USF | Muma Case Review
A publication of the Muma College of Business | University of South Florida

Volume 3 Number 26 31 DEC 2018

ANTONIA MAKINA

UNIVERSITY OF SOUTH AFRICA: CHANGE MANAGEMENT AND LEADERSHIP FOR OPEN DISTANCE AND E-LEARNING[1]

Antonia Makina, an education consultant in the Directorate for Curriculum and Learning Development at the University of South Africa (UNISA), was assigned the task of recommending a theoretical guideline for adoption by the management of the university in its quest to implement Open Distance E-learning (ODeL) at the university. This was because Open Distance E-learning delivery presented new challenges and opportunities that could not always be fully addressed by the traditional theories and guidelines.

Founded in 1873 as the University of the Cape of Good Hope, UNISA was one of the first public universities in the world to teach exclusively by means of distance education. UNISA had since become one of the largest comprehensive, flexible and accessible open distance learning institutions offering internationally accredited qualifications to a very large number of about 350 000 students. In order to meet its obligations and mandate, UNISA had to adopt the e-learning method of delivery of education. The university was in its early stages of implementation of the e-learning system, hence a need for provision of guidance to the management of the university in the implementation of e-learning.

Antonia's role as an education consultant included identifying guidelines and theories that could improve the ability of the leaders and managers to plan, design and implement e-learning environments at the university. In researching the area, she had come across five different guidelines that originated from theories of learning, which seemed particularly relevant to the environment in which the university was operating. These models were the theories of the socio-technological perspective, collagogy, constructivism, connectivism and chaos (Exhibit 1). Antonia needed to decide on the models she wished to propose as the theoretical guideline for adoption by the university management.

Editor: Hossana Twinomurinzi, Vincent Z Mzazi and Grandon Gill

The University of South Africa (UNISA) and ODeL

Background

UNISA's vision was to be "the African University shaping futures in the service of humanity" and it intended to become a truly African university in its form and content. Open distance and e-learning (ODeL) was created as a multi-dimensional concept to guide the achievement of this vision and mission. ODeL was aimed at bridging the time, geographical, economic, social, educational and communication distance between students and the institution, students and academics, students and courseware, and students and their peers.

At the time, the major challenge faced by the university was to ensure that the educational model was implemented according to acceptable ODeL practices. It was necessary for the implementation process to be supported by primary and secondary support systems designed to cope with the annual increases in UNISA student numbers. The major question within the vision was how to bridge the distance and access gap in the face of impending change management.

Over the years UNISA's student profile had changed from working and middle-aged learners to young working students and ODeL had to effectively respond to these changes. Furthermore, the significant growth in the number of students in the UNISA programmes at and in many other universities became an issue of concern. Therefore, within the ODeL business model, technology had to be utilized for "greater efficiency, transparency and effectiveness" of the teaching and learning delivery (UNISA, 2009).

e-Learning Implementation

e-Learning referred to structured learning opportunities mediated through the use of digital resources (usually combinations of text, audio and video) and software applications. It could be offered on-line synchronously (e.g. real-time conference) and asynchronously (e.g. text-based discussion forum) or off-line (e.g. interactive CD/DVD/flash drive) (COL, 2007). It could be employed in contact and distance programmes, in formal learning modes such as formal online courses and in informal learning environments.

Whereas formal e-learning incorporated objectives and outcomes that were defined by an instructor in educational institutions, informal e-learning was meant to be implicit, unintended and opportunistic. Informal learning was on the other hand undertaken at the learner's own terms without either prescribed curricular requirements or a designated instructor (Eraut, 2004; Livingstone, 2002). When fully embraced, e-learning carried with it a whole philosophy that changed the role of learner, lecturer and management (Keramida, 2016). Understanding this relationship could transform the approach of universities all over the world.

Achieving this goal entailed capacitating and improving the readiness of the managers in respect of implementation of e-learning. The plan of action was for the university to provide direction and scope through theories and guidelines that described an e-learning environment. This could further set the stage for the emergence of professional organizations, consortia and partnerships that shared educational knowledge resources (Miller, 2010).

The Five Theoretical Guidelines

Overview

A recommendation and decision had to be made as to which theory among the theories of collagogy, chaos, connectivism, constructivism and the socio-technological perspective would be adopted by the management in their implementation of e-learning at UNISA. Different business models that spoke to the goals, vision and mission of the institution needed to inform the decision. Each theory is considered in detail in the next sections that follows.

The theory of collagogy

Collagogy was a new paradigm for social learning contexts that was defined as the art of enabling social collaborative or networked learning (Lehman, 2010). The word was defined as leading guiding and stimulating whereby, when combined together, these principles were literary translated as “group leading" or “to labor together". The concept of collagogy, grounded in learning theory, explained a new set of practices and strategies that provided an environment for social, networked and collaborative learning. Learners acquired the knowledge and skills necessary to effectively access and use the social learning environments and processes. A culture change was, therefore, , required to embrace and employ social learning in the design of learning solutions that maximized social learning process and encouraged informal just-in-time learning.

According to this theory, students learned best when they observed other people and imitated their behavior and actions. When they saw “role models” better their lives in their actions, they were inspired to learn more. Another example is that if students followed their favorite blogs they could learn new ways of writing and how to master and play with the language. Through advances in digital technology and the influx of social tools, the “social” element could be easily incorporated into e-learning.

Social constructivism

Social constructivism was a philosophy originally based on the belief that learners build their own mental structures by reflecting on their personal experiences and relating the new knowledge to what they already knew (Vygotsky, 1978). Later on, social constructivism extended to a cognitive constructivism that emphasized the learners’ social interaction and the collaborative nature of learning. It extended the traditional focus on individual learning to one that addressed collaborative and social dimensions of learning when interacting with an environment and other people (Jonassen, 1991). Knowledge was constructed within social contexts through interactions with a knowledge community. Building on the constructivist learning theory, not only was the model focused on mental constructions of knowledge but also on the physical constructions of tangible products or artifacts. The construction of knowledge was a function of the prior experiences, mental structures and beliefs that students used to interpret objects and events (Jonassen, 1991).

The theory of chaos

The theory of chaos recognized the connection of everything to everything and therefore identified the fact that there was order in all disorder (Marion, 1999; Gleick, 1987). Knowledge was viewed as being disorderly and everyone was encouraged to recognize and order the patterns in the disorder so as to find meaning. The ability to recognize and adjust to pattern shifts meant that enabling the creative, and

adaptive capacity of complex adaptive systems within a context of knowledge-producing organizations became key (Uhl-Bien, Marion & McKelvey, 2007; Uhl-Bien & Marion 2009).

“Predictions about the future is very hard..” (Berra, 2016 p5). According to chaos theory, such predictions were not just hard, but impossible. Chaos therefore, represented the “breakdown of predictability, evidenced in complicated arrangements that initially defied order” and therefore originated from “a cryptic form of order” (Siemens, 2014, p3; Calder, 2013, p3). In the chaos theory, the system was expected to assume that everything may change or break. Therefore, systems and other infrastructures needed to be built and deployed in rapid, repeatable, ideally automated ways (Galbraith, 2003). Institutions had to monitor what was happening in real time, and sought to provide intelligent automated responses.

From the faculty perspective of teaching, it was important to note that systems like e-learning were not linear systems and could be confusing (to say the least). In the process of developing e-learning systems nothing could be foreseen or predicted. Hence the need to develop quick response systems. Best practices would then be to create systems that operated and invested in a change-dominated world. The higher education e-learning systems needed to respond to continual changes in the e-learning environment. For example, when events or crises hit individuals and groups, a spontaneous capacity to organise and respond to this challenge was expected (Galbraith, 2003). This stood in direct conflict with a “learning organisation” concept that sought alignment informed by systemic understanding, together with collegiality in leadership and management, in the search for profound and sustainable change.

The socio-technological perspective

Socio-technical systems (STS) in organizational development consisted of an approach to organizational design that recognized the interaction between people, technology and their environment in workplaces. It referred to the interrelatedness of the technical aspects of an organization with the society around it as a whole. This was understood as the interactions between society's complex infrastructures and human behaviour. The socio-technical perspective recognised that all technologies were embedded in a social context that adapted and helped to reshape social worlds through the course of design, development and deployment and use (Avgerou, 2001). For example, rational approaches ignored the psychological and social needs of the workers when introducing new technologies, and tended to over formalize the worker's activities (Eason, 2007).

The socio-technical approach focused more on work group interactions than individual or group performance. In this model, the system needed to accommodate social relations like the interests, values and behaviors of people and the organization were expected to be linked to the technological artifacts (e.g. tools and machines) (Rip & Kemp, 1998).There was a need for protected spaces for the development and the use of promising technologies through experimentation. This cycle of knowledge development translated into the simple principle that people, groups, systems, nodes and entities could be connected to create an integrated whole (Barabási, 2002).This model clarified the idea that higher education systems did not design technology but rather designed socio-technical systems that understood how people and technologies interacted.

At the institutional level, and within the Socio-Technological Perspective, it was important to recognise the importance of every stakeholder entity that would contribute to the development of e-learning spaces. Furthermore, even emotions, values and many other aspects within the system needed to be recognised.

Connectivism

Connectivism was a learning theory introduced by George Siemens in 2004 in order to cope with the increasing complexity and fast-paced change of the new knowledge era. Siemens (2004) argued that there was a need to see the power of connections, and asserted that learning was primarily a network forming process. Connectivism was a learning theory for the digital age because it recognized learning that resided in a cycle that started with the students' knowledge being in the form of a network, which they then transmitted to the university. The university in turn transmitted the information into a network where the student fetched it. This cycle of knowledge development (personal to network organizations) allowed learners to remain current in their field through the connections they formed (Downes, 2006 & 2007). The understanding that decisions were based on rapidly altering foundations as new information continually being acquired drove connectivism. The ability to draw distinctions between important and unimportant information, and to recognize when new information altered the landscape based on decisions made yesterday, became vital and critical.

The connectivist theory accommodated learning that the human being was not in complete control and that learning occurred outside of a human being (Siemens, 2004). Since information had grown to enormous proportions, it had become too complex for individuals to manage and experience in single units. Since no one person could experience everything all the time, other people or other things had to experience at least some of the things for them (Stephenson, 2004). The “know-how and know-what, was supplemented with the know-where (the understanding of where to find knowledge needed)” (Siemens, 2004 p.1). In that view, knowledge was seen to be made up of connections that emerged and were adapted based on the context (Kop & Hill, 2008). Managers and leadership could create and manage an environment of connections at various levels—student to student, student to the world around, student to systems and systems to system connections could not just emerge from nowhere.

Practical implications

Antonia realized that each of the alternative theories would have significant practical implications on how UNISA focused its resources and delivered its content. She reflected on these as follows:

Collagogy: This theory relied heavily on a rich collaboration between students. Realistically, if this became UNISA's focus it was likely that substantial investment would be needed to expand the capabilities of its learner management system and ICT systems to support a better level of interaction and engagement beyond the capabilities of its current systems. From a faculty perspective, curriculum would need to be developed that relied more heavily on such engagement. Perhaps most significantly, faculty would need re-training in implementation of this method. This was a change that needed involvement in not only how classes were conducted but in changing and implementing alternative assessment strategies.

Social constructivism: If this became UNISA's focus, substantial investment would be required for the expansion of the capabilities of its learner management system and ICT systems to support better social contexts that interacted with a relevant knowledge community. Antonia could sense the challenge in the identification of a relevant knowledge community that would arise in different online contexts. From a faculty perspective, curriculum would need to cater for both mental construction of knowledge and physical construction of tangible products or artifacts. Lecturers would need to re-focus their attention on the fact that students would be more motivated and more engaged with the learning if they were constructing artifacts that others would see, critique and/or use (Harel & Pappert, 1991). A crucial response to these new developments would require new teaching and learning strategies that had a pedagogical focus and was task oriented. Leadership had to design a system that integrated students into a

knowledge community for collaborative, assimilation and accommodation of new information. Systems would need to support students' collaborative learning that facilitated and guided specific ICT tools such as the discussion forums.

Chaos: The theory of chaos enlightened higher education institutions to acknowledge both ends of the e-learning reality—ranging from stability to disintegration—and then to aim to be responsive to issues in-between these ends. Since this theory believed in a future that could not be fully envisioned, was unpredictable and depended on chance, it would be important for the e-learning systems to be geared towards the creation of sensitive response systems. This meant that making was a very important aspect of this space as chaos defined the nature of knowledge. Important activities for the assessment of students would be the recognition of the patterns and meaning—in problem-based issues and forming connections with specialized communities. Providing spaces that enabled adjustments to pattern shifts would become a critical aspect of curriculum and learning development. Since knowledge was defined as disorderly, the leadership for e-learning environments should be encouraged to recognize and order the patterns in disorderly knowledge. Best practices should then be for the institution to create systems that operated and adapted in response to the change-dominated environments. Students of this era tended to appreciate this type of thinking as they witnessed the everyday challenges of unpredictability in the world.

Socio-technical approach: This perspective relied heavily on a design approach that considers human, social and organizational factors in the design of organizational systems. Realistically, if this became UNISA's focus, substantial investment would be required to expand the capabilities of its learner management system to support a better level of interaction and engagement beyond the capabilities of its current systems. In the development of online learning systems, ICT would need to ensure that the social, technical and organizational aspects of the institution are considered together since each of the sub-unit in the system has a different role which must be in agreement with the other. ICT systems will need to support socio-technical systems that understood how people and technologies interacted. This is because addressing only one or two aspects of the system as going to defuse the potential benefits of the other important aspect. From a faculty perspective, curriculum needed to develop a system that relied more heavily on motivating students to work efficiently in a system with all interrelated aspects, namely people, process and technology. Since the Socio-technological perspective originated from the belief that learning was a social and technical phenomena it could therefore guide the thinking that highlighted the importance of the learner and the technology used as essential in the whole online educational process. A good online pedagogy required an awareness of the opportunity and limitations of the mode of education delivery, while considering all other aspects of the architecture.

Connectivism: The theory of connectivism was characterized by its reflection to a rapidly changing society that was, complex, socially connected, global and mediated by increasing advancements in technology. The institutional faculty needed to create system and platforms that supported the distributed creation of knowledge. This could involve being party in the creation and use of learning environments, such as mass open online courses (MOOCs) and open education resources (OERs), in which connections could be established into broader communities of knowledge (Siemens, 2004; Downes, 2006 & 2007). The core skill for the students would become the ability to see connections between information sources and to maintain those connections in order to facilitate continual learning. The best practice in this environment would be the ability to select relevant information and knowing where to find the information. Being educated would then become the ability to recognize and utilize connections. The main advantage of connectivism was its ability to integrate with other theories of learning such as chaos, network, complexity and self-organization, and its alignment with theories from other fields such as psychology and sociology.

The Decision

About 62% of all learning technology initiatives in universities were underperforming. Therefore, universities had to devise strategies for informing leadership and management to improve these outcomes (Van Buren & Sloman, 2003). Many factors could contribute to an institution's success in e-learning, but all would likely depend upon the readiness of its leaders to take up the new challenge. The question was therefore "Which theory and guidelines should leaders and managers of e-learning adopt in order to ensure their readiness in respect of e-learning environments?"

Biography

Antonia Makina is currently an Education Consultant in the Directorate: Curriculum and Learning Development at the University of South Africa. Passionate about research, she has attended and presented papers at many national and international conferences in higher education in mathematics and statistics education, e-learning and education support technologies in Open Distance Learning. She is a transformational and authentic leader who tries to inspire colleagues to rally around a joint vision for the curriculum.

References

Andersen, D. (1988), Chaos in system dynamic models, *System Dynamics Review, 4*, pp. 3-13.

Barabási, A. L., (2002*) Linked: The New Science of Networks*, Cambridge, MA, and Perseus Publishing.

Bates, A. W. (1997) *Technology, Open Learning and Distance Education*. London: Routledge.

COL (Commonwealth of Learning) (2007). Institutional trail quality audit of the University of South Africa. Retrieved from http://www.col.org/SiteCollectionDocuments/UnisaTrialAudit_web.pdf (Accessed 3 August 2011).

Downes, S. (2006). *Learning networks and connective knowledge. Instructional Technology Forum*: Paper92. Retrieved from Ret Paper92.it.coe.uga.edu/itforum/paper92/paper92.html

Downes, S (2007, February 6). Msg. 2, Re: What Connectivism Is. Online Connectivism Conference: University of Manitoba. Retrieved from http://ltc.umanitoba.ca/moodle/mod/forum/discuss.php?d=12

Eason K. (2007) Local sociotechnical system development in the NHS national programme for information technology, *Journal of Information Technology*, 22, 3p, pp. 257-264.

Eraut M (2004) Transfer of Knowledge between Education and Workplace Settings. In: Rainbird, Helen, Fuller, Alison and Munro, Anne (eds.) *Workplace Learning in Context*. Routledge, London & NY, pp. 201-221. ISBN 978-0415316316

Galbraith, P (2004). Organisational leadership and chaos theory: Let's be careful, *Journal of Educational Administration*, 42(1), pp. 9-28. Retrieved from https://doi.org/10.1108/09578230410517440

Jonassen, D. H. (1991). Objectivism versus constructivism: do we need a new philosophical paradigm? *Educational Technology Research and Development*, 39(3), pp. 5-14. Retrieved from http://www.aacu.org/issues/liberaleducation/cronon.cfm

Keramida, M. (2016). Use eLearning To Revolutionize Change Management

Kop, R. and Hill, A. (2008). Connectivism: Learning theory of the future or vestige of the past? *International Review of Research in Open and Distance Learning, 9(3),* pp. 1-13.

Latchem, C. and Hanna, D.E. (2002). Leadership for open and flexible learning. *Open Learning: The Journal of Open and Distance Learning*, 17(3), pp. 203-215. Retrieved from https://doi.org/10.1080/0268051022000048219

Lehman, L. (2010). *Collagogy and social learning theory*. Retrieved from http://blogs.corpu.com/2010/05/18/collagogy-and-social-learning-theory/

Livingstone, S. (2002). *Young people and new media: Childhood and the Changing Media Environment* Sage, London. ISBN 0761964665

Peters, O. (2001) *Learning and Teaching in Distance Education: Pedagogical Analyses and Interpretations from an International Perspective* (2nd Ed.) Routledge. London & New York

Siemens, G. (2004). *Connectivism: A learning theory for the digital age*. Retrieved from http://www.elearnspace.org/articles/connectivism.htm

Stephenson, K. (2004). *What Knowledge Tears Apart, Networks Make Whole.* Retrieved from http://www.netform.com/html/icf.pdf.

Uhl-Bien, M. and Marion, R (2009) Complexity Leadership in Bureaucratic Forms of Organizing: A Meso Model Management Department Faculty Publications, *Leadership Q*, 20, pp. 631-650.

UNISA. (2009). Unisa: HEQC Progress Report. Transforming academic & institutional identity for excellence in an ODL University. September 2011.

UNISA. (2016). Self-evaluation portfolio for the HEQC institutional audit: Transforming academic and institutional identity for excellence in an ODL University.

Vambe, M.T. (2005). Opening and transforming South Africa education. *Open Learning: The Journal of Open and Distance Learning*, 20(3), pp. 285-294. https://doi.org/10.1080/02680510500298816

Exhibit 1: Theories and Guiding Principles of Different Models

Theory/guiding principle	Constitutive elements
The socio-technical premise	• the mutual constitution of people and technologies and, specifically, digital technologies • the contextual embeddedness of this mutuality • the importance of collective action (joint optimization) Orlikowski, 2000
Social Constructivism	• learners build their own mental structures • acknowledgement of personal and previous experiences • social dimensions of learning when interacting with an environment • assimilative and collaborative nature of learning • physical construction of a tangible product or an artefact
Collagogy	• social learning process environment. • social/networked/collaborative learning • informal, as-needed, just-in-time learning • social learning, communities and transactions
Connectivism	• learning and knowledge require diversity of opinions • learning is a network formation process of connecting specialised nodes or information sources • knowledge rests in networks • knowledge may reside in non-human appliances and learning is enabled/facilitated by technology • capacity to know more is more critical than what is currently known • learning and knowing are constant, on going processes (not end state or products) • ability to see connections and recognise patterns • making sense between fields, ideas and concepts • currency (accurate, up-to-date knowledge • decision-making is learning (LaaN view) • knowledge and learning are two sides of the same coin • knowledge and learning are personal and social in nature • knowledge is in the network • learning is a matter of knowledge networking within knowledge ecologies.

Chaos	• breakdown of predictability (the future cannot be envisioned as it is unpredictable) • the future depends on chance • systems are within stability and disintegration (everything may change or break) • recognizes the connection of everything to everything • there is order in all disorder (a cryptic form of order) • recognize the ordering of patterns in the disorder to find meaning in the knowledge. • meaning-making and connections between specialized and unique communities • recognition of hidden patterns