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FACULTY-PERCEIVED CONSTRAINTS TOWARDS EMBRACING TRANSFORMATIVE eLEARNING TECHNOLOGIES AT A SOUTH AFRICAN TERTIARY INSTITUTION

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—Abstract —

This paper examines the constraints that derail the intensive uptake of eLearning programmes in a particular higher education institution. The study adopted an inductive research paradigm that followed a qualitative research strategy. Data were collected by means of one-on-one in-depth interviews from selected faculty members at a nominated institution of higher learning. Data were iteratively and reflexively analysed, leading to the emergence of four themes. Notably, the scepticism towards the implementation of transformative eLearning was ascribed to complex initiation procedures, inadequate training and support, an incoherent e-policy at the institution as well as resistance to change. In lieu of this, the paper advocates for the incremental adoption of fully-fledged eLearning strategies and policies among academic institutions as well as the effusive use of blended learning approaches. Thus, as opposed to merely enabling academic faculty to refine their teaching, eLearning strategies could possibly alter the manner in which faculty members conduct their teaching and assessment activities.

Key Words: eLearning, implementation, transformative.

JEL Classification: I23.

1. INTRODUCTION

If current university structures have to embrace innovative teaching and learning strategies, they must be flexible enough to adapt to the contemporary teaching and learning approaches. Without such flexibility, students' entrance to the worldwide knowledge repositories could be impeded. Within the same vein, an array of transformational enablers exists to provide academics with adequate motivation for re-thinking curricula. These may include among others; globalisation, commercialisation and internationalisation of higher education (Zakaria, Janjua & Fida, 2016); the inevitable shift from product based economies to knowledge based economies together with the changing student profiles and learning styles (Engelbrecht, 2003). The discussion is no longer about whether to introduce digital technologies into mainstream teaching and learning but rather, how to use the technology and skills students already have to create meaningful learning experiences (Ng'ambi, Brown, Bozalek, Gachago & Wood, 2016). Similarly, Garrison and Kanuka (2004) maintain that curriculum transformations that cater for emerging technologies play a pivotal role in the global competitiveness of universities. Consistent with this view is the evident phenomenal growth in the integrated usage of information communication technologies (ICTs) in South African higher education institutions (HEIs). This is because the 'traditional' lecture is no longer an appealing product to the digital natives who are leading a 'wired,' anytime, anywhere lifestyle (Czerniewicz & Brown, 2009). Relatedly, universities' competitiveness in the global higher education market will be dependent on their flexibility and ability to embrace and make use of current technological advancements to change educational and business practices. The precarious position of many HEIs is the struggle to wade off the threat of being 'left behind' by their competitors. Likewise, in the business world, new entrants continue to give innovative solutions at low cost as the markets continue to expand. This makes it difficult for the 'static' or 'complacent' higher education providers to compete (Mapuva, 2009). At the primary level, the emphasis on the part of higher education institutions is to create a learning experience that prepares the higher education student to function in the global world. Secondarily, students and academic faculty are encouraged to contribute meaningfully to the digitally connected global work environment.

Keegan (2003:1) defines electronic learning (henceforth referred to as eLearning) as the "provision of education or training electronically through the Internet"

whereas Koohang and Harman (2005) portray eLearning as a confluence between Internet interfaces and software developments that produces education and learning that is ubiquitous and engaging. However, these definitions are only limited to the Internet's ability to alter the cognitive abilities of users. Other scholars argue that real learning is an activity that changes the individual's perceptions and attitudes whilst simultaneously empowering them with both cognitive and physical skills (Rekkedal & Qvist Eriksen, 2003). In this study, the authors conceptualise eLearning as all forms of authentic web-enabled teaching and learning that actively engages students in the process of knowledge construction. eLearning has been adopted in South Africa as an inevitable advancement in spite of the plethora of challenges that are consequential toward its adoption by the learner, the academic, the web developer and university management (Ravjee, 2007). This study focuses on eLearning challenges presented to full-time academics at a South African University of Technology (UoT).

2. LITERATURE REVIEW

2.1 eLearning in the field of applied sciences and technology disciplines

eLearning allows for collaborative activities in disciplines that rely on practical application as a demonstration of learning. Literature on the prominent pedagogical underpinnings of applied sciences and technology education denotes the use of social constructivism (Fransen, Weinberger & Kirschner, 2013), interactive lecturing and modelling and simulation (Saraswat, Anderson & Chircu, 2014). In addition, problem-based learning is viewed as a viable pedagogical approach in applied sciences and technology education practice. While there are other pedagogical approaches that may be used in teaching applied sciences and technology education, the focus of this paper is on the prominent approaches mentioned in this paper.

2.2 Interactive lecturing

Interactive lectures include a strong element of interaction on multiple levels. Interaction may be between the facilitator and the students, interaction between the students themselves, as well as student interaction with learning resources, which may be facilitated through eLearning platforms. In an eLearning environment, lectures may be offered via synchronous means through video conferencing and

interaction can be facilitated using synchronous online discussions. Supportive resources may also be accessed on the internet to supplement the lecture.

2.3 Problem based learning

Problem-based learning is a learning approach in which students are expected to work (in teams), harnessing a variety of resources to solve a specific problem. Problem-based learning calls for teamwork, creativity and meta-cognition (Kumar & Natarajan, 2007). In the eLearning environment, problem-based learning may be facilitated through eLearning using applications that allow for interaction and social constructivism. Social constructivism views learning as occurring because of the social process of knowledge construction. In the realm of eLearning, social constructivism may occur through the social learning enabled applications such as blogs, discussion forums and/or wikis. These tools allow for social learning and collaboration beyond geographical boundaries.

2.4 Modelling and simulation

A number of applied sciences require authentic practice and application, which can be expensive, impractical and even risky. Modelling and simulation could be presented using controlled eLearning platforms. As technology advances, simulated and virtual learning contexts could be harnessed to develop skills required in real life situations. These modelling techniques and simulations are available as cloud-based computing; four-dimensional (4D) computer-aided design as well as geometric software.

3. MOTIVATION FOR THE STUDY

In its Draft White Paper on E-education in South Africa (2003:44), the Department of Education recommended that innovative teaching and learning in the form of eLearning becomes a “mainstream activity” among HEIs. This recommendation is consistent with the department’s (2015) development strategy of attaining the millennium goal of inclusivity through the “education for all by 2020” plan. Regardless of these evident plans and policies, Salmon (2005) notes that implementation of real eLearning beyond HEI initiated projects has so far been modest. Some institutions still strive to bring aboard the majority of students and

staff onto the eLearning podium. Notwithstanding this fact, the scant technology champions who already exist are rarely appropriately guided towards the use of educational innovation. Furthermore, they are not amply motivated to effect comprehensive changes through eLearning.

The reasons why academics shun the use of eLearning is worthy of investigation. This study is therefore, structured to find out the constraints towards embracing eLearning by considering the experiences of academic staff at a tertiary institution in South Africa. The authors are of the view that consultations with the academics will assist in determining the intervening variables that influence non-adoption decisions with a view to condense these constructs whilst developing a framework for eLearning inhibitors within the contextual setting of the university.

4. RESEARCH DESIGN

In accordance with Henning, Van Rensburg and Smit (2004), a qualitative, interpretive research design was adopted for the study with a view to solicit detailed information to explain the constraints to eLearning. The authors envisage that this type of information would expand knowledge and understanding beyond what is already known, consequently proffering a detailed account of the experiences of academics and providing clear explanations of the reasoning behind the decisions not to adopt eLearning in spite of its numerous advantages.

4.1 Sample participants

The purposive sampling method was used to select the participants for inclusion in this study. The process commenced with identification of a single participant. More respondents were further traced through the snowballing technique, ensuring that only participants with the required information were included in the sample. New participants were continually brought into the study until after ten participants, where no new information was being added. This signified completeness or saturation of the data (Charmaz, 2003; Groenewald, 2004; Henning *et al.*, 2004).

4.2 Data collection process

Semi-structured interviews were used to collect research-specific data. The process of the qualitative interviews entailed preparing the interview-guide based on the research questions, familiarising with the interviewees, the actual interview sessions and audio recording of the interviews. The interviews were conceptualised as planned social interactions between equals (interviewer-interviewee). This created a sense of relaxation and trust between the interviewee and the participants; enabling the latter to provide the best narration of their experience, thoughts and feelings with regard to eLearning constraints. The interviews were documented through audio-recordings and notes for further analysis. The field notes were used as part of the data. The field notes were also used as a measure of triangulation, whereby interviewees' facial expressions and easiness (or uneasiness) during the course of the interview sessions were captured. In view of discerning any contradiction between what the participants had said and the non-verbal signals, exhibited characteristics were collated with the responses and reconciled. The notes were also made use of during the coding process. In line with Charmaz's (2003) recommendation, the notes were used to document the products of coding, examine the codes further, establish and ascertain how the different categories were related and further explore emergent gaps in the formed categories

5. DATA ANALYSIS

Data were iteratively and reflexively analysed (Srivastava & Hopwood, 2009). Collected data were organised and re-arranged following the procedures of a qualitative investigation, as suggested by Henning *et al.* (2004) and Ezzy (2010). The audio-recorded interviews were transcribed verbatim. The researchers listened to each audio-taped interview, read and re-read the transcripts several times, line by line; ensuring familiarity with the data and further determining data quality (Holliday, 2007). Moreover, constant reference was made to the research questions in order to keep the analysis focused. The data were then compiled, labeled, separated and organised through a process called coding.

5.1 Credibility

Maritz and Visagie (2010) indicated that research credibility is about truth-value and truth in reality. This study provides a comprehensible and justifiable connection

linking each phase of the research from the data collection process right through to the reporting of findings. The authors make further attempts to present information coherently, while interpreting it in light of the empirical findings and eluding any personal assumptions and pre-conceived ideas that would possibly influence the outcomes the research.

5.2 Ethical considerations

Ethical clearance was obtained through the Ethical Research committee of the UoT under whose auspices the study was conducted. Participation in the study was voluntary and the respondents were free to withdraw at any stage without victimisation. None withdrew, however. Informed consent was attained by revealing the purpose of the investigation to all participants in writing and verbally. Assurance was given to participants that their names would remain anonymous and the collected data would not be used for any other purposes other than to advance scholarly research and enhance scientific findings in the field.

6. RESULTS AND DISCUSSION

Data were collected from ten participants' code named R_1 to R_{10}. The respondents' revealed that adopting ICTs within HEIs was unavoidable. This was based on their observation that digital communication and information models are the preferred methods of preserving, retrieving and distributing information. However, the academics' voices were beset with undertones of under-preparedness with regard to teaching within a blended learning domain, whereas eLearning platforms are used without the basic facilitating conditions. From the interviews, it emerged that the process of access registration at the institution was a cumbersome exercise, which was short of buy-in from staff members *(complex initiation procedures).* It also emerged that a de-motivator towards eLearning adoption was a technologically illiterate academic populace *(Inadequate training and support).* Additionally, the interviewees indicated that there were many cases when the academics themselves were unable to make use of eLearning since there was no clear e-policy to that effect (*incoherent e-policy*). Resultantly, a majority of the academics opted to remain attached to the traditional way of teaching *(resistance to change).* The ensuing themes are elaborated on in the ensuing subsections.

6.1 Theme 1: Complex initiation procedures

Complex initiation procedures were cited as a big deterrent towards the implementation of eLearning at the institution. The respondents indicated that not all staff members were able to use eLearning without going through a cumbersome and time-consuming registration procedure. While the faculty members were reluctant to go through the lengthy eLearning registration process, those who were already registered were discouraged from using the system due to lack of IT support coupled with the scantily available e-support material (Childs, Blenkinsopp & Walton, 2005). To exacerbate the eLearning implementation problem even further, registering the students online did not always happen timeously and academics would be unable to access learning materials until mid-semester every academic year. The participants' concerns were aptly captured in the words of R_5 when she stated that:

"…there are tedious registration problems before an academic can obtain access rights on the LMS [learning management system]… as a lecturer I feel that I have limited accessibility rights on the LMS"… [and]… "some students may be omitted from the e-platform if there is incongruence between the institution's online system and student enrolment services."

A majority of the respondents further voiced their concern with regard to the lack of collaboration between the academics and the online enrolment services personnel. Noble (2002) suggests that departmental synergies and university buy-in are necessary in order to ensure that both learners and staff members are enrolled on the online platform and obtain un-interrupted access to the LMS. Though research has proved the importance of top-down strategies in the implementation of eLearning, such strategy implementation requires the buy-in and engagement of academic staff (Cummings *et al.*, 2005). For wider adoption, there is also need for the support of senior management, among other stakeholders. In this vein, academic staff as subject matter experts could potentially shun the implementation of eLearning if they were to be left out in the process of implementation. These sentiments were strongly captured by participants R_3 and echoed by R9:

*"……I am comfortable with m*y (traditional) *way of teaching"*

"I would not want to move from one teaching method to another because the face to face contact is working very well for me."

6.2 Theme 2: Inadequate training and support

Schuler and Jackson (2006) point out the importance of training and development as major tools to ensure successful acquisition of the relevant skills and knowledge to implement eLearning. Nevertheless, for training and development to be effective academic faculty should also be motivated to learn. Indeed, Volery (2000) observes that technical proficiency (on its own) is not of great value unless the academics are encouraged and internally motivated to use eLearning. Some of the respondents admitted that they possessed limited knowledge about eLearning and its contribution. This was a very interesting finding for the study since eLearning aptitude plays a fundamental role towards providing the impetus for academics to utilise eLearning in their teaching practise (Meyer, 2001). Suffice to say; the academics who had computer proficiency demonstrated greater confidence and perceived ease of eLearning use. On the contrary, respondents who had minimal skills were reluctant to use eLearning as highlighted by R_{10}:

"I am expected to use online learning tools and yet I have not been trained on what the eLearning platform can help me to achieve in terms of teaching and assessment".

This finding is in line with Rekkedal and Qvist Eriksen's (2003) assertion that lack of skills and IT competencies significantly contribute towards the non-adoption of eLearning. According to Charlesworth (2002), academic faculty are neither resistant to training nor to the use of technology in their teaching. On the contrary, the entire process is obfuscated by a lack of training regarding the implementation and incorporation of technology in their daily teaching. Such perceptions inadvertently become impediments in the process of implementing an innovation, causing problems in perception, application and technology usage (Volery, 2000). Training of staff should therefore, be used as an invaluable motivational tool for augmenting the confidence of academics towards various eLearning initiatives. It is indeed against this backdrop that Shapiro (2000) advocates for proficient training that should include both technical and conceptual issues. Relatedly, Macpherson *et*

al. (2005) observe that appropriate skills and ability to use eLearning platforms generates increased user' satisfaction. Such satisfaction is closely connected to active participation and devotion to the innovation. Thus, if lecturers do not realise the importance of a particular technology and its contribution towards the achievement of teaching goals, they are likely to be deprived of any commitment towards using the technology, rendering it impossible to integrate the technology into teaching practise (Meyer, 2001).

6.3 Theme 3: Incoherent e-policy

Mapuva (2009) discusses the absence of institutional leadership that channels the modus operandi of HEIs towards the fruitful adoption of eLearning. In this regard, the successful implementation and use of the technology is dependent upon created institutional structures that are designed to improve the effectiveness of pedagogical methods to disseminate educational material through technological innovations. E-policy documents usually act as indispensable tools through which institutions can avoid a laissez-faire proliferation of eLearning (Czerniewicz & Brown 2009). These documents range from systematic teaching and assessment e-documents, strategic documents, e-quality assurance documents and manuals that guide university processes towards uptake of ICTs (Department of Education, 2015). The institution under review is currently in the process of establishing eLearning policy documents for the first time since its re-organisation from a former technikon to a university in 2004.

The need to appoint faculty-based eLearning managers dedicated at tailoring the eLearning packages to discipline-specific needs was emphasised. The university is currently pursuing a strategic mission that integrates ICT usage in teaching and assessment but does not necessarily have core institutional polices on ICT usage or appointed faculty-based eLearning managers. Some participants have highlighted that this apparent absence of frameworks governing the use of eLearning has often acted as an impediment towards the adoption of eLearning technologies by academics at the university. Moreover, some academics are of the opinion that the decision by management to exclude them from the policy development process leads to a contestation of ideas, seemingly contrary to the adherence to eLearning (Sesemane, 2008). Academics feel that they are being coerced to implement eLearning owing to commands from management, rather than facilitator or learner

progression. Resultantly, academic faculty implement flawed pedagogical practises upon servicing the eLearning technology (O'Neill, Singh & O'Donoghue, 2004). This has left staff sceptical about the likelihood not only of successful implementation of the innovation, but also of realising teaching and learning objectives. The absence of e-policies and the corresponding exclusion of staff members from the development thereof; have almost certainly resulted in the unplanned and *ad hoc*, fragmented and uncoordinated adoption of eLearning at the institution. In line with this notion, the frustration of respondents were captured in R_7's responses which epitomised the rest of the respondents' views. The respondent stated thus:

"Students and staff members are thirsty for eLearning but the haphazard (lack of e-policy) implementation and support structures are a problem"… [and]… "I wish we could have a dedicated eLearning manager to help us within our faculty."

6.4 Theme 4: Resistance to change

Several academics seemed to have a negative attitude towards eLearning. Whilst some felt comfortable using traditional ways of teaching, others felt that it was time consuming and cumbersome to learn new ways and methods of teaching. This resistance to the uptake of innovative teaching methods was mostly noted among academics who lionised the traditional teaching methods. Giving his reasons for not embracing eLearning, R10's response epitomised the responses of all those who did no readily embrace eLearning technologies, stating that:

"I feel comfortable with the way I teach. I need to be in class and physically face my students other than posting assignments on the eLearning platform".

7. RECOMMENDATIONS AND FUTURE RESEARCH AVENUES

Against the findings of this study, it is recommended that institutional leadership be directly driven towards eLearning solutions and where possible, support blended learning strategies, e-skills training and development in order to empower academics. In this vein, there is need to launch eLearning awareness programs. Such programmes should be implemented in line with management driven e-quality assurance strategies. Care and caution should be exercised upon developing

institutional policies that recommend eLearning interventions. It is also the authors' view that IT support personnel can play an important role towards the development of eLearning. This can be done when they render support to academic faculty as and when it is required. Ultimately, synergy among content, pedagogy and technology is fundamental prior to the complete integration of eLearning across the applied sciences curriculum. Future studies can identify the importance of institutional leadership as a key driver towards eLearning uptake by academic staff. In this respect, the focus of institutional policies falls squarely on the circumstances upon which eLearning can be utilised, with consideration for the needs of both academics and students alike.

8. CONCLUSION

This paper explored the eLearning adoption constraints faced by academics at a university. While it is envisaged that successful adoption of eLearning will transform teaching and learning to meet the increasing demands for change and modernisation in higher education, faculty members alluded to a number of factors that impede technology adoption. Primarily, the stated barriers include inter alia; complex initiation procedures, inadequate teacher training and support, absence of a coherent e-policy in the institution as well as general staff resistance. Based on this, it was recommended that institutional leadership plays a supportive and pro-active role to counter the identified constraints.

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