Theoretical framework for Open Distance Learning: a South African case study[1]

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ABSTRACT

This paper outlines the elements of a theoretical framework for open distance learning (ODL) in a developing country through the application of the case study method. The theoretical tenets of transactional distance and connectivism have been applied to investigate the feelings, perceptions and expectations of Honours students in Development Studies at the University of South Africa (Unisa). With a special focus on students' access to and usage of the internet and web-based learning, the study contributes to developing a framework for distance education in a developing context. In addition to a literature study and theoretical framework, a quantitative research approach was followed and entailed an exploratory study based on survey research. The results show that the vast majority of students are willing to engage fully with e-learning and are active internet users considering it as an important source of learning and information. However, it is important to note that access and usage of the internet depend on the individual profile of a student. In conclusion, elements to inform the design of an ODL theoretical framework are outlined.

Keywords: connectivism, e-learning, open distance learning (ODL), teaching and learning framework, transactional distance, Unisa

INTRODUCTION

The purpose of this article is to outline the elements to be considered in an open distance learning (ODL) framework. In line with the emphasis on the relation between separation and technology in ODL, the accessibility to and the use of information and communication technology (ICT) is critical to opening avenues and removing the barriers of geographical and communication distances between the student, teacher, content, and the institution. Recent developments in the distance education field represent a swing from pedagogical to andragogical viewpoints, as well as changes in theoretical frameworks with student centredness, learning autonomy, dialogue, structure, and student interaction at its core.

This article presents transactional distance and connectivism as the theoretical foundation for the development of an ODL framework for the University of South Africa (Unisa). Distance learning, also

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referred to as e-learning, is seen as a form of education in which there is a separation between instructor and learner (Picciano, 2017). Özgür and Koçak (2016: 202) emphasise especially flexibility in terms of individual conditions and a shift from 'same for all education' towards 'just for me' education, which implies a more customised perspective. Unisa as an ODL institution has vast numbers of students from diverse backgrounds and any ODL framework should focus on the practical realities of the day-to-day life of the learners (Joubert & Snyman, 2018).

This paper starts by outlining the literature review and theoretical framework, followed by a brief summary of the research design, methodology, and findings. It is important to note that the focus of this article is not to present and interpret comprehensively the case study results, but to offer guidelines for a theoretical framework for ODL.

LITERATURE REVIEW

Globalisation, population movements and the ICT revolution (Özgür & Koçak, 2016) are impacting all aspects of life, including distance education, to meet the increasing needs of the historically underserved, and diverse race and gender student populations (Universities of SA, 2018). Conventional education did not lead to sustainable education for all, and ODL is seen as the most cost-effective, cost-efficient way of solving many of the endemic problems in education and training, especially in South Africa (Kaur, 2018). ODL philosophy is based on openness and flexibility in terms of time and student needs, removal of obstacles and a learner-centred approach (Özgür & Koçak, 2016). Gulati (2008), however, questions if ICT advances are addressing the educational gaps that are due to the challenges created by poverty, cultural issues, and lack of social and educational infrastructure. Trines (2018) also emphasises that although ODL is a cost-effective way of mass education, limited availability and access to modern technology can be a serious obstacle in developing countries. It can only be successful if it is governed by the socioeconomic and cultural characteristics of the students to ensure active and participatory learning, programme diversity, and ease of access for all individuals (Özgür & Koçak, 2016).

Trines (2018: 21) also emphasised that institutions need to understand the learning environment of the student and should, therefore, 'adopt a student-centred pedagogical methodology' (Universities of SA, 2018: 21). Some are even of the opinion that the current dominance of Western ODL models in developing countries smacks of the 're-colonialisation of the academic space' (Universities of SA, 2018: 1). Muhirwa (2009: 18) states that

> Sound Pedagogy instead of 'Technological Silver Bullets' is critical in designing ODL learning programmes, given the number of additional technological, socio-economical, political, and cultural challenges experienced in SA and should be situated in its systemic political and ideological landscape.

Extensive research is available on ODL practice, but the literature is mainly focused on developed, industrialised countries, and there exists 'little or no formal research emphasising the policies and practice of open and distance learning models in the sub-saharan African countries' (Onwe, 2013: 123). Furthermore, the application of ICTs is seriously hampered by lack of expertise, lack of infrastructure, and a largely technologically illiterate user group (Onwe, 2013), which increases the need to emphasise learner context to give insight on how ODL can address the impact and value of distance education. ODL programmes in Africa should focus on an African philosophy and the practical realities of students' day-to-day life.

Özgür and Koçak (2016) highlight that ODL in especially mega-universities (like Unisa, with more than 100 000 students) should follow a blended model based on student profile and equality principles in all aspects. Pallitt et al. (2018) reiterate that although blended and online learning are becoming a prominent

feature increasingly of higher education in Africa, theoretical frameworks are not readily available. Rapid and continuous change in technology requires development of theories and ODL frameworks that can respond to changing environments and societal needs especially in the light of the sustainable development goals (SDGs) aiming to leave no one behind. Aydemir, Özkeskin and Akkurt (2015: 1750) state: 'A theoretical framework specifies which key variables influence a phenomenon of interest. It alerts you to examine how those key variables might differ and under what circumstances'. ODL is a fast-growing field that is in need of research, theory, and application, and, according to Aydemir et al. (2015), there is a need to propose theoretical frameworks. Trines (2018: 1) states that future models will need to improve the delivery and content of ODL courses while making them more interactive and relevant to local contexts. A number of ODL theories exist, as will be discussed in the next section. The question is whether a single common theory of ODL is possible.

THEORETICAL AND CONCEPTUAL FRAMEWORK

Distance education has been characterised by a lack of a solid theoretical foundation and mostly relied on a trial-and-error approach until the 1970s. The need for a sound theoretical basis has led to various interpretations of the concept and the need for a theory within the framework of distance education. According to Keegan (1988), a solid distance education theory should be able to provide a yardstick to measure the political, financial, educational and social decisions to be taken to prevent the ad hoc responses to problem-solving. Holmberg (1986: 3) claimed that 'distance education is a distinct field of education' and paved the way for the critical recognition of a reputable base theory of distance education. Keegan (1988) also expressed that the absence of an independent theory has weakened distance education and did groundbreaking work when he classified the various theoretical interpretations of distance education into four groups: (i) theories of independence and autonomy (Keegan, 2013; Moore, 1973); (ii) theories of industrialisation of teaching (Peters, 2006); (iii) theories of interaction and communication (Holmberg, 1986 & 2005); and (iv) a category pursuing clarification of distance education from the fusion of existing communication and diffusion theories and education philosophies (Aydemir et al., 2015).

For the purpose of this study, the theoretical point of departure is the framework of independence and autonomy – more specifically, Moore's (1973) theory of transactional distance. In contrast with the many theories that originated in the classroom environment, the theory of transactional distance offers an all-embracing pedagogical framework for distance education that developed from an inquiry of teaching and learning through technology in contrast with classroom-based theories. According to Tait (2017: 6), this theory is seen as one of the few distance education theories

> that can be used to test hypotheses and serves as a heuristic device, a means of identifying questions for research and also a very practical instrument to be used in making… difficult instructional design decisions. (para. 3)

Moore's theory accommodates analytical investigation of the interplay between course structure, teacher-learner communication, and students' inclination to regulate the learning process. In the words of Moore (1997: 22), transactional distance is 'a psychological and communication space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner'. The value of the theory lies in the fact that it gives direction to the designers on both the methodological and instructional design of the programme in order to decrease transactional separation, thereby exhausting learning outcomes. Consequently, this theory inspects the two main elements present in distance education, namely (i) learner autonomy and (ii) teacher-learner distance. Representing the pedagogical aspects of education, it comprises fixed principles and a model outlining the three sets of variables: (i) dialogue, (ii) structure and (iii) learner autonomy (Moore, 1973). Moore (as cited in Stirling, 1997: 1) explains it as follows:

> Dialogue… refers to the teacher-student interaction, specifically the communicative transaction of giving instruction and responding. Structure refers to how the instructional programme is designed. In this sense, structure reflects the programme's capacity to respond to a learner's individual needs. As dialogue increases, structure decreases. As the interaction between teacher and a learner increases, the existing programme's structure of objectives, activities, and assessment decreases to accommodate the learner's needs. Learner autonomy refers to the characteristic of self-direction.

In sum, on the one hand, as dialogue increases, structure decreases; on the other hand, transactional distance increases when dialogue decreases and structure increases. Geography does not determine distance; distance is determined by the relationship between dialogue and structure. According to Stirling (1997), the theory of transactional distance provides a theoretical framework for distance education instructors to create an operational learning environment and to design original models of instruction. In the context of this study, the variable of structure is critical to determine whether the Honours programme is responsive to the individual needs of learners, and to what extent future 'educational objectives, teaching strategies and evaluation methods can be adapted to the objectives, strategies, and evaluation methods of the learner' in light of the geographical distribution of students (Stirling, 1997: 2). Moore (as cited in Sher, 2009) focuses on three types of interaction (dialogue): (i) learner-instructor interaction, (ii) learner-content interaction and (iii) learner-learner interaction. The concept of interaction is probably the most fundamental element of successful distance education programmes. Learner-instructor interaction encompasses motivation, feedback and dialogue interaction, while learner-content interaction represents the mode of obtaining intellectual content and academic information from learning material such as context format, audio or video, online communication, CD-ROM and computer programs. Learner-learner (structured and/or non-structured) interaction refers to dialogue between students and exchange of informational material, ideological content, and ideas about the programme. Hillman, Hills and Gunawardena (as cited in Sher, 2009) expanded on the three types of interaction and added learner-technology interaction. They emphasise that technology as delivery mode of instruction is a critical element of the interaction model. This is especially the case in ODL and an important element of this research study. Learners without the necessary skills and/or ICT devices spend excessive time and energy interacting with the technology, the instructor, other learners, and content, which impacts negatively on effective engagement in learning and interaction. Thus, it is required from the instructional designers to accommodate 'learner-interface interaction' to facilitate appropriate interactions between the learner and technology (Baynton, 1992: 17-18).

In line with the notion of Hillman, Hills and Gunawardena (cited in Sher, 2009) to add learner-technology interaction, Garrison (1989) highlighted the significance of educational transaction between teacher and learner (reflecting the theory of communication and learner control). Garrison's (2000) conception of the learning process necessitates teacher-learner interaction in contrast with that of Moore (1973; 1997) and Holmberg (1986; 2005), who regard learning as an individual, internal process. Garrison argues that two-way communication in the form of technology is essential in a situation where the learner and teacher are separated by distance. In fact, technology has been identified as one of the three critical elements in distance education by Garrison (1989). He claimed that distance education theory and practice advanced because of the growing sophistication of instructional technology given the fact that technology and distance education are inseparable elements within transactional education. Garrison and Baynton (as cited in Garrison, 2000) emphasised that the concept of control by the learner is another conspicuous notion. Learner independence and control, based on the learner-interface interaction, was added to substitute the notion of independence (autonomy) as presented by Holmberg and Moore. Garrison and Baynton (1987) are of the opinion that these two concepts have been applied with diverse interpretations and thus do not echo the necessary interdependent teacher-learner relationship. Learner control (Garrison, 2000: 10) is concerned with

> the opportunity and ability to influence and direct a course of events… control within the educational setting, however, cannot be established by only one party when the direction of the course of events must inherently be collaborative.

Control is interpreted in terms of the relationship between teacher, learner and content, and this control is grounded in the interrelationship between independence (self-directed learner), proficiency (to learn independently), and support (characterised by the resources available to guide and facilitate the educational transaction). Baynton (1992) designed a factor model explaining that control does not equal independence but rather necessitates an equilibrium among the following three factors: (i) a learner's independence (the opportunity to make choices), (ii) competence (ability and skill), and (iii) support (both human and material). The analysis of the three factors implies that other variables may impact the concept of control and the multifaceted teacher-learner interaction.

Another theoretical construct that was added to distance education was the notion of social presence or the context in which distance learning takes place. ICT advancement has modernised the learning process. Siemens (2005) brings together the social and cultural environment, on the one hand, and the use of technology in distance education, on the other, in an alternative theory known as 'connectivism'. Technology determines how we learn, how we connect and how we communicate, and, in this sense, connectivism offers

> a model of learning that acknowledges the tectonic shifts in society where learning is no longer an internal, individualistic activity. How people work and function is altered when new tools are utilised. Connectivism provides insight into learning skills and tasks needed for learners to flourish in a digital era. (Siemens, 2005: 7)

This theoretical construct is reflective of the underlying hypothesis of learning which emphasises the role of social environments and cultural contexts. Bates (2015) explains that learning has changed in the following ways: (i) the way we learn and what we learn, (ii) how we learn and (iii) where we learn. Learners are no longer impassive users of knowledge; they are driven by a dynamic flow of information to create content (Picciano, 2017). Learning takes place in collaboration and through interaction with other learners outside the classroom in virtual venues any time of the day. Stephenson (quoted in Picciano, 2017: 175) refers to this as 'What Knowledge Tears Apart, Networks Make Whole'. According to Siemens (2005: 3), most distance education theories do not acknowledge learning that takes place 'outside of people', whereas connectivism focuses on developing and creating knowledge and learning rather than disseminating it (Picciano, 2017).

Choosing what to learn as well as the meaning and elucidation of data are seen through the lens of a fluid reality within the technology development. Due to changes in the information climate and environment, answers to questions change accordingly, thus impacting on decision-making which is in itself a learning process. Within this continuously changing environment, (i) creating an accommodating social context in which learning and human relationships are promoted, (ii) developing group cohesiveness – maintaining the group as a unit, and (iii) helping members to work together for a mutual cause are critical for successful ODL. The social context impacts on motivation, attitudes, teaching and learning. Consequently, the local culture and living reality of a learner should receive attention to ensure that technology-based learning activities do not impact negatively on the local social environment and widen the gap between the privileged and deprived groups (Gulati, 2008). As technology is not culturally neutral, the design of instructional modes is crucial to prevent the inappropriate use and transfer of media, materials, and services. McIsaac and Gunawardena (1996: 9) express it as follows:

> Technology based learning activities are frequently used without attention to the impact on the local social environment. Computer-mediated communication attempts to reduce patterns of discrimination by providing equality of social interaction among participants who may be anonymous in terms of gender, race, and physical features. However, there is evidence that the social equality factor may not extend, for example, to participants who are not good writers but who must communicate primarily in a text-based format. It is particularly important to examine social factors in distance learning environments where the communication process is mediated and where social climates are created that are very different from traditional settings.

The theoretical construct of social presence relates directly to this study as the participants are from different social contexts. We can conclude that '[c]onnectivist pedagogy stresses the development of social presence and social capital through the creation and sustenance of networks of current and past learners and of those with knowledge relevant to the learning goals' (Anderson & Dron, 2011, n.p.). Closely related to the social context is the framework of adult learning, that is, andragogy.

Knowles (as cited in Pappas, 2013: 2-3) introduced the term 'andragogy' to describe the education and learning of adults. Knowles also distinguished between the characteristics of adult versus child learners and identified the following five assumptions about adult learners: (i) self-concept (self-directed human being), (ii) adult learner experience (increasing resources for learning), (iii) readiness to learn (developmental tasks of his/her social roles), (iv) orientation to learning (learning orientation shifts from subject-centredness to problem-centredness), and (v) motivation to learn (internal). More importantly, however, are the following principles of andragogy as highlighted by Knowles (1984) and Pappas (2013) that should be applied to adult learning:

1. Involvement of adults in the planning and evaluation of their own learning and tuition is critical.
2. The action of learning is based on experience.
3. Adults are more attracted to studying subjects that can be applied instantly to their jobs or personal life.
4. Adults are more oriented towards problem-solving learning than content.
5. The starting point for adult learning programmes should be the needs and interests of the specific learner.

In light of the above, we can deduce that, for adult learning to be effective, teaching and instruction design should accommodate the different contexts, experiences, and backgrounds of learners. The design of learning programmes should specifically address and fulfil the needs of learners that are spatially separated, from both the institution and lecturers, and remove all unnecessary barriers to learning. Within distance education, ICTs should increase the variety of methods available, provide more appropriate methods of communication, and promote increased access to higher education and lifelong learning. It is, however, critical that such technologies enhance the intended purpose of learning as well as consider the technology profile of both students and staff. Furthermore, ICTs should be informed by the geographic location of students and measures should be put in place by providing appropriate structure, dialogue and support to bridge the transactional and epistemic distance involved in e-learning and teaching. The ultimate role of digital technology is to create an enabling setting for students to access education at a distance. Higher education institutions are required to redesign their teaching and learning strategies and models to be pertinent and viable, preparing students for a rapidly advancing technological society. The remarkable development and improvements in ICTs and multimedia in the last decade brought plenty of opportunities to learning and teaching environments and offer a tremendous range of education tools to learners and educators in different social settings (Özgür & Koçak, 2016).

SOUTH AFRICAN CASE STUDY

Unisa as an ODL institution

Unisa is an example of a traditional distance education institution that has developed and transformed from the first generation of correspondence education to an ODL institution with a blended model of teaching and learning. Although ODL opens new horizons and is a cost-effective way of mass education, the increasing digital divide is causing larger disparities. ODL can only be successful if it is governed by the socioeconomic and sociocultural characteristics of the students, and if it ensures active and participatory learning, programme diversity and ease of access for all individuals (Özgür & Koçak, 2016). Careful measures must be taken to ensure that the use of ICTs do not broaden the divide between the rich and the poor.

In a study by Lephalala and Makoe (2012) about the impact of sociocultural issues on African students in distance education, it was found that environmental, social, cultural and economic aspects impact negatively on students' learning experience. They criticise ODL as a linear process that *isolates and marginalises learners* because of the lack of personal interaction between both students and lecturers. The study also showed that students experience restricted access to crucial and fundamental facilities necessary to study effectively in an ODL environment. The cycle of knowledge as identified by Siemens, i.e., from personal to network to organisation, is thus not achieved. Lephalala and Makoe (2012) especially stress the importance both of taking into consideration the vast contextual differences between students and of the need for programmes to be responsive to the individual and to specific needs of students. This viewpoint demonstrates the relevancy of connectivism as a distance education framework for an ODL institution since this learning theory is founded in the digital age and has the individual student as its point of departure. Siemens (2005: 6) explains it as follows:

> The starting point of connectivism is the individual. Personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to individual.

The question is whether Unisa students have the means, skills and knowledge to engage effectively with this network in their learning process. Although it is the opinion that distance learning methods are more cost effective in delivering more training to a wider range of people, it presents serious challenges and disadvantages compared to the traditional learning environment (Ayden & Tirkes, 2010). To achieve Unisa's commitment to advance social justice by addressing inequalities and empowering previously disadvantaged groups (Unisa, 2015), funding and cost structures should take into consideration programme objectives, the profile of students, local conditions, and specific target groups' needs and circumstances to prevent an adverse effect on the quality of teaching and learning as well as on economic and social justice. Although technological advancements increase opportunities and accessibility, many developing countries are still constrained by technological infrastructure barriers, commonly called the digital divide (Trines, 2018).

Research design

A quantitative research design was followed and involved an exploratory study based on controlled survey research. The sample frame consisted of the total population of 260 elements (204 South African and 56 foreign students registered for the Honours degree in Development Studies in 2013). The students were contacted via email to inform them about the proposed research project and to confirm whether they were willing to participate. Data collection methods included a literature review of the theoretical frameworks of distance education and a self-administered electronic survey questionnaire consisting of 51 open- and close-ended questions. 47 questions covered the feelings, perceptions and expectations of students, as well as their access to and usage of the internet and web-based learning. The remaining four

questions represented personal and geographical details (Babbie, 2011). Questionnaires were sent to students via their *mylife* Unisa email. A total of 34 students responded to the questionnaire, representing a return rate of just over 13% of the study population. According to Babbie (2011), a return rate of 10% is acceptable. However, in light of the special focus of this research project on students' access to and usage of the internet, the researcher randomly selected and telephonically contacted 10 students who did not participate in the survey to find out the reasons for their non-participation. All 10 indicated that they did not receive the survey, of which eight explained that they do not access to or use the *mylife* Unisa email account because of either time constraints or system access problems. This is a critical factor in light of the central role that ICTs play in ODL and student support.

The study abided by the Unisa guidelines for conducting research involving Unisa students and the necessary ethics clearance and consent were obtained from Unisa and the participants respectively. Data gathering and analysis were subject to the requirements set for accurate, reliable, and valid data collection techniques and interpretation. A combination of coding, memoing and concept mapping was applied in data analysis. Results were summarised in terms of descriptive statistics with limited tables to illustrate.

FINDINGS AND DISCUSSION

The respondents consisted of 18 female and 16 male students. The majority (71%) resided in urban areas, 21% in rural areas, and the balance of 8% in peri-urban areas. A total of 19 South African compared to 15 foreign students from different countries participated in the survey. It is interesting to note that the response rate from foreign students (27%) is higher than that of South African students (9%), which is indicative of the fact that geographical separation can be overcome through digital technology. However, the fact that only 13% of the total student population participated is alarming, given the ODL context. Most of the respondents (19) fall within the age group of 26-35, reflecting a relatively young student population. This can have a positive impact on the future and success of e-learning as this age group is more exposed to and might be readier and more willing to engage with ICTs.

Students' knowledge of ODL: A large number of students (19) indicated that they know the meaning of ODL. It is, however, clear from the responses to a specific question on their understanding of online learning and teaching that students do not have an all-inclusive comprehension of the concept and method. No mention was made of either the basic theoretical principles underlying ODL or students' central role, position, and responsibilities as learners within the ODL model.

Access to and use of ICT: Results revealed that fewer than 50% of students have access to the full range of services consisting of a personal computer, printer and internet facilities where they live. The majority of students lack one or more of the essentials at home and 24% have no access to the internet at home. This can have a negative impact on their learning experience and readiness to engage effectively with e-learning programmes. Furthermore, no student makes use of facilities at a cybercafe and the reasons for this must be investigated as such facilities are often promoted to increase access to ICTs within an ODL framework. Quite interestingly, 29% accessed and completed the survey between 17h00 and 07h00, which is indicative of the time that students engage with *my*Unisa and activities related to their studies compared to 71% who completed the survey during work hours. One can thus conclude that the majority of the students access and use the internet for their studies during working hours. Another important finding is that 68% of students use employers' computers and internet facilities and 80% of students use printing services at their place of work. This finding is indicative of the non-specified crucial role that employers play in, and their indirect financial contribution to, e-learning in distance education.

Only 21 students print study material. 80% of these students use printing services at their workplace and the balance of 20% use facilities at a cybercafe. Students also indicated that they have challenges

because of printing costs, difficulties with access to and downloading of study material, and lack of access to required technologies. Regarding the submission of online assignments, the majority of the students complained about compatibility issues relating to web browsers and unreliable functioning of sites. Almost 46% of students never participate in discussion forums on *my*Unisa and 33% participated fewer than once a month. This finding and the reasons thereof should be investigated to ensure that Unisa's ODL model and e-learning programmes increase student participation, proactive learning, and responsiveness (Unisa, 2015). 73% of students indicated that they never make use of Unisa facilities to access the internet. 32% of these students gave as reason that facilities are too distant and not easily accessible. Students indicated that the institution should establish more computer and study centres closer to students and include low-cost equipment in tuition fees. The finding that 91% and 9% of students (a total of 100%) regard the provision of computers and facilities by Unisa as 'very important' and 'quite important' respectively is an indication of the expectations of students. Furthermore, 94% of respondents feel that it is essential that Unisa provide 'free' computer and internet facilities. In line with this finding, Unisa will have to increase regional infrastructure and decentralised services, especially since Unisa dedicates itself to becoming 'the African university in service of humanity' with emphasis on access, open learning, equity, and empowerment (Unisa, 2015).

Although 64% of students regard online learning and tuition as 'a vital and important method', almost a quarter of the students expressed that it is 'to the disadvantage of students without computer and internet facilities' while 12% felt that it is 'an add-on service, secondary to other tuition methods and services'. Another factor that should be considered is the fact that 36% of students indicated that they require training in 'how to study online', while 15% require training in 'the use of computers'. In addition, 61% expressed that they prefer 'printed tutorial letters and study material' in comparison to 33% who prefer 'online study materials'.

ANALYSIS OF THE FINDINGS

It is evident that some students lack the necessary skills and competence to engage fully and efficiently with online learning. Further research is required to determine the specific circumstances and needs of such students. This will also contribute towards the design and effective delivery of ODL support structures and services, removing barriers to access learning, and, more specifically, student-centred interventions. The fact that the majority of the students are active internet users and regard it as an important source of learning and information is a significant finding. It relates specifically to Moore's (1973) theory of transactional distance which emphasises teaching and learning through technology to overcome the 'psychological and communication space' in distance education. It also informs educators about how to design the course in terms of the pedagogical aspects of education. The case study clearly reflects the need for ICT skills, knowledge and competency programmes, which are crucial to the removal of barriers to enable learners to engage fully with the learning process, content, other learners, and technology. The ultimate role of digital technology is to create an enabling setting for students to access education at a distance; thus, HEIs are required to redesign their teaching and learning strategies and models to stay pertinent and viable to prepare learners for a rapidly advancing technological society.

The findings have direct implications for the ODL framework of Unisa as well as for the design and implementation of efficient delivery methods and channels of e-learning to accommodate the diverse needs of students and to facilitate full access, dialogue, and interaction for effective teaching, learning, and research in distance education. The concept of separation is central to ODL frameworks, and Unisa needs to place emphasis on the meaning of the concept 'distance' in (i) the learning experience and expectations of students and (ii) the teaching role and instructional methods. Any e-learning programme should secure the right of all students to have equal opportunity for social and educational advancement. Priority must therefore be given to learner autonomy, participation and empowerment of students with

the recognition of students as key change agents in their individual learning experience: an equilibrium between structure and dialogue to prevent a 'one-for-all recipe'. The living reality, and not the ideal context of each student, is the point of departure, thus accommodating each learner's individual needs and preferences. This is the essential principle, in addition to the elements, that should guide the design and implementation of an ODL framework.

ELEMENTS OF A THEORETICAL FRAMEWORK FOR ODL

In light of the findings, and against the background of the theoretical and conceptual frameworks, the following elements have to be incorporated into the framework.

In establishing a sound theoretical ODL framework, institutions need to guide learners to an understanding of ODL philosophy, principles, and methodology to enrich their intended learning experience. Understanding the concepts of separation, dialogue, structure, content, the role of learner and teacher, and interaction are critical elements. Learners need to be capacitated to exercise control over (i) the learning process and self-direction to increase learner-content interaction, (ii) learner-learner interaction to exchange informational material, ideological content and ideas about the programme, and (iii) learner-technology interaction (see Garrison, 1989). Skills, knowledge and competency programmes in ICTs should be available to learners.

ODL initiatives should be based on dialogue and deeper engagement with students to establish a more interactive relationship with them, thereby addressing the main elements present in distance education, namely learner autonomy (expressed by Garrison and Baynton (1987) as 'learner control') and teacher-learner distance, as well as dialogue (teacher-student interaction and communicative transaction of giving instruction and responding). The relationship between technology and distance education are inseparable (Garriso, 1985) and transactional distances in terms of access and usage of ICTs must be minimised. In light of this, access to ICTs, and the application and use of ICTs, plays a critical role in increasing student participation, proactive learning, and responsiveness.

Instructional design has to reflect the capability of the programme to accommodate a learner's individual needs and to determine to what extent future teaching and learning programmes can be adapted to the aims, approaches, and assessment methods of the learner. Equilibrium of (i) the opportunity to make choices; (ii) competence (ability and skill); and (iii) human and material support is necessary to create a functioning learning environment and to design original models of instruction.

Other critical elements that should underlie the theoretical framework are the social context and cultural environment of the learner. Technology-based learning activities should accommodate learners' local cultural environment and designers should guard against discrimination because of their personal characteristics in terms of gender, race, physical features, and technological skills, by providing equal access and quality of social network interaction among learners. New learning tools impact on the way people work and function, and they require a change in learning skills and tasks. Although technology is central in stimulating relationships and developing group cohesiveness to achieve a mutual goal, care should be taken that technology not be detrimental to those learners without computer and internet facilities. Furthermore, technology is not culturally neutral; therefore, the design of the instructional mode is crucial to prevent the inappropriate use and transfer of media, materials, and services. This is substantiated by the fact that respondents originate from different countries and cultural contexts.

Lastly, the following principles of andragogy should be applied to adult learning in an ODL context: (i) the focus should be on self-directed adults; (ii) the experience of learners is an important resource for learning; (iii) the developmental tasks of learners' social roles determine readiness to learn; (iv) learning orientation should change from subject-oriented to problem-oriented; and (v) internal motivation to learn is critical (Knowles, 1984).

CONCLUSION

The purpose of this study was to outline the elements of a theoretical framework for ODL in a developing country through the application of the case study method. The literature review showed that although the ICT revolution in combination with ODL has the potential to meet the increasing needs of learner populations (Universities of SA, 2018), it can only be effective if it is governed by the socioeconomic and sociocultural characteristics of the learners. Distance learning should have as a point of departure the actual needs of the target population, and ODL institutions need to understand the learning context of its learners. ODL institutions should therefore 'adopt a student-centred pedagogical methodology' (Özgür & Koçak, 2016: 208; Trines, 2018: 21). It is clear from the literature review that there is a need for ODL theoretical frameworks. However, ODL institutions should follow a blended model based on student profile and equality principles in all aspects. Fast-changing technology requires ODL theories that can respond to changing environments, making them more interactive and relevant to local contexts. The COVID-19 pandemic reiterates the notion that a blended model is critical. Unisa's ODL framework should be able to adapt to changing environments and guarantee that the individual needs and contexts of learners are accommodated. The unequal access to ICTs in this global crisis has proven to be detrimental to teaching, learning and equality principles.

The theory of transactional distance was applied to explore the feelings, perceptions, and expectations of Unisa students, and to identify the elements of an ODL framework. This theory presents an all-embracing pedagogical framework for distance education that developed from an inquiry of teaching and learning through technology and gives direction to decrease transactional separation in terms of learner-instructor, learner-content, and learner-learner interaction. Added to these constructs were learner-technology interaction and the notion of social context (interaction between the social and cultural environment and technology) as captured by the theory of connectivism.

In analysing the dominant notions and principal foci of the different theoretical frameworks of distance education, it is significant to acknowledge that the learner is the primary role player in any distance learning programme. Other significant elements are communication, separation of teacher and learner, and learner autonomy. A single theory of ODL is, however, not possible. In designing an ODL framework, it is necessary to take into consideration the concern, as expressed by Keegan (as cited in Garrison 1989: 7), that the 'effects of distance or separation create a situation which must be restored to resemble more closely the interpersonal aspects of traditional teaching and learning'. This is where dialogue, structure and interpersonalisation play a critical role in overcoming separation. Good practice in ODL offers resolutions for the intrinsic complications of transactional distance. The role that ICTs might play in addressing this distance depends on suitable and well-functioning structure, dialogue, interaction, and support. It is, however, critical that such technologies enhance the intended purpose of learning as well as consider the technology profile of both students and staff.

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