ADOPTION OF TECHNOLOGY: ATTITUDE OF ACADEMIC STAFF REGARDING ONLINE LEARNING AT UNISA, SCHOOL OF ENVIRONMENTAL SCIENCES

Ms Retha Coetzee and Ms Arina Potgieter, Unisa

coetzr@unisa.ac.za   potgice@unisa.ac.za

University of South Africa, Florida campus

Private Bag X6

Florida

0170

+27 11 471 3437

Abstract

The rapid development, innovation and changes in information communication technology (ICT) have influenced teaching and learning praxis considerably. Research has shown that the adoption, diffusion and sustained use of ICT in teaching and learning are largely dependent on the attitudes of academic staff (Panda & Mishra 2007). The purpose of this study was to examine the attitudes of academic staff towards the adoption of *my*Unisa as an online teaching tool in the School of Environmental Sciences, Unisa. The theoretical foundation for this study is based on Rogers's theory of diffusion of innovation (1983), Davis's technology acceptance model (TAM) and (1985) Marcus's theory of adoption (1986). The research methodology consisted of a survey questionnaire to determine the attitudes of academic staff and a statistical analysis of the tools used on *my*Unisa by academic staff. Results from both quantitative and qualitative data indicate that academic staff have moderately favourable attitudes towards *my*Unisa as a learning management system (LMS). The various teaching functions on *my*Unisa are perceived, adopted and utilised differently by individual staff members. Outcomes from this research should assist administrators by giving a current snapshot of the attitudes and usage patterns of *my*Unisa by academic staff and indicating areas for attention to improve adoption of ICT in teaching and learning.

Key terms: Open distance learning, learning management system, attitude, perception, adoption, diffusion

Proposal

The research was motivated by the recommendations regarding online learning and was accepted by the Unisa Senate Tuition and Learner Support Committee (STLSC) on 31 January 2011 (Prinsloo 2011). These flow from a report by representatives of Unisa, the Academic Planner, Portal and Academic System Design, Institute for Open and Distance Learning (IODL), Directorate for Curriculum and Learning Development

(DCLD) and the Open Distance Learning (ODL) Coordinator after a visit to the University of Leicester during 2010.

- RECOMMENDATION 1: Unisa commits itself to optimise the affordances of technology in enabling blended modes of teaching and learning. As from 2012, all new course materials and revisions of course materials will be designed for e-learning, providing for a variety of blended delivery options. *This is a major shift from current practice in which some print-based materials are then changed to suit electronic learning platforms.*
- RECOMMENDATION 2: Organisational Development (OD) investigates the function, operations and structure of DCLD to realign it with a strategic shift in technology-enabled teaching and learning. In the investigation, the role of other stakeholders such as a newly envisaged "Academy", ICT, IODL and the Photography, Sound and Video Section should be considered. *In all instances efforts should made to ensure that the process is driven by the academic demands and not by technology or the needs of support units.*

The above recommendations have a direct bearing on academic staff who are responsible for new and revised course materials. The successful adoption of these changes in the teaching and learning praxis at Unisa is thus placed in the hands of academic staff and relies heavily on their adoption of new ideas and ICTs.

While there are many studies on the attitudes of academic staff towards distance education (Bashir 1998; Clark 1993; Milheim 2001; Siaciwena 1989), there are relatively few studies on attitudes towards online teaching, particularly at open distance learning institutions in developing countries (Panda & Mishra 2007). The purpose of this study was therefore to examine the attitudes of academic staff towards *my*Unisa as an online teaching tool in the School of Environmental Sciences, Unisa.

The theoretical background is based on the research of Rogers concerning the theory of diffusion of innovation (1962), Davis concerning the technology acceptance model (TAM) and (1985) Marcus concerning the theory of adoption (1986). All of these theories propose that one of the major factors influencing adoption of new ideas and ICTs is attitude.

Rogers's diffusion of innovation model consists of a framework of several theories, including innovation-decision processes, innovativeness and types of adopters, rate of adoption, change agents, attributes of the innovation, communication channels and the diffusion network (Rogers 1995). In the process of forming any particular attitude toward new ICTs, the academic staff member considers the relative advantages, compatibility, complexity, trialability and observability (Rogers 1995).

Davis's TAM explains that the two fundamental determinants of user acceptance of new ICTs is the perceived usefulness and perceived ease of use (Davis 1989).

Marcus's theoretical model of adoption explains that when someone is faced with a new ICT, the person goes through an adoption decision process in which they gather

information, test the technology and then consider whether adoption offers a sufficient improvement to deserve the investment of time and efforts for change (Marcus 1986).

The current study includes both quantitative and qualitative methodologies. The survey questionnaire is based on research conducted by Panda and Mishra (2007) at the Indira Gandhi National Open University in India. The reason for applying this particular questionnaire at Unisa was based on the fact that both universities have similar profiles in terms of open distance learning institutions in developing countries. The study group at Unisa consisted of academic staff from the Departments of Geography and Environmental Sciences. Participants were asked to rate on a 5-point Likert scale (5 - strongly agree, 1 - strongly disagree, 3 – undecided) a set of 26 paired positive and negative attitude statements to determine the extent to which *my*Unisa was perceived by the individual as an effective teaching and learning tool. The questionnaire had a Cronbach's alpha co-efficient of 0.81, indicating high internal consistency of the items (Mishra & Panda, 2007).

Site statistics were collected and analysed for all the modules offered by the School of Environmental Sciences to determine which tools on *my*Unisa were mainly used and to what extent. Further peer discussions will be conducted to gain more insight into the reasons why staff members are using only selective *my*Unisa tools.

Results from both quantitative and qualitative data indicate that academic staff tended to have moderately favourable attitudes toward *my*Unisa as an LMS. The main reasons for negative attitudes were inadequate training of academic staff and the perception of staff that some students may be disadvantaged based on our student profile. The teaching tools on *my*Unisa are also perceived, adopted and utilised differently by individual staff members. For the most part *my*Unisa is only used as a course material repository and for facilitation of communication through announcements and the discussion forum. Very little authentic online teaching is taking place and online assessment is limited to voluntary non-formal assessment.

By giving this current snapshot of attitudes and the usage of *my*Unisa by academic staff within the School of Environmental Sciences, the researchers hope to assist the university in shaping the strategy to facilitate, accelerate and maintain the diffusion process and to avoid inhibitors of the diffusion of ICTs in Unisa.

References

Bashir, TH. 1998. Dangerous liaison: academics' attitude towards open learning in higher education. *Open Learning*, 13(1):43–45.

Clark, T. 1993. Attitudes of higher education faculty toward distance education: a national survey. *American Journal of Distance Education*, 7(2):19–33.

Davis, FD. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly,* 13(3):319–340.

Marcus, J. 1986. Diffusion of innovations and social learning theory: adoption of the context text-processing system at Stanford University. Doctoral dissertation, Stanford University.

Milheim, W. 2001. Faculty and administrative strategies for the effective implementation of distance education. *British Journal of Educational Technology*, 32(5):535–542.

Mishra, S & Panda, S. 2007. Development and factor analysis of an instrument to measure faculty attitude towards e-learning. *Asian Journal of Distance Education*, 5(1):27–33.

Panda, S & Mishra , S. 2007. E-learning in a mega open university: faculty attitude, barriers and motivators, *Educational Media International*, 44(4):323-338.

Prinsloo, P. 2011. ODL Communiqué 47, 9 February 2011 ODL Coordinator, Office of the Vice-Principal: Academic & Research.

Rogers, EM. 1995. *Diffusion of innovations*. 4th ed. New York: Free Press.

Siaciwena, RMC. 1989. Staff attitudes towards distance education at the University of Zambia. *Journal of Distance Education*, 4(2):47–62.