CHALLENGES AND PROSPECTS: ICT-ENHANCED TEACHING AND LEARNING IN THE COLLEGE OF HUMAN SCIENCES (UNISA)

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ABSTRACT

Over the past few years, we have seen the advent of information and communication technologies (ICTs) transforming our conventional understanding of education, more specifically teaching and learning practices. While the introduction of ICTs has brought to the fore many optimistic benefits, such as improved lecturer-student interactions and new models for designing creative and innovative curricula, it also has begun challenging our institutional models and the environment in which we function. This has prompted a reconceptualisation of how we teach in an open distance learning context. Hence, Unisa as an institute has also sought to recontextualise itself within this transitioning environment. This has led to questions regarding the readiness of academics to meet the transitions of this changing context. As part of the exercise to engage with this changing context, the College of Human Sciences conducted a research survey to determine the creative use of ICTs in teaching and learning practices within the college as well as their prospects and challenges. A total of 132 academics participated, representing all departments and schools within the college. This research paper highlights the types of ICTs currently being used in the college, the frequency of use, how they are used in teaching and learning practices, challenges encountered with their integration in teaching and learning, positive and negative contributions arising from such integration, and why certain academics opt not to use ICTs.

Key concepts: Information and communication technologies (ICTs), teaching and learning, learning management systems, social networks, pedagogies, ICT culture

INTRODUCTION

The integration of information and communication technology (ICT)[1] tools in education has been at the forefront of the education sector in recent years. One of the primary applications of ICTs in education, more specifically within the open distance learning (ODL)[2] context, is to support teaching and learning. According to Tuomi (2005), over the next few years, the practices of teaching and learning will undergo fundamental change as universities and colleges respond to global, social, political, technological and learning research trends. This transformation process articulates a duality of change – i.e. conceptually and technologically. Similar sentiments are echoed by Vajargah, Jahani and Azadmanesh (2010) and McAndrew, Taylor and Clow (2010), who concur that this duality in terms of new conceptual models of education and technological revolutions (e.g. e-learning, mobile devices) offer the prospect of transformative change in teaching and learning. In terms of conceptual and technological changes, Treadwell (2005) notes the following transitions: a) *Learning context:* historical context to a more personal context; b) *access to learning:* the traditional 5 days a week to 24/7; c) *learning access:* institution for anyone, any time, anywhere; and d) *teaching approach:* from the traditional "sage on a stage" to a "guide" in knowledge construction.

ICTs also have the potential to foster rich collaborative environments in terms of interactions between students, interactions between staff, collaborative developments of teaching resources, creation of databases and information centres and joint delivery of courses and programmes.[3] For Chickering and Ehrmann (1996) the integration of ICTs in teaching and learning can advocate "good practices" in terms of encouraging active learning, giving prompt feedback, emphasising time-based tasks, communicating high expectations and respecting diverse talents and ways of learning. The application of ICTs in teaching and learning has also enhanced the way we teach in terms of dissemination of knowledge (through videos, podcasts, simulations, etc.), online discussions (through social networks, text-based chat applications, instant messaging, virtual classrooms, etc.) and assessment strategies (e.g. MIT's iLab, e-portfolios).

THE TRANSITIONING TEACHING AND LEARNING ENVIRONMENT AT UNISA

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[1] In the context of this brief, ICT refers to a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information (cf. Blurton 2004).
[2] The Commonwealth of Learning defines ODL as a way of providing learning opportunities that is characterised by the separation of the teacher and learner in time or place, or both time and place; learning that is certified in some way by an institution or agency; the use of a variety of media, including print and electronic; two-way communications that allow learners and tutors to interact; the possibility of occasional face-to-face meetings; and a specialised division of labour in the production and delivery of courses (cf. The Commonwealth of Learning [sa]).
[3] Cf. Rich, Robinson and Bednarz (2000:264-265) for a more elaborate discussion on the use of ICTs in teaching and learning Geography in higher education.

The transitioning of Unisa from correspondence and distance education to an ODL institute saw many changes in the teaching and learning environment. While the current teaching and learning environment aims to be progressive and advance its ODL character, there are still those that cling to teaching and learning practices that belong to the old regime. The greatest challenge in the transitioning process has been how to bring everyone on board and not leave anyone behind. While this transitioning has enjoyed some degree of success in terms of individual lecturers actively engaging with and exploring new ICT terrains to enhance the teaching and learning process (as celebrated in the 2011 Teaching and Learning Festival), it has become clear that a more comprehensive and structured approach is necessary to incorporate the wider academic community. In terms of ICT-enhanced teaching and learning, the ODL Plan (November 2009) clearly articulates that there is a need to develop a conceptual framework and strategy for technology-enhanced teaching, learning and student support.

To address some of these critical concerns and also to keep abreast of the broader ICT advancements, an ODL task team focusing on technology was established. The task team proposed a five-year ICT plan, which aims at mapping the relationship and development between ICT and teaching and learning, to provide a framework for the integration of new technologies and ensure a systematic and systemic approach to integrating, supporting and sustaining technological innovation in teaching and learning.

The focal points of this plan are as follows: [4]

a) *Focus area 1:* Increase, sustain and support affordable, secure, supported and reliable access for students and staff to a range of appropriate technologies and software.
b) *Focus area 2:* Strategically differentiate between available and future technologies, and test and implement the operationalisation of these technologies over a five-year period.
c) *Focus area 3:* Design and develop a change management strategy to support the focal points of this plan.
d) *Focus area 4:* Support the creation and use of open education resources.
e) *Focus area 5:* Contribute to and support the institutional discourse and policy development on the social, ethical, legal and human use of technologies.

Optimising the affordances of technology in teaching and learning at Unisa will serve the following purposes:
a) to equip students with the generic and ICT-specific skills for lifelong learning relevant to making optimal and appropriate use of new technologies for conceptual understanding, personal development and vocational/professional competence
b) to use new technologies to meet the needs and aspirations of current and future students, while maintaining an appropriate balance of teaching media and methods, economies of scale, value for money and impact on increasing

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[4] Cf. *Unisa ICT-enhanced Teaching & Learning Strategy 2011-2015* by P Prinsloo. Information in this section is based on the five-year proposed ICT plan for teaching and learning. It is used in this brief to provide some insight into the transitioning Unisa environment in terms of ICTs in teaching and learning.

the effectiveness of teaching and learning

c) to maintain study options for students who do not have access to new technologies, and where at all possible, to increase their options of obtaining and sustaining their access to new technologies

d) to maintain, support and continuously expand for all modules offered at Unisa, undergraduate and postgraduate, HEQF level – appropriate optimal use of technologies

e) to deliver and use new technologies in such a way as to minimise the investments students have to make for their study while keeping abreast of current developments in technology

f) to keep research on technologies for teaching at the leading edge, finding new ways to exploit the new and imminent technologies in the service of students' learning needs

g) to encourage and support staff and students to use technology in innovative and effective ways in teaching and learning

Two critical concerns emerge in the implementation of this plan:

a) the technology readiness of each <u>college, school, department or subject specialist</u>

b) the appropriateness of choice of technology for the student profile and demographics, the HEQF level of the module, assessment strategies, the skills set and access to technologies of students and the contribution of the choice of technologies to the achievement of module and programme outcomes

THE COLLEGE OF HUMAN SCIENCES IN THIS TRANSITIONING ENVIRONMENT

As part of the ongoing process to engage with this transitioning environment and advance the agenda for the use of ICTs in teaching and learning, the Executive Dean, Prof RMH Moeketsi, commissioned research to be conducted on the state of ICT integration in the teaching and learning practices with the college. This research aimed at highlighting the creative use of ICTs in teaching practices (in both the conventional and unconventional teaching and learning environments), its prospects and challenges[5].

Methodology

The research was conducted between September and December 2011 using an open source online survey tool known as *Kwik Surveys*

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[5] *Conventional* = myUnisa (learning management system); *unconventional* = personal learning environments, such as social networks, etc.

(http://www.kwiksurveys.com). An invitation to complete the survey was sent via the office of the Executive Dean to all school directors and chairs of departments within the college to be forwarded to academic staff members within their respective departments. An invitation was also extended to all academic staff members within the college via Unisa's Intcom service.

The following eight questions formed the basis of the survey:

1. Personal details: name and department (optional)
2. What information and communication technologies (ICTs) are you currently using in your teaching?
3. How often do you use ICTs in your teaching?
4. Briefly explain how you use ICTs in your teaching.
5. What challenges have you encountered in your use of ICTs for teaching?
6. List any positive contributions made by the integration of ICTs in your teaching practices.
7. List any negative contributions made by the integration of ICTs in your teaching practices.
8. If you are currently not using ICTs in your teaching, briefly provide a reason (e.g. lack of skills, resources, and time).

A total of 130 academic staff completed the survey: School of Arts – 59 respondents; School of Humanities – 26 respondents; School of Social Sciences – 28 respondents; anonymous – 17 respondents[6].

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[6] The option to remain "anonymous" was added on the basis that some respondents may not be willing to participate if they were forced to disclose their identity.
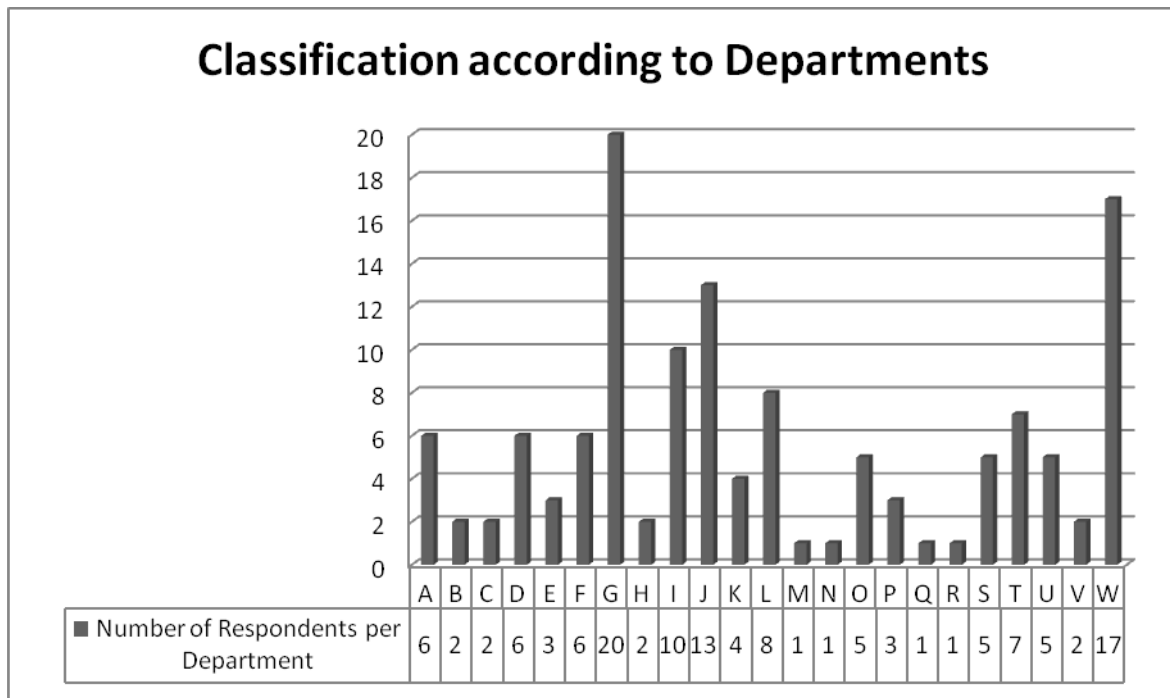
Figure 1: Classification of respondents

Table 1: Classification of respondents per department

	Department Name		Department Name
A	African Languages	M	Linguistics
B	Afrikaans and Theory of Literature	N	New Testament and Early Christian Studies
C	Anthropology and Archaeology	O	Old Testament and Ancient Near Eastern Studies
D	Art History, Visual Arts and Musicology	P	Philosophy and Systematic Theology
E	Christian Spirituality, Church History and Missiology	Q	Political Science
F	Classics and World Languages	R	Practical Theology
G	Communication Science	S	Psychology
H	Development Studies	T	Religious Studies and Arabic
I	English Studies	U	Social Work
J	Health Studies	V	Sociology
K	History	W	Anonymous[7]
L	Information Science		

Results and discussions

1. Types of ICTs and number of users

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[7] The option to remain anonymous was added on the basis that some respondents may not be willing to participate if they were forced to disclose their department.

The types of ICTs varied across the college. MyUnisa had the majority of users with a total of 114. However, many indicated that they supplemented this with other unconventional tools, such as blogs, wikis and social networks. The top five ICT tools excluding myUnisa were DVD (42), social networks (36), YouTube (23), audio and podcasts (22) and open educational resources (20).

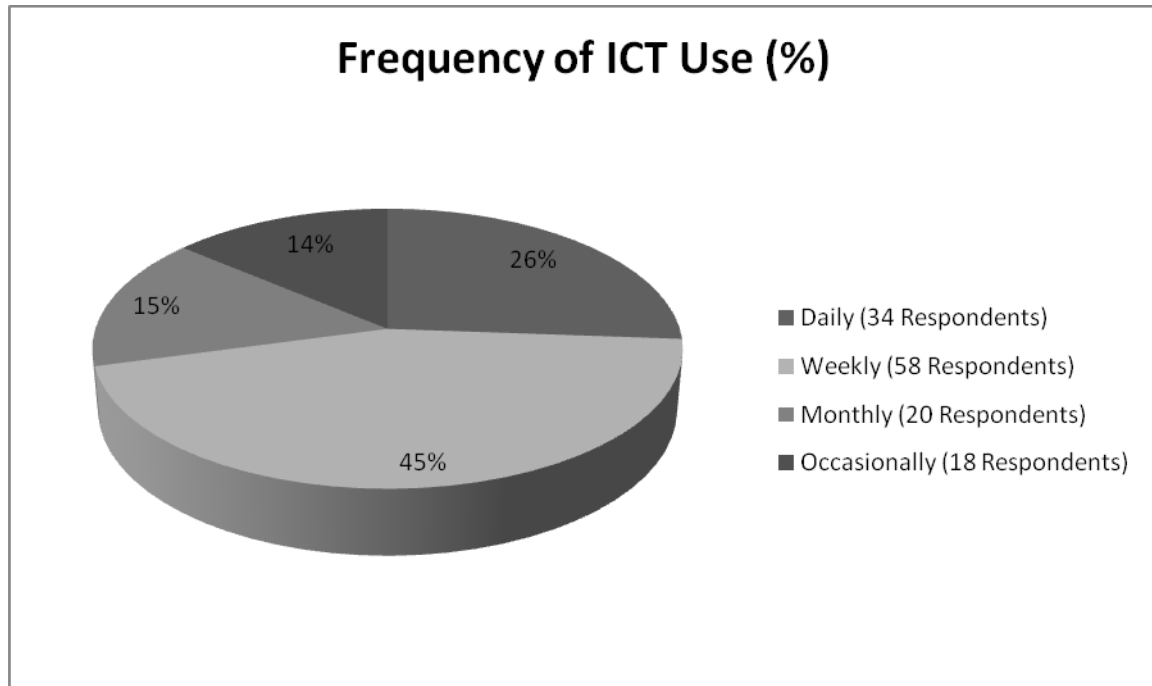2. Frequency of use (cf. figure 2)

Figure 2: Frequency of ICT use

3. Method of ICT integration in teaching and learning practices

This varied, as can be seen from the table graph and table below (cf. figure 3 and table 2).
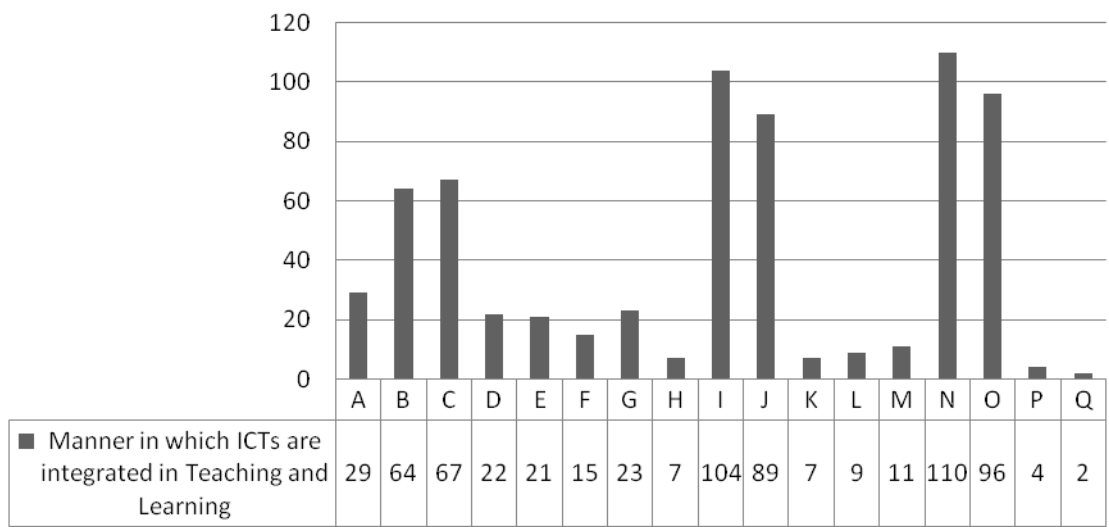
Figure 3: Manner in which ICTs are integrated

Table 2: Manner in which ICTs are integrated

	Manner in which ICTs are integrated in teaching and learning		Manner in which ICTs are integrated in teaching and learning
A	Academic administration	J	Formal tuition materials
B	Additional learning materials	K	Maintaining general presence on myUnisa
C	Additional multimedia support	L	Marketing activities
D	Announcements	M	SMS notifications
E	Assessments	N	Student feedback (content related)
F	Assignment marking tools	O	Student support (general administration)
G	Communication lecturer-student (direct)	P	Supplement discussion classes
H	Discussion classes (video and satellite)	Q	Tutorial group teaching/workshops via VoIP
I	Discussion forums/discussion boards (content and theme-based)		

4. Challenges encountered with the integration of ICTs in teaching and learning practices

This can be grouped into seven key categories:

A – access issues; B - administrative issues; C – ICT culture issues; D - infrastructure issues; E - pedagogical issues; F - policy issues; G - staff development issues
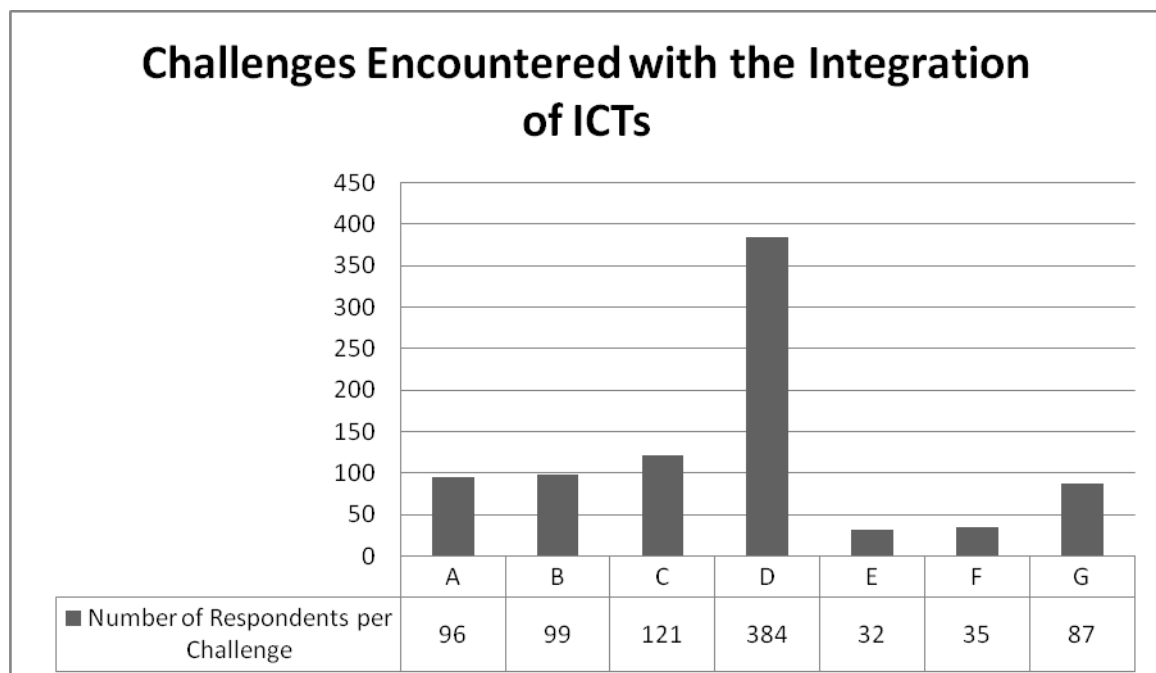

	A	B	C	D	E	F	G
■ Number of Respondents per Challenge	96	99	121	384	32	35	87

5. Positive contributions with the integration of ICTs

Positive Contributions with the Integration of ICTs

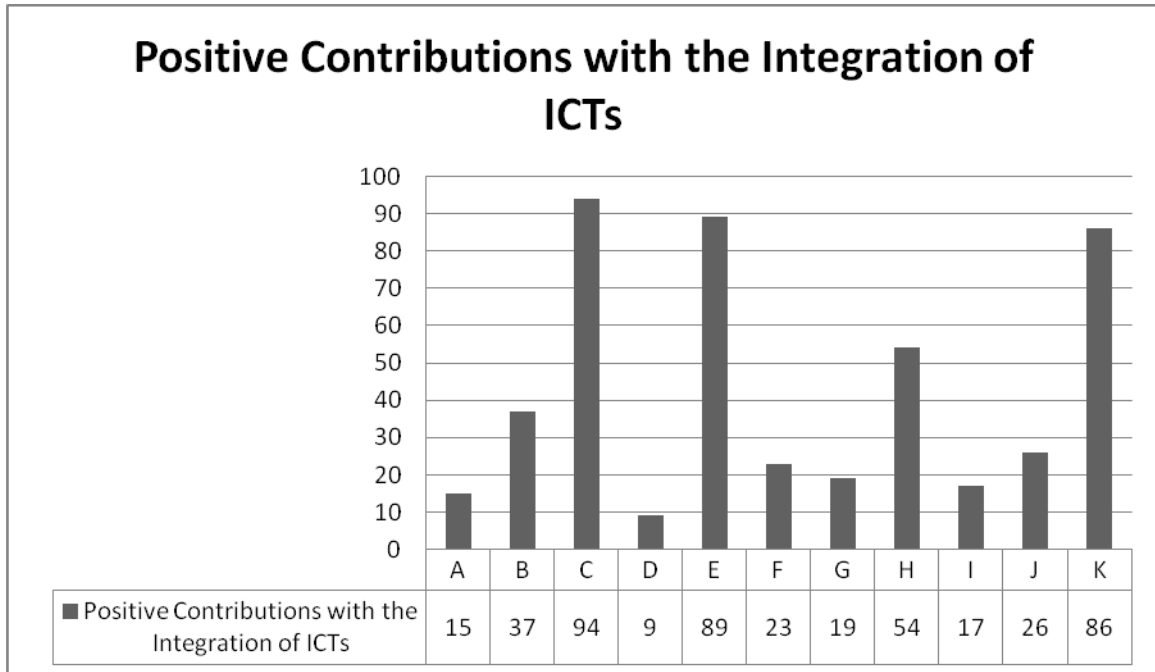|	A	B	C	D	E	F	G	H	I	J	K
Positive Contributions with the Integration of ICTs	15	37	94	9	89	23	19	54	17	26	86

Figure 5: Positive contributions with the integration of ICTs

A: Allows for teaching to varied learning styles
B: Flexibility – work any time and anywhere
C: Improves student access to knowledge
D: Increases pass rates
E: Increases lecturer-student interaction
F: Increases focus on content design
G: Increases profile of academics
H: Increases student participation
I: Increases peer-to-peer support
J: Recreation of the classroom environment
K: Reduces distance and allows asynchronous communication

6. Negative contributions made by the integration of ICTs

While the integration of ICTs in teaching and learning has brought many positive contributions, this research also highlights some of the negative contributions with its integration (specifically within the ODL context at Unisa).

a) 56 respondents indicated that the integration of ICTs in teaching and learning disadvantages students who are already in a disadvantaged position. These students have limited access to the internet as well as technology. Hence, these students cannot participate in or benefit from online activities and it is impossible to record and send all online interactions in print form to these students.

b) 12 respondents indicated that the integration of ICTs loses the human element which is desired by many students as well as lecturers.

c) 16 respondents indicated an increase in cost caused by the integration of ICTs. Students and lecturers experience an added cost. Some respondents added that the university encourages ICT integration at the cost of the lecturer.

d) 9 respondents indicated that the online visibility of lecturers who cannot use ICTs or who are struggling with its use are presenting a poor image of the institution.

e) 12 respondents indicated an increase in concern over intellectual property rights and copyright infringements. The lack of knowledge pertaining to these issues leaves many academics demotivated in the use of ICTs.

f) 19 respondents indicated that the integration of online uncontrolled open spaces has increased criticism of Unisa and academics.

g) 47 respondents indicated that the integration of ICTs in teaching and learning is time consuming. It implies duplication to accommodate students who do not have access (print and online). Secondly, owing to the array of ICT platforms and the low level of student participation in myUnisa, lecturers are finding that they need to duplicate the information on all other social platforms used (such as Facebook, Twitter, etc.).

h) 82 respondents indicated that dysfunctional ICT impedes on teaching and learning progression. The shift in dues dates for online submission of assignments etc. and the closeness of the exam dates in a semester have increased the pressure on lecturers. This also impedes quality of teaching.

i) 15 respondents indicated an increase in workload as student participation increases online. Students demand responses on time.

j) 18 respondents indicated that with the advancement of ICTs, constant training is needed and there is a lack of time.

k) 2 respondents indicated that the integration of ICTs has resulted in technophobia. This is an area that needs to be carefully reflected on. Many academics do experience a sense of fear which is met by overwhelming stress while engaging with the unknown.

7. Reasons for the lack of ICT integration in teaching and learning practices

While only 16 respondents indicated that they did not use ICTs, other respondents not using an array of ICTs also opted to provide feedback. These reasons were centred on the lack of access in terms of internet and relevant technology, lack of faith in ICTs, lack of skills, lack of time owing to work overload, lack of interest owing to stifling policy restrictions and lack of student participation (emphasised by many).

RECOMMENDATIONS AND CONCLUSIONS

Recommendation 1: Acquire additional data from HR
To gain more insight into the level of ICT integration in teaching and learning practices within the college, the following data is needed from HR:

- number of academics in the college (permanent and fixed term)
- number of academics in the three schools
- number of academics in the departments/academic composition of the departments

Recommendation 2: Towards an "unbundled" LMS
Discussions for an "unbundled" LMS (myUnisa) need to be opened, which can be simple and serve merely as a navigating tool to the more common Web 2.0 open platforms. An unbundled LMS implies that instead of having an LMS with built-in social platforms such as blogs, wikis, etc., we develop one which carries out a few essential tasks and "loosely" links together other open platforms such as Facebook, Twitter, etc. An unbundled LMS would be lighter, more flexible, agile and able to integrate with the more utilised ICTs and would operate on multiple (and mobile) platforms. The LMS would then serve as a connector, aggregator and middleware. Rather than overloading the LMS, we diversify communication modes and hence, reduce the overload of myUnisa, thereby overcoming the challenge of losing communication with students when myUnisa is down (for a further discussion on unbundled LMS see http://www.insidehighered.com/blogs/locked-lms-mental-cage).

Recommendation 3: Advance an agenda for the use of mobile learning
The integration of mobile learning in teaching and learning practices within the college needs to be explored. Exploring mobile technology and mobile learning platforms will also address issues of student access. A move towards mobile learning is currently the trend in many higher education institutions. Many of the additional ICT tools currently being used in the college have mobile compatibility (i.e. Facebook, Twitter, YouTube, etc.).

Recommendation 4: Explore pedagogical approaches
With the integration of ICTs in teaching and learning and the exploration of mobile learning, there is a need to explore new creative pedagogies of integrating ICTs in teaching and learning.

Recommendation 5: Revisit ICT policy on VoIP tools
Skype features prominently as a tool for communication with students. Many postgraduate supervisors have indicated that they use Skype (in their personal capacity at home and at their own cost) to communicate with students. Revisiting the Skype policy would imply making hardware such as webcams, microphones and speakers available. The promotion of the e-tutor system adds to the current recommendation to revisit the ICT policy on Skype.

Recommendation 6: Explore open source software for podcasting and vodcasting
We need to investigate the possibility of integrating more open source software for lecturers to create podcasts as well as vodcasts at their desks any time. This will require hardware such as webcams, microphones, speakers, etc.

Recommendation 7: Explore gaming software and virtual worlds
Virtual worlds and gaming software are currently the trend in many international universities such as New York University, London College of Communication,

Harvard University and Brown University. This is currently an area that has limited focus in Unisa. We need to explore this area, more specifically Second Life.

Recommendation 8: Explore new technologies
While the current trend is to use desktops and laptops, we need to explore the integration of more wireless devices such as iPads. However, the costs of these devices are exceptionally high and vary pending on the brand. Hence, we propose exploring more affordable devices such as Netbook PC Tablets, which operate on Google Android OS. These PC Tablets have WiFi capability as well as 3G modem compatibility. They have the same appearance as an iPad with similar functions but are sold at a fraction of the price. On average these devices could be purchased from China for under R1 000 (excluding shipping). We can also explore the low-cost iPad made in India which sells for $35 and can be used for functions like word processing, web browsing and video conferencing (see http://www.time.com/time/world/article/0,8599,2097068,00.html).

Recommendation 9: Increase in WiFi zones on Unisa campuses
The increase of WiFi zones on Unisa campuses should be advocated. In being proactive and engaging with wireless devices, we need to increase the number of WiFi zones on Unisa campuses. This will assist with staff and student access.

Recommendation 10: Revisit staff access to internet while on sabbatical
Possible ways need to be considered of granting staff on sabbatical internet access from home. We need to revisit the policy on VPN allocations.

Recommendation 11: Develop an ICT culture (staff and students)
We need to explore possible ways of developing an ICT culture among staff and students. In terms of developing an ICT culture among staff, we should explore the possibility of an exhibition by various IT companies on the new technologies and how they can be used for teaching and learning. Collaborative research papers on ICTs in teaching and learning should be encouraged, and possibly a journal publication could be edited and launched. An online forum could be developed to support staff members and motivate them in the use of ICTs in their teaching practices.

Recommendation 12: Develop customised training
We need to develop training that can be customised for the needs of the staff. These training sessions need to also take into consideration the different levels of ICT use, i.e. beginner or advanced. We should develop an operational plan in which we project to have x number of staff actively engaged in the use of ICTs in teaching and learning within x number of years.

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