnership in which the students and the lecturers are placed in an e-learning context requires a knowledge of user-centred design theory and practice to effectively deliver the content of the course (Newby, Stepich, Lehman & Russell, 2000). Each page design, for instance, should reflect such principles as chunking, use of sidebars, and multiple headings; readability levels should be between 8 and 10 (Campbell, 2004). Goals need to be clearly articulated, as does the value of the learning for the students in pursuit of their own ambitions for success (West, 2010).

The problem of having a diversity of students should compel the design to be 'participatory' (Schuler & Namioka, 1993). By designing different learning activities and tasks that accommodate many diverse styles of learning, students are helped to recognise and determine for themselves the best way in which they learn. The designer of the programme should take into consideration a number of matters which are important for a heterogeneous student body, such as English language fluency, study habits, communication habits, time available for finishing assignments, gender, mobility and accessibility (Campbell, 2004). UNISA used to separate the design elements of the course from the content. It falls increasingly on the lecturers now to design online courses. The need for teachers to be proficient in instructional design has become more and more important. A needs assessment of the students when preparing or revising the programme goes a long way towards effective teaching and learning and assists students to take ownership of their own learning when

their needs are met.

Bloom's taxonomy is a foundation tool for instructional design (Shabatura, 2013). Using Shabatura's *Bloom's Taxonomy Verb Chart* to choose suitable verbs to match learning outcomes at the different levels of understanding from lowest to highest, is another technique in effective instructional design. Campbell's (2004) provides extensive and valuable advice as well as excellent sources for further techniques to consider in instructional design for e-learning. The design of activities in e-learning should be structured in such a way that students are given the opportunity to work on their own in groups, pairs or independently. It is about time that educators relinquish their classroom dominance and shift the focus of learning from the teacher back to the learner and learning (Blaschke & Hase, 2016), and take into consideration the unique learning styles and human intelligence of each learner, if we are to produce a true self-determined learner.

In response to market demand for creative and competent employees who can respond to new and complex work environments, there has been renewed interest in heutagogy. When combined with today's technology, heutagogy offers a holistic framework for teaching and learning that supports development of self-determined, autonomous students and provides a basis for creating holistic, learner-centred education environments (Blaschke and Hase, 2016).

Delivery of e-learning

The plethora of digital devices, both stationary and mobile, which enable access to e-learning should not seem daunting as they are tools which can be used to good effect with good planning. Carrington's (2016) Pedagogical Wheel is an elementary illustration of how to match the levels of Bloom's cognitive taxonomy to the desired learning outcomes and the technological mode or tool which would be most suitable to use, so that theory, practice and application are linked (Carrington (2016). The wheel can be found at:

This is a valuable aid to lecturers and the internet has videos and many supportive materials free for use. Managing the outcomes of one's e-learning programmes with help from internet support should assist lecturers who are not au fait with technology (McNierney, 2004). That expertise developed and passed on to pupils gives impetus to both parties as students.

Teaching as a profession cannot be seen in isolation from technological advancements. More than just technological literacy needs to be taken into account, a greater focus on the integration of technology into lecturers' instructional practices, and a review of teacher professional development of post qualification and new approaches and curriculum pre-qualification is urgent. It is predicted that students will be expected to learn beyond just answering basic questions, and to expect new cognitive pathways (World Economic Forum, 2017). They will want their curiosity to be aroused. Jack Ma at WEF (2017) stated that if we do not change the way we teach, thirty years from now we will be in trouble, if students are not prepared now.

Developing critical thinking skills

As one of the so called 'four Cs', critical thinking is a necessity for the 21st century (Blaschke & Hase, 2015; Brown, 2015; Salehi, 2018). It is the ability to think clearly and rationally, understanding the logical connection between ideas, thinking about one's own thinking (Lai, 2011). It is assumed that critical thinkers are at a level where they are able to engage in dialogues, question ideas and reasoning (Guest, 2000; Lloyd & Bahr, 2010). They ask questions, reflecting on various issues as an indication of thinking independently. They rely on a scientific mind-set, not a superstitious one (important for South African students). Skills for critical thinking are a crucial resource that resonate with a self-directed teaching strategy (Snyder & Snyder,

2008).

It is assumed that university level students must have reached the level of critical thinking asking hard questions. Unfortunately, it is not always the case, considering the situation and context in which many of UNISA students exist. A self-determined approach to learning requires students to have developed critical thinking skills. These skills involve cognitive operations that enable them to interpret and/or analyze, solve problems, create, synthesize and evaluate (Basri, Purwanto, As'ari, & Sisworo, 2019; [Nilson,](#) 2018). These are much needed skills even beyond career development. They can be developed, learned, practised and continually integrated into the curriculum to engage students in active learning (Blaschke & Hase, 2015; Salehi, 2018). For example, developing skills at a lower level would include reading a newspaper article and discussing how they comprehend it, writing a few paragraphs explaining their understanding of the content. This represents a lower level of Bloom's Taxonomy.

To evaluate or assess whether the students have become critical thinkers who can solve problems, there are several suggestions from Kivunja (2015). Examples are tasks which show that the students have reflected on what they have learnt and discussed, its value in real life situations, debated a controversial issue from public media, performed a self-assessment exercise after completing a major project, reviewed how they have achieved the programme's learning outcomes and shown they recognize bias and misinformation in internet resources.

Cogntive development and self-determined learning

To help students become self-determined students, it is important to give those challenging activities and questions to stimulate their

thinking, forcing them to critically examine their existing perspectives (Vygotsky, 1978). Challenging tasks promote cognitive development and metacognition grows when students interact with other people and learning material. Cognitive development through social interaction, between people, students and student, student and lecturer, and/or tools that facilitate learning are recognised as excellent learning opportunities in an indirect way (Mutekwe, 2018).

Most important in the self-determined learner is thinking about one's own thinking - metacognition. Metacognition is an act of thinking about HOW? and WHY? (Siewierski, 2015). The how and why questions are ways of asking oneself deep questions, introspecting on one's beliefs and reflecting. Employing metacognitive strategies to learning helps students become aware of their development, understanding of issues as they keep on reflecting on their work. This leads to independence, the results suitable for self-determined learning. Self-determined students will be able to think, analyse, reflect, plan and organize, monitor their own work, direct their own learning, and to self-reflect along the way. Ongoing practising of this strategy is empowering and encourages students to take charge of their own learning.

Learning and teacher competenciess required for self-determined learning

Students need critical thinking, problem solving, creativity, communication, decision making skills and more to construct new knowledge through pedagogical use of technology. To do that e-students in distance education need to develop skills associated with self-determined learning because as independent students they would need to make choices, set priorities and manage own lives, make decisions (Hui & Tsang, 2012) to succeed.

Unfortunately, our South African society remains patriarchal,

authoritarian, non-critical and this is a prominent feature of our education process. So, for the learner to develop agency to empower her/himself, to gain problem solving skills, reflective skills, self-evaluation and monitoring skills are needed whether in academic learning, vocational learning or self-management and development learning through being encouraged to use action learning, goal setting, process management, and outcomes determination. In an environment of self-analysis, the learner can develop a positive "Yes I can" philosophy. In turn this attitude enables teachers to more effectively facilitate knowledge acquisition, while the learner can test their process against goals and objectives. Development of new learner-teacher partnerships, in which the teacher guides, rather than teaches, could lead to deeper learning, understanding and appreciation of the subject content through using action learning – breaking up learning into bite-sized goals once outcomes have been identified, and using peer discussions to achieve self-realisation.

Self-Determined Learning in a Heterogeneous Classroom

Developing techniques of self-determined learning in a heterogeneous classroom may be difficult, given the range of learning background and abilities of students enrolled for the module. Heterogeneity in any one classroom would represent students with diverse cultural, racial, religious, and linguistic backgrounds; family structures; socio-economic status; and ability levels (Kronberg et al., 1997). However, it is the responsibility of the facilitator to motivate and encourage students to identify own learning style as students with diverse backgrounds and abilities pose different challenges (Diallo & Maizonniaux, 2016). It is important to set meaningful, inclusive and effective assignments and activities to serve all students (Vedder, Horenczyk, Liebkind & Nickmans, 2006). It would then mean the facilitator would design activities and tasks to accommodate students of this diverse group. As self-determined learning is a student-centred

teaching strategy and meant to develop independence, build capacity, capability and the future of many students, activities should be designed in a way that meets the needs of all students. Nonetheless, embracing diversity is conducive for development and learning, having to understand the style of learning employed by many students.

It is known world-wide that technology has made it possible for people to access data and resources in their environment, share information using diverse multimedia, and also collaborate with each other (Luckin et al, 2011). This is a requisite for the heutagogical approach to teaching and learning. Generating a conducive learning context for the learner is imperative to support students to access and use technological resources effectively as an empowering technique for students to become independent and able to create their own learning contexts. A learner centric environment for example, provides students with the opportunities to develop own learning materials, record own videos or audio and then share it with other students online. Activities of this nature may accommodate heterogeneity.

Conclusion

With all institutions of learning moving towards and finally embracing the world of distance learning, otherwise known as e-learning, such a time would require the moving away from old and outdated ways of teaching, into new and relevant approaches to teaching and learning. As mentioned above, it is no longer in the interests of both the students and the teachers to consider mundane teacher-centred learning approaches, in their passivity, as the "best learning methods". Students, particularly in the 21st century, are required to be critical thinkers, problem solvers, creatives, communicators and decision makers among other things in order to succeed within environments of independent learning. Self-determined learning in a heterogeneous classroom would thus be the most feasible solution, as

it allows students to take initiative for their own learning – in terms of identifying their learning needs and resources, formulating personal learning goals, implementing strategies for problem solving, while reflecting on the entire process of learning.

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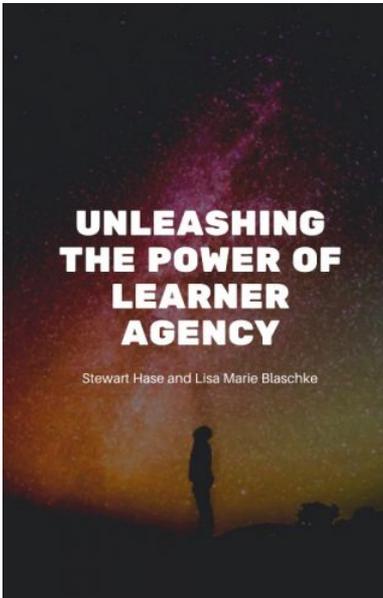
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