

## FACULTY PERCEPTIONS OF ICT BENEFITS

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### Abstract

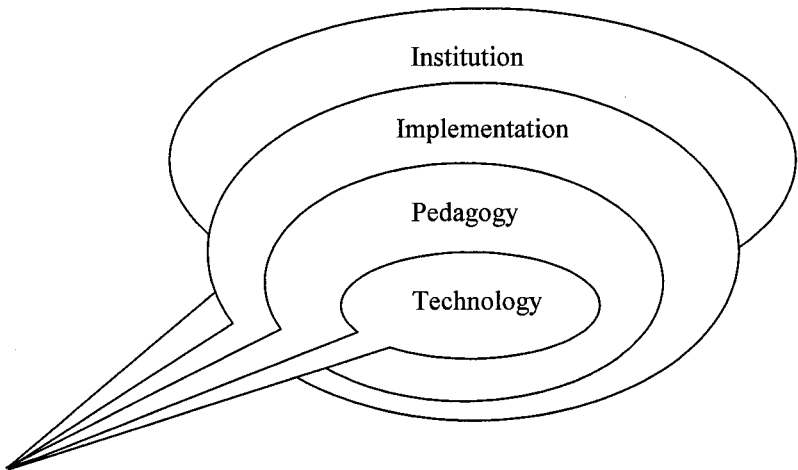
Universities are caught within a time of accelerating political, socio-economic and technological change. The many internal and external pressures on universities have created the need to view teaching and learning patterns and practices from new perspectives to meet the challenges created by knowledge-based societies (Pittinsky, 2003). These pressures include a demand for a greater number of higher education places with no corresponding increase in funding (Phillips, 2005); a larger 'clientele' of learners from a wider variety of backgrounds, with diverse needs, motivations, abilities, learning preferences, time availability and course content requirements (Bates, 2005). There is a demand for more client responsive and flexible courses (Ryan & Stedman, 2002; McInnis & Hartley, 2003) and an imperative to seek alternatives to government funding (HEFCE, 2001). With more technology opportunities there is increasing pressure to use information and communication technologies (ICTs) in teaching and learning (Allen & Seaman, 2004; Challis, Holt, & Rice, 2005). Based on data collected from one university, this paper examines the use of ICT within one faculty, focussing on staff perceptions of how ICTs benefit learning and teaching. The acronym ICT in this paper refers to digital technology, primarily online, which is used to provide e-learning opportunities to supplement or replace conventional face-to-face teaching and learning.

### Introduction

Pressure on higher education from outside as well as inside to incorporate information and communication technologies (ICT) is expected to continue. Society expects graduates to emerge from their university experience with appropriate technology skills and abilities irrespective of the level of importance of such technology to individual disciplines (Bates & Poole, 2003). However, the mere infusion of technology into higher education is unlikely to benefit student learning or the education process as a whole unless it is carefully integrated into the curriculum accompanied by appropriate services, mechanisms and professional development support (Fox, 2003). This paper is based on a small scale study involving interviews with 25 people either working or studying in one faculty. It explores participant's understandings and views about the role ICT should or does play or indeed should *not* play in supporting the education process. A number of findings emerge from the data which form the basis of proposals intended to assist the faculty to optimise the use of technology to support student learning and faculty teaching.

## Research Framework and Methods

The Faculty Development Plan identifies flexible learning and teaching as an important strategy for the Faculty. The institutional model of flexible learning developed by Collis & Moonen (2001) was adopted as a framework for the study. The four perspectives of the model, namely institution, implementation, pedagogy and technology, were used to investigate faculty staff and student attitudes towards ICT and its use. The illustration below (Figure 1) outlines this framework.



**Figure 1: Four components of flexible learning in higher education from Collis & Moonen (2001)**

Collis and Moonen (ibid) argue that successful flexible learning in institutions can only be achieved when various factors across the four perspectives are articulated and integrated. These factors include the need for a clear vision, understanding and implementation strategy for flexible learning and the integration of technology, professional development and the building of shared communities of practice between staff. With the increasing competency and availability of technology in higher education Collis and Moonen propose that an important driving force for pedagogical change is technology and that a key issue in ICT implementation is how to harness its power to enhance teaching and learning. Within these four perspectives this study explored staff and student understandings of and attitudes towards:

1. the Institutional/Faculty Perspective – the key imperatives and challenges in education and the role of ICT in helping to meet the challenges
2. the Implementation Perspective – the strengths and weaknesses of ICT within the Faculty/University; how ICT could help enhance Faculty practices; the degree of importance of embedding ICT and other generic attributes into the curriculum
3. the Pedagogic Perspective – ICT applications used by the participants; changes brought about by ICT in: a) curriculum goals; b) teacher/student roles; c) assessment practices; d) educational materials; e) learning outcome; f) connectedness; and ways ICT might foster quality of learning and stimulate innovative pedagogical practice
4. the Technology Perspective – the strengths and weaknesses of the existing technology support; ICT skills of teachers and students

The general orientation of this research is within the qualitative and interpretive domains. The empirical work undertaken was investigated through a broad *ethnographic* approach. Limitations to this approach need to be acknowledged. As Guba and Lincoln (1981) point out, an *ethnographic* study does not lend itself to producing generalisations. However, this research takes as valid the notion of 'naturalistic generalisms', as described by Stake (1978, p. 8) and that common findings arising from the data would be significant to analyse and report.

### ***Methods***

The 25 interviewees were purposefully sampled and included 20 staff (13 academic, five administrative and two technical staff) and seven students (three full-time undergraduate students from different courses and four part-time postgraduate students). Table 1 identifies the breakdown of the selection of academic departments, teacher use of ICT and professorial staff with significant management responsibilities within the faculty and faculty departments (e.g. departmental heads, the dean and associate deans, and directors of the main degree programs). Table 2 outlines the non-academic staff and student groups interviewed.

**Table 1: Academic staff selection based on a representative metric across different departments, ICT frequency of use, and management responsibilities**

Departments	ICT frequency of use		Faculty Management
	High	Low	
A	3 teachers		1
B		1 teacher	2
C	1 teacher		1
D		1 teacher	1
E			1
F			1

**Table 2: Non-academic staff and student groups**

Senior Admin staff	2
Teaching coordination/ program secretary	3
Students – full-time 2 undergraduate, 1 post graduate	3
Students – part-time All postgraduate	4

### ***The interview process***

Target interviewees (teaching staff) were first contacted by phone and invited to participate in the study. After acceptance, they were sent a formal invitation to participate. Materials forwarded to interviewees included: a Plain Language Statement, outlining the research; a Consent Form to participate, and; a set of interview guidelines and questions. Materials were sent as email attachments before the interviews took place.

Interviews with academic staff were held individually either in their office or in a room of their choice during an interview time negotiated in advance. Interviewees were given an introduction to the research, its purpose, the role of the interviewees in the research, etc, and were invited to ask questions in regard to the study. The interview content was recorded with the consent of the interviewee, and depending on the interviewee's availability, the duration of the interviews ranged from 30 to 90 minutes. Support staff and students were invited to participate in group interviews of two or three people, as we felt that group interviews would promote a more dynamic response. All group interviews covered similar content, and the interview procedures were the same as for

academic staff. At the end of each interview, all interviewees were encouraged to raise questions and concerns relating to ICT within the Faculty. Most interviewees were keen to elaborate on issues raised.

Interview transcriptions were made from the tape recordings and notes taken during the interview. An interview summary was sent via email to each interviewee for their feedback and amendments. Most of the interview summaries were sent out within one week after the interview had taken place, while the interview content was still fresh in interviewees' minds. Most interviewees were satisfied with the summaries, though several (two) made amendments and additions to comments made. In general, all interviewees were happy to continue ongoing post-interview computer-mediated communications over a prolonged period of time, helping to further clarify issues, ideas, experiences and understandings. Only the agreed transcript summaries were analysed.

### ***Difficulties encountered***

Some targeted professorial staff were difficult to contact or too busy to participate; others were initially happy to participate but were too busy to actually take part in the interview process. Substitute interviewees were then purposefully selected. In general, it appeared that teachers who used ICT only very occasionally (self-identified) were more reluctant to participate in the study. This is reflected in the lower participation of teaching staff in the study who made little use of ICT (see Table 1). Student interviewees were difficult to find as the interviews were conducted during preparation time for either assignments or examinations. However, students who were prepared to participate were very keen to express their views about the use of ICT within the Faculty.

The interview semi-structured questions were modified after initial interviews as it became evident that interviewees were unfamiliar with key faculty documents. In particular, teaching staff and some managers were unfamiliar with the bi-annual faculty development planning document. (A factor which in itself was an interesting finding at the beginning of the process of conducting the research. If staff are to use ICTs to enhance flexible learning it would be important for them to be familiar with faculty planning from the outset).

### ***Data analysis***

Cluster analysis was used initially to sort the data from the interviews into groups or themes in order to classify the data into a non *a-priori* hypothesis (Ding, 2001). The cluster analysis helped to identify commonalities in the data without providing an explanation or interpretation of the data. Through this analysis, a number of recurring items arose. These were clustered into 14 categories and then further reduced using K-mean (SPSS) and placed under the four main Collis and Moonen (ibid) perspectives.

### **Findings & Discussions**

Since the model advanced by Collis & Moonen (2001) was used as the framework of this study, the findings are presented from the four perspectives, namely, institution, implementation, pedagogy and technology.

#### ***1. Institutional perspective***

There was some acknowledgement from academic staff of the increasing role technology can play in learning and teaching practices. However, it was also noted that there was no planning for ICT integration into the curriculum either at faculty or university levels. There was no strategic plan for using ICT to enhance the implementation of ICT in the faculty. Senior management, as one professor pointed out, did not have a vision or expertise in using ICT to advance faculty developments. It was felt that this lack of vision, leadership and planning led to confusion, some frustration, and in general, a poor use of ICT. Several interviewees were critical of the faculty's slow response to issues raised by ICT use and especially with reference to flexible learning, the promotion of the Faculty's international status, research quality and partnership networking. One administrator described a pressing need for campus-wide system integration as the various systems adopted by faculties and the university engendered inefficiency, confusion and a major waste of resources. Several interviewees were appreciative of the contribution played by the faculty's technology research and development centre in promoting ICT implementation and integration. The centre was praised for developing a user-friendly web-based learning management system to promote the use of online technology across the faculty. However, the lack of planning and clear implementation management of the learning management system by the faculty had resulted in major problems for both staff and students. There was also criticism of the role played by the

technology research centre from some academics who had misplaced expectations about the centre's role within the faculty. They felt that the centre should offer training programs for all Faculty members on integrating technology into learning and teaching and on improving the administrative systems and processes. This criticism identified a need for clearer planning and dissemination of information about the research centre's role within the Faculty.

## ***2. Implementation perspective***

Interviewees generally indicated more uncertainty than satisfaction while discussing ICT implementation within the Faculty. Two administrators expressed concern over the abuse of technology such as the spamming of emails between staff and the perceived increase in plagiarism amongst students. One teacher expressed doubt over the cost-efficiency and effectiveness value of technology integration saying that the funds saved would employ extra teachers, reducing the workloads of all. Two support staff were concerned that the different systems used in the Faculty and the University increased workloads for both teaching and administrative staff and that academic staff depended too much on the technical and administrative staff for work involving technology. According to three of the seven students interviewed, the way that the web-based technology was used by some teachers to supplement face-to-face classes was not popular among students. In several courses, similar communications activities had kept students busy but not necessarily working effectively on their courses.

## ***3. Pedagogical Perspective***

Interviewees held quite diverse understandings in regard to ICT use in education. Some saw ICT as a teaching aid that could assist in presentation, teaching material dissemination and assessment. Others were wary of technology-supported pedagogic practices adopted in flexible learning and collaborative online learning. There was generally a low expectation for ICT use for pedagogical purposes in the Faculty. There was some recognition of the role of ICT in advancing innovative practice and change, but few teaching staff articulated the potential impact of technology on pedagogy, the curriculum and student learning. Technology mostly was not seen as a lever or stimulus for change by most staff. The infusion of technology into the faculty had not brought about pedagogic innovation on a large scale. Teaching staff, according

to several students, have not applied ICT to enhance their teaching nor their student learning experiences. Some part-time students shared the view that the integration of ICT for teaching and learning was not well demonstrated by Faculty teachers, and that students therefore had not gained a useful model to follow in their own teaching practices. One teacher thought that expertise in using ICTs to promote quality education existed among many teaching staff, but the technical team in the Faculty did not have the pedagogic understanding to support the Faculty and that the lack of professional development opportunities and opportunities for sharing good practices in using ICT were the main reasons for the poor use of technology across the faculty.

#### ***4. Technological Perspective***

Interviewees in general said they were satisfied with the technology resources and basic services provided by the Faculty, but that many ongoing challenges still existed. For example, one technical officer mentioned that there were insufficient resources to upgrade staff ICT knowledge and skills. Several students said the availability of ICT facilities or services were unknown to students and that clear dissemination of information about facilities and services was vital. Part-time students felt that the technical team failed to offer appropriate support for the web-based learning activities through the learning management system.

#### **Conclusion**

This paper has outlined the understandings and views of 25 staff and students about the role of ICT in supporting the education process within one faculty. Emerging from these interviews, a summary of recommendations for the faculty use of ICT is provided under the Collis and Moonen (ibid) perspectives.

*Institutional perspective:* there is a need for the development of a central vision and clear planning and implementation strategies for ICT integration across the Faculty and across the university. This planning should articulate with broader Faculty plans which should be shared, agreed and reviewed by staff on a regular basis to ensure all staff are aware of the direction (and changing directions) the Faculty is following or implementing. As far as possible Faculty plans should also articulate with university planning for technology use.

*Implementation perspective:* the proposed planning needed to ensure effective use of ICT should include indicators or benchmarks to enable the faculty to monitor and where necessary adjust its work to align with changing strategic initiatives.

*Pedagogical perspective:* the Faculty would benefit from providing professional development for all staff (and students) in using ICT to support their teaching and learning. A staff developer with expertise in both technology and pedagogy would be extremely helpful in the ICT training of academic staff. The Faculty needs to encourage teachers and students to share good practices in using technology and establish communities of practice amongst teachers, administrators or students with examples of good and innovative practices using technology.

*Technological perspective:* the lack of technical support due to limited resources could be enhanced by establishing special interest groups and identifying students and staff willing to act as mentors to help the faculty community improve its use of ICT as well as to offer technical support where needed.

This study focussed on a single faculty within one university and the findings should be useful to that faculty. Nevertheless the findings may stimulate similar research in other faculties in determining ICT support for educational purposes.

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