

## ACADEMIC STAFF PERCEPTIONS OF ICT AND ELEARNING A THAI HE CASE STUDY

Dr Paul TJ JAMES, paul.j@bu.ac.th

Senior Lecurer, Graduate School, Bangkok University, Rama 4, Klong-Toey, Bangkok 10110 02 350 3500  
X1619

### ABSTRACT

This paper examines the issues affecting the implementation of eLearning at a university in Bangkok. eLearning and the use of ICT is playing key role in shaping teaching and learning in Thailand. Its implementation is providing innovative and creative opportunities for knowledge development and ICT technology transfer. This paper shows that there will be a need to engage in higher levels of eLearning systems development in order to create an overall integrated ICT vision and eLearning strategy for the university.

The present study draws data from an anonymous questionnaire administered in the International programmes of study at graduate level in a university in Bangkok. There were a total of 22 returns.

The data suggests that eLearning is not widely used at the university as it is perceived as less effective; whereas traditional pedagogic practices as well as being widely used is also perceived as being the most effective method. The theoretical and practical implications of the results are discussed.

Data is drawn from a small number of academic staff and thus further university-wide research is necessary. This paper critically evaluates the practicalities associated with eLearning in a university experiencing significant changes and assesses its potential in addressing useful eLearning developments.

The paper gives a clear insight into the issues surrounding eLearning and addresses some of the implications for longer-term ICT and eLearning developments.

**Keywords**—eLearning, ICT, Lecturer, Strategy.

### INTRODUCTION

This is a study of the issues relating to ICT and its use in influencing the development of eLearning practices in the university sector, Thailand. Much research has been carried on in the area of eLearning which continues to be one of the hottest research topics in higher education today (Chan, Chow, and Jia (2003); as a long-term solution to the issue of *lifelong learning* (Zhang et al., 2004); and is a growing trend internationally (Bates, 2005). Consequently, the perceived rapid growth of the Internet and other developing ICT technologies – product/software and structural - brings a new era of eLearning possibilities to higher education as eLearning developments continue to radically change education (McPherson, 2003a). Internationally, many researchers perceive that eLearning is a technology driven by itself for its own purpose (James, 2008), rather than being viewed as a pedagogical driver (Carnaby, 2005). Further, the “e” in eLearning doesn’t necessarily make learning easier, simpler, more effective or more cost effective than traditional pedagogical methods (Hildebrandt and Teschler, 2006). Thus technology and those managers of universities who control its development and use would appear to be demanding cheaper alternatives to traditional university provision and it is this that firmly rests higher educational strategy at the door of eLearning developments. There are many and varied reasons for this. They include:

- 1 Globalization pressures, with increasing needs for appropriate digital knowledge and pedagogic provision made available across country boundaries
- 2 Online learning distributed both domestically and internationally is seen as critical to the ongoing success of universities (Sax, 2003)
- 3 Increased pressures for ICT access in LDCs (Middlehurst, 2000)
- 4 Increasing demands for life-long learning – especially in MDCs – that create opportunities for universities in LDCs through mostly young mobile students
- 5 Increased opportunities for private universities resulting from government funding reductions and retrenchment of government leadership in higher education systems world-wide

Given the above, universities in Thailand are forced to recognise that there are some serious issues that need to be addressed in the short-term and important challenges that need to be managed in the longer-term. As an

example, the pressures on Thai universities to provide evidence of achieving set course standards and student performances to government and of ensuring that stakeholder money is spent as efficiently and effectively as possible all together exact an influence on educational institutions and possibly explain why many are turning towards managing ‘quality’ in eLearning environments (Gray and Wilcox, 1995).

Short-term concerns facing universities include the options of focusing on eLearning designs and discovering how these can be integrated into the more traditional educational offering in the form of blended learning structures and practices - a combination of traditional classroom and online study (Hanna, 1998; Heinze & Procter, 2004; and Lorenzetti, 2004). However, of increasing concern in the longer-term would be the human elements such as lecturer and administration developments and changes as a consequence of strategic eLearning orientations in Thai universities. Consequently, technology itself could provide a more flexible and much more adaptable approach to eLearning involvement in useful pedagogic developments. Thus, Thai universities have new opportunities, which are directly linked to ICT and any consequent eLearning outcomes. The growth in *virtual* university activities (first established in the mid 1980s), allows traditional universities to expand their reach and increase the flexibility of the educational offering. Through this, blended learning (Hanna, 1998) offers new learning methods and pedagogy, while open source software and courseware facilitate sharing of resources and reduce costly duplication of effort through which information technology has been viewed as a solution to universities’ cost and quality management problems (Selim, 2005). These changes promote the more important learner-centred pedagogy that appear to be deemed appropriate today by many researchers (Harvey & Knight, 1996) and indicate that web-based platforms operate more effectively (Lockyer, Patterson & Harper, 2001). Of increasing interest are Western management and administration developments and changes, which are considered to offer some help for eLearning strategic orientations in Thai universities (Taguma, 2006).

These changes together promote the more engaged learner-centred pedagogy that is deemed appropriate today. However, while the use of ICT across educational institutions has been established, integration into the teaching and learning process has been slow (Harrison *et al*; 2002).

### **QUALITY IN LEARNING**

Since the mid-1980’s public concern about quality in higher education has been increasing (Green, 1994). Pounder (1999) and James (2005) argue that quality is an ambiguous term to define. However, quality is often defined as *fitness for purpose* (Deming, 1986) and relates to the needs of the user/customer; *Fitness for use* (Juran, 1988), which indicates that quality depends upon a subject’s view of what is the purpose of that phenomenon; and a useful view is Crosby’s *conformance to requirements* (Crosby, 1979). However, in higher education the customer is not always easily identified and is easily masked behind a myriad of influences such as parents, students, administrators, teachers, government and employers - to name a few. Quality, thus, is a pervasive value judgement interpreted by different stakeholders whose influence depends on relative power functions. For example, using Juran’s notion of quality would mean that for Thai universities the educational product must fit the purpose of these stakeholders but would be specifically targeted to students and employer requirements. Further, university learning outcomes must be regarded as cost-efficient relative to other types of educational provision and also that it gives a sufficient return on investment, i.e. that the company and the employee is better off not only after the learning change – but also taking into consideration the financial costs and time invested.

Quality management offers a means by which educational organisations can help to positively develop mechanisms surrounding employee participation, lecturer/student satisfaction and, possibly just as importantly, educational competitiveness. It is from this basis that pressures to introduce flexible learning practices appear to have become more prevalent - not specifically to target an enriched learning environment, but to provide a more efficient use of resources. Consequently, interest in these learning practice developments seem to have grown out of this quality management orientation. In this way, quality management may be seen as associated with the drive towards the trend of developing the use of more flexible approaches to the provision of education, and the application of quality management is transforming the ways and methods in which individuals can satisfy their educational needs. This results in more scope for the student, but appears paradoxically, to put more pressure on the educational system to deliver. Quality management practices may be seen as becoming more important in the application of managerial features of operational eLearning requirements of educational institutions and providing more effective eLearning practices and outcomes for both staff and students.

### **QUALITY IN ELEARNING**

According to the European Commission (2001), eLearning is defined as *the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration*. There would appear to be a number of eLearning quality models

developed in the last 10 years. For example, Fry (2000) suggested that eLearning was the *delivery of training and education via networked interactivity and a range of other knowledge collection and distribution technologies*. Ehlers (2004) argues that as learners learn for themselves, then ICT and eLearning is a supportive necessity. Quality in eLearning cannot wholly or uniquely be defined as there are too many parameters affecting the perceptions of its meaning (James, 2005). Consequently, quality practices in Thai universities need to be revised and updated as eLearning developments progress.

#### *Emerging issues in eLearning implementation*

eLearning is another way of teaching and learning as it comprises instructions delivered through all electronic media including the internet, intranets, extranets, satellite broadcasts, audio/video tapes, interactive TV and CD-ROMs (Govindasamy, 2002). It facilitates access to knowledge that is relevant and useful. eLearning involves the delivery of education and training to *anyone, anytime and anywhere*. It is a technology that takes the classroom to geographically distinct and separate environments.

The development and delivery of eLearning is underpinned by a desire to solve appropriate learning, teaching, technology and delivery performance problems. The successful outcome of eLearning depends on how learning is designed to take place online, that is, the underlying pedagogy and the real value of eLearning lies in the ability of educational managers to deploy its useful characteristics to educate the right people to gain the right knowledge and skills at the right time. In this respect, not everyone is suited for good eLearning experiences and any positive outcomes.

The successful implementation of eLearning depends on the adherence to underlying pedagogical principles that are embedded in the eLearning experiences. But as the technology changes, so does the pedagogy. Though these principles apply to both the eLearning and the traditional classroom delivery methods, they are yet to be included effectively within the former (Bixler and Spotts, 2000). These pedagogical principles should form the basis for inclusion of features in eLearning management systems.

The availability of strong institutional support is crucial for eLearning deployment and success (Zhang, 2007). The changing roles of staff must be recognised and acknowledged. Support strategies must be developed for management of the transformation processes. Standards must be set and applied consistently. Although the teaching and learning process encourages a flexible and independent approach to knowledge acquisition, the notion of student support is markedly different from the traditional method. Students learn as a result of interaction with programmed instructional systems that have been long thought out and automated in some instances. Assessment reinforces the learning approach a student adopts and is an indispensable part of teaching and learning. Evaluation and assessment of learning should be based on higher order thinking skills, so that students may adopt a deeper holistic approach to eLearning (Twomey, 1996), rather than a fragmented oscillating perception related to traditional knowledge delivery and development.

Consequently, given the above, the main purpose of this study is to investigate the quality perceptions of lecturing staff affecting eLearning strategy development in a Thai university.

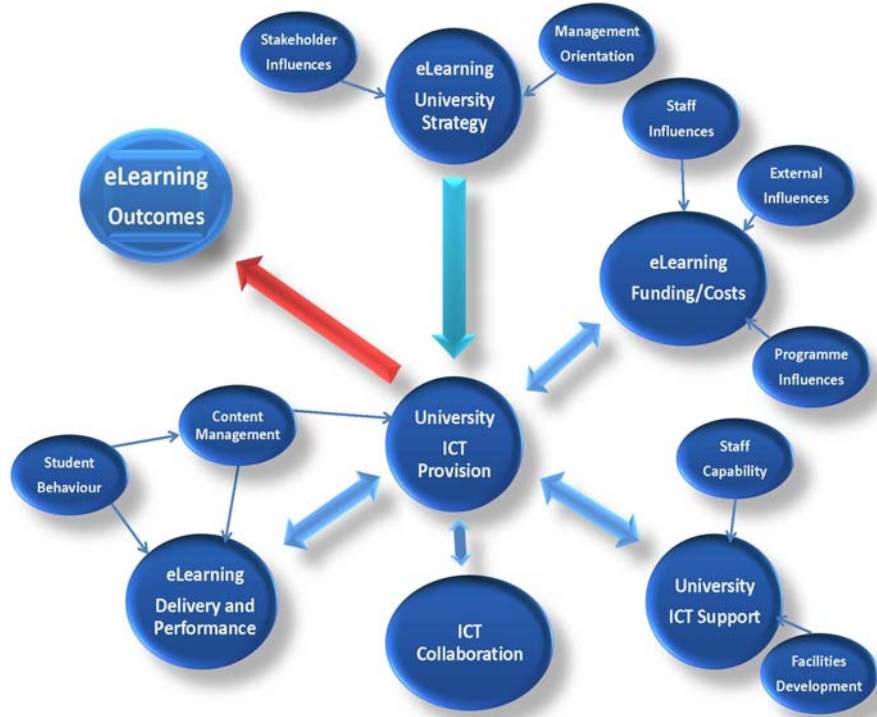
#### **METHODOLOGY**

An on-line synchronous web-based survey using a self-administered questionnaire was used to collect data in this study (Kehoe & Pitkow, 1996). Web-based surveys are becoming increasingly common (Lazar & Preece, 1999) and thus it is anticipated that this method would be accepted by respondents. This follows the work of Sheehan & Hoy (1999) and Weible & Wallace (1998) as ICT provided an inexpensive procedure for conducting online surveys instead of through the postal mail and had the ability to be fast and efficient. The on-line survey was made available over 30 days with pop-up boxes (based on Comley, 2000) for the survey rationale, strategy and process when each staff member logged into their respective university on-line accounts. The target segment was all postgraduate lecturers conducting teaching assignments on all international masters' programmes available in the first semester 2007. The survey was supplemented with data resulting from an assessment of appropriate freely available documents located on the university web-site (in English).

The number of lecturers exposed to the pop-up boxes accounted for 90% of the target segment for the survey – 28/31 in total. Three did not use their university account and were discounted from the survey target. The survey responses (22 – 78.6%) were automatically verified and stored using database technology. Privacy issues were reduced to a minimum as the data collected was not made available except to the researcher and further no individual data stream could be directly interrogated or related back to any individual responding because of secure connection technology and encrypted page responses.

**Framework of the Web-survey**

The outline of the framework for this study is shown in Figure 1 below.



**Figure 1 - Research Framework**

The framework consists of six major components, namely University Strategy; University ICT Provision; Programme Delivery and Performance; Funding, University ICT Support; and Collaboration. The issues raised from the literature forming the basis for this framework is set out in Table 1, below.

Component and Example Question	Literature
<b>University Strategy</b> How effective is the present university strategy for utilising eLearning?	Daugherty and Funke (1998) Visscher (1996) Chen and Hsiang (2007) Latchem and Hanna (2001) Kohli and Devaraj (2004)
<b>University ICT Provision</b> How widespread is the available ICT provision at this university?	Davis (1989) Legris et al. (2003) Laurillard (1993)
<b>Programme Delivery and Performance</b> In what ways do the university ICT provision affect your ability to engage in eLearning practices at this university?	Fabry and Higgs (1997) Rovai and Barnum (2003) Little (2001); Hong (2002) Joint (2003) Chen and Hsiang (2007) Law et al., (2000) Goldstein (1997) Preston et al. (2000) Volery and Lord (2000) Agarwal & Karahanna, (2000)
<b>Funding/ Costs</b> What funding arrangements are you aware of that affect ICT developments at this university?	Inglis (1999) Mayadas, 2001
<b>University ICT Support</b> How effective is the ICT support mechanisms at this university?	Visscher and Wild (1997) Mitev and March (1998) Lo et al. (1999) Pelgrum & Anderson (1999)
<b>Collaboration</b> What collaboration efforts are undertaken at this university to enhance your eLearning experiences?	Adam (2001) Middlehurst (2002)

**Table 1 - Research Literature**

**Profile of the 22 respondents** Full-time - 34%; Aged between 24 – 50 - 78%; Older than 51 – 22%; Female: 57%. Highest level of Education – PhDs – 56%; Masters - 40%; Undergraduate – 4%.

## **Lecturer Perceptions of the Quality of ICT and Elearning Developments**

### *University Strategy*

The university does not appear to have an integrated singular strategy for eLearning or a published strategic institutional policy for eLearning. However, the university develops a concentrated and specific eLearning process that seeks to exploit eLearning and its supporting ICT to enhance a skills-based provision. The university appeared to attempt to encourage the use of eLearning to deliver and promote engagement on selected courses only – those courses specifically directed at skills development or the work-place. This was based on the evidence of eLearning courses solely targeted to software or language skills orientations. The main outcomes of this research strongly supports the thesis that the broader strategic eLearning environment (e.g. organisational) determines whether or not ICT developments will be successful and ultimately provide effectively for learner needs (Papp, 2000). In this respect, this influence does not take the university beyond level six in terms of Hanna's (1998) seven strategic models (7 being the lowest developmental setup). Further, this study also confirms Fullan's (2005) more recent exposition on the importance of connecting ICT policy development with capability and capacity building as a strategy to sustain changing international pedagogic needs. Here, the university fails in its exercise of strategic intent through the lack of public policy development.

### *University ICT Provision*

The level of use of eLearning technologies in programme delivery and consequent student interaction appears to be poor. The research outcome indicates that across the normal graduate curriculum only 8% of the programmes have some form of ICT involvement – and 95% of eLearning provision has no involvement beyond e-mail or digital lecture presentations. The university currently offers online services for only 11.9% of the 42 courses made available on the university web-site. Only 14.3% of the specific programmes made available portrays an approach to eLearning practices and these do not have any strategic management involvement as they are offered by a small department of the computer centre. However, the university claimed that they seek to develop the provision of both blended programmes and to develop fully online eLearning environments in the near future. This suggests that the university could adopt a partial-blended approach to eLearning for some programmes offered (Hanna, 1998) - which involves the integration of eLearning with traditional media and methods in line with course content, level and students. But this development was not widespread, nor was it in-depth. Neither was this seen by many lecturers as a useful development (59.1%) because of the lack of expertise available for giving advice and for linking the system to staff, students and the classroom. However, some staff (45.4%) presume themselves to be *native* ICT capable (Prensky, 2001), are younger than 30 years of age and take ICT 'for granted' suggesting that given the opportunity their engagement in eLearning practices is assured. However, a perceived weakness is in the linking to university-wide management information and administrative systems (77.2%), which is vital for universities to manage ICT and its consequent change (Bates, 2000). Thus, the university-wide system is not effectively integrated into the learning sphere and this has created increasing pressures on the university quality system to deliver.

### *Programme Delivery and Performance*

Presently, no lecturer has the task or responsibility to provide full on-line access for postgraduate programmes, but can access specialised self-study teaching modules. Most lecturers (72.7%) appeared to believe that these were supplemental to the courses provided; and were also considered as lacking in critically focused learning (77.2%) as these programmes were not part of the normal on-going assessment process – especially during pre-MBA entry. This diametrically conflicts with the findings of Strother (2002) where eLearning was found to be the preferred mode of learning of [modern] teachers.

When considering staff skills and access to ICT, the university's ability to provide access and produce electronic resources, and the extent to which eLearning is deployed have not been well utilised (63.63%). Blended-learning activity appeared to have become more widespread but localised (27.3%), seemingly at the expense of the use of ICT in traditional courses (54.5%) and often seen as a support mechanism (45.4%) outside scheduled programmes and lessons. This may be due to a redefinition or retrenchment of some pedagogic activities (27.3%), as blended-learning can be more readily backwards-converted into more traditional learning events. Specialised software companies have contributed to helping the university deliver remote learning programmes (68.2%).

The research has identified that there is no common eLearning model in use throughout the graduate school. The university is using ICT and eLearning practices in very different ways across all teaching areas and to varying extents. However, when using eLearning, the dominant model the university expects to use is a low-level 'blended' approach, combining ICT and traditional methods to deliver classroom learning after Hanna (1998). In this respect, lecturers reported that delivery practices beyond simple e-mail and downloading may be perceived

as difficult (45.4%). Further, the most commonly advised were traditional models of student development based on close *delivery* of technical skills to students (72.3%), which current research suggests is not the most effective approach for the development of important eLearning outcomes (Hiebert, Gallimore, & Stigler, 2002). However, these also raise some concerns as Reeves et al. (2004) suggests that cursory developments in eLearning do little to help change the university delivery pattern from the standard lecture format – meaning short-term eLearning developments rarely create the catalyst for wider eLearning approaches that persist.

There were considerable differences between lecturers in relation to their approach and knowledge of ICT and consequent any pedagogic implications for eLearning developments. For example, some lecturers have either not considered eLearning yet (68.2%) or have considered it but not taken it forward (13.6%) and thus engage rather passively in eLearning developments. Various reasons were advanced such as the lack of ICT skills available (18.2%), but the most prevalent reason was the perceived complexity of eLearning development (77.3%) and that students may not be trained effectively to handle the new eLearning requirements (50%). However, these findings also corroborate the outcomes of Maki and Maki (2002) suggesting that the computer-based instruction was not as useful as the traditional format and in this respect blending processes may not be considered by many as necessary in the short-term at this university.

Where eLearning was used in the university, the most commonly used eLearning activities were the online delivery of specialist software driven course materials (81.8%); online management of course related literature (77.3%); bulletin/discussion boards (13.6%); online formative-assessment (4.5%); online submission of student assignments (68.2%); and student collaboration or group activities using chat methods (0.5%). This suggests that any support activities targeted at departments need to take into account the differing department eLearning contexts.

Lecturer perceived reasons for using eLearning were stated as cost-reduction (68.2%); and managing increased student numbers (18.2%); improved teaching focus and capability (45.4%); and encouragement of student-centred learning (31.8%).

#### *Funding/Costs*

No lecturer had received any funding for any developments in eLearning practices utilised and the issue of the efficacy of arrangements for effectively managing eLearning developments appears to be centralised with top managers. Bates (1999) suggests that eLearning can provide a cost-effective measure for preparing students more adequately – but the demonstrated lack of lecturer engagement with eLearning may have revealed a serious strategic cost-control issue. However, lecturers themselves control any eLearning engagement (72.7%) and therefore could have a major influence on the direction of ICT and eLearning development that pertains to their lecturing needs and subsequently to their student needs.

#### *University ICT Support*

New ICT programmes for staff along with pedagogical and technical support are continuously being developed and provided but do not engage as required by Brusilovsky (2000). Further, new staff are not publically encouraged to introduce (36.4%) or utilise (50%) eLearning practices in the classroom and as such do not seem to be pressured into changing or modifying their teaching delivery methods. The gap between lecturers' skills in their personal use of ICT and their skills in using ICT with learners has not been bridged which may reflect a lack of lecturer confidence (Trinidad, 2005) in their use of ICT in public (63.6%) or the lack of support services (72.7%). This latter aspect was a particularly important issue raised by Collis and Moonen (2001).

#### *Collaboration*

The university has established partnerships for online participation with universities - domestically and overseas. However, this appears to be in the initial development stages as few lecturers directly engage in these opportunities (81.8%) and only one lecturer reported an engagement using web-conferencing - consequently there is perhaps suitable potential to establish a 'collaborative teaching and learning community' (Bates, 2005). It would appear that the university is testing possible *low-level* future technological and pedagogic options following Bates (2001) which appear to be long-term oriented. Lecturers indicate (68.2%) that this is a slow change process resulting from inadequate strategic intent (63.6%) or unsuccessful monitoring processes (36.4%). Table 2, below, indicates the outcomes from the research.

Component	Confirms	Not Confirmed
University Strategy	Hanna (1998); Fullan (2005)	
University ICT Provision	Latchem and Hanna (2001); Pergrum & Anderson (1999)	
Programme Delivery and Performance	Hiebert, Gallimore, & Stigler (2002); Papp (2000); Hanna (1998); Maki and Maki (2002)	Strother (2002)
Funding/Costs	Whitty et al. (1998)	Mayadas (2001); Guri-Rosenblit (2001b)
University ICT Support	Bates (2001)	Collis and Moonen (2001)
Collaboration	Kaufman (1991); Enders and Fulton (2002)	

**Table 2 - Research Outcomes**

**CONCLUSION**

eLearning and the use of ICT has a key role to play in Thailand higher education in helping to shape university leadership, teaching and learning, the curriculum, assessment, and collaborative working practices involving lecturers/students and other universities. Some online learning courses have begun testing the feasibility of online teaching and assessment and exploring the potential of eLearning to extend and utilise educational programmes for students. These issues raise questions on how the university could meet the growing need to balance learning and quality practices through an extended university-wide pedagogic provision using ICT resulting in more effective eLearning provision. The findings of this small-scale study corroborate the outcomes of Collis and van der Wende (2002) in that *change in relation to the use of ICT has been gradual and unsystematic* which in practice reflects a combination of specific environmental parameters such as strategic intent and financial feasibility.

**REFERENCES**

Adam S. (2001). Transnational education project: Report and recommendations. Paper presented at the Confederation of European Union Rectors’ Conferences (now European Association of Universities), Geneva, Switzerland, March.

Agarwal R. and Karahanna E. (2000). Time flies when you’re having fun: cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, 24, 665–694.

Bates A.W. (1999). Strategies for the Future, available at: <http://bates.cstudies.ubc.ca/strategies.html> Last Accessed August 2007.

Bates A.W. (2000). *Management Technology Change: Strategies for College and University Leaders*, Jossey-Bass, San Francisco, CA.

Bates A.W. (2001). *National Strategies for ELearning in Post-secondary Education and Training*. Paris: International Institute for Educational Planning, UNESCO.

Bates A.W. (2005). *Technology, E-learning and distance education*. London: Routledge Falmer.

Bixler B. and Spotts J. (2000). Screen Design and Levels of Interactivity In Web-based Training, available at: [www.clat.psu.edu/homes/jds/john/research/ivla1998/ivla98.htm](http://www.clat.psu.edu/homes/jds/john/research/ivla1998/ivla98.htm). Last Accessed August 2007.

Brusilovsky P. (2000). Adaptive hypermedia: from intelligent tutoring systems to web-based education (invited talk), in Gauthier G., Frasson C. and VanLehn K. (Eds), *Intelligent Tutoring Systems, Lecture Notes in Computer Science*, Vol. 1839, Springer Verlag, Berlin, 1-7.

Carnaby P. (2005). ELearning and digital library futures in New Zealand, *Library Review*, Vol. 54 No. 6, 2005, 346-354.

Chan A.Y.K, Chow K.O and Jia W. (2003). A Framework for Evaluation of Learning Effectiveness in Online Courses, W. Zhou et al. (Eds.): *ICWL 2003, LNCS 2783*, 383–395.

- Chen R.S. and Hsiang C.H. (2007). A study on the critical success factors for corporations embarking on knowledge community-based eLearning. *Information Sciences*, 177, 70–586.
- Collis B. and Moonen J. (2001). *Flexible Learning in a Digital World: Experience and Expectations*. London: Kogan Page.
- Comley P. (2000). Pop-up Surveys - What works, what doesn't work and what will work in the future, 237, available at: [http://www.virtualsurveys.com/papers/paper\\_4.asp](http://www.virtualsurveys.com/papers/paper_4.asp). Last Accessed August 2007.
- Collis B. and van der Wende M. (2002). *Models of Technology and Change in Higher Education: An International Comparative Survey on the Current and Future Uses of ICT in Higher Education*, CHEPS University of Twente.
- Crosby P. (1979). *Quality is Free*, Mentor, USA.
- Davis F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Daugherty M. and Funke, B. L. (1998). University faculty and student perceptions of web-based instruction. *Journal of Distance Education*, 13(1), 21–39.
- Deming W.E. (1986) *Out of the Crisis*, MIT, USA.
- Ehlers U.D. (2004). Quality in e-learning from a learner's perspective. Third EDEN Research Workshop 2004, Oldenburg, Germany: Ehlers, U.-D. (2004). *Quality in ELearning From a Learner's Perspective*. *European Journal for Distance and Open Learning* at [http://www.eurodl.org/materials/contrib/2004/Online\\_Master\\_COPs.html](http://www.eurodl.org/materials/contrib/2004/Online_Master_COPs.html). Last Accessed August 2007.
- Enders J. and Fulton, O. (eds.) (2002). *Higher Education in a Globalising World: International Trends and Mutual Observations*. Dordrecht: Kluwer Academic Publishers.
- European Commission (2001). *The eLearning Action Plan Designing tomorrow's education*. Communication from the Commission to the council and the European Parliament. COM(2001),172 final.
- Fabry D. L. and Higgs J. R. (1997). Barriers to the effective use of technology in education: Current status. *Journal of Educational Computing Research*, 17(4), 385–395.
- Fry K. (2000). Forum focus and overview, in Fry K. (Ed.), *The Business of E-Learning: Bringing your Organisation in the Knowledge E-economy*, Telcam Group, University of Technology, Sydney.
- Fullan M. (2005). *Leadership & sustainability: System thinkers in action*. Thousand Oaks, CA: Corwin Press.
- Goldstein, G. (1997). *Information Technology in English Schools: A Commentary on Inspection Findings 1995–6*. Coventry/London: NCET/OFTED.
- Govindasamy T. (2002). Successful implementation of e-learning pedagogical considerations, *Internet and Higher Education*, Vol. 4 No.3, 287-99.
- Gray J. and Wilcox B. (1995). *Good Schools, Bad Schools*, Open University Press, UK.
- Green D. (1994) *What is Quality in Higher Education?*, ed. The Society for Research into Higher Education and Open University Press, UK.
- Guri-Rosenblit S. (2001b). Virtual universities: Current models and future trends, *Higher Education in Europe* XXVI(4), 487–499.
- Hanna D. E. (1998). Higher education in an era of digital competition: Emerging organizational models. *Journal of Asynchronous Learning*, 2(1).
- Harrison C., Comber C., Fisher, T., Haw, K.; Lewin, C., Lunzer, E., McFarlane, A., Mavers, D., Scrimshaw, P., Somekh, B., and Watling R. (2002). *ImpacT2: The Impact of Information and Communication Technologies on Pupil Learning and Attainment*. ICT in Schools Research and Evaluation Series, No. 7. London: DfES/BECTa. Available at: [http://www.becta.org.uk/page\\_documents/research/ImpaCT2\\_strand2\\_report.pdf](http://www.becta.org.uk/page_documents/research/ImpaCT2_strand2_report.pdf). Last Accessed August 2007.
- Harvey L. and Knight P. (1996). *Transforming Higher Education*, The Society for Research into Higher Education & the Open University Press.
- Heinze A. and Procter C. (2004). Reflections on the use of blended learning. *Proceedings of Education in a Changing Environment*, University of Salford, Education Development University Unit.
- Hiebert J., Gallimore R., & Stigler, J. W. (2002). A knowledge base for the teaching profession: What would it look like and how can we get one? *Educational Researcher*, 31(5), 3–15.
- Hildebrandt and Teschler (2006). *Classifying & finding quality approaches with the EQO model*, *Handbook on Quality and Standardisation in ELearning*, Springer.
- Hong K. S. (2002). Relationships between students' and instructional variables with satisfaction and learning from a Web-based course. *Internet and Higher Education*, 5(3), 267–281.
- James P.T.J. (2005). *Total Quality Management*, Pearson Education, Singapore.
- James P.T.J. (2008). *ICT in Schools: Management and Application*, Educational Technology Books, UK
- Juran J.M. (1988). *Planning for Quality*, Free Press, USA.
- Inglis A. (1999). Is online delivery less costly than print and is it meaningful to ask? *Distance Education*, 20(2), 220–239.



- Joint N. (2003). Information literacy evaluation: Moving towards virtual learning environments. *Electronic Library*, 21(4), 322–334.
- Kaufman H. (1991). *Time, chance, and organizations: Natural selection in a perilous environment* (2nd ed.). Chatham, NJ: Chatham House.
- Kehoe C.M. & Pitkow, J.E. (1996). Surveying the territory: GVU's five www user survey's. *The Worldwide Web Journal* 1(3), 77-84.
- Kohli R. and Devaraj, S. (2004). Realizing business value of information technology investments: an organizational process, *MIS Quarterly Executive*, Vol. 3 No. 1, 55-70.
- Latchem C. and Hanna D. (2001). *Leadership for 21st century learning: Global perspectives from educational innovators*. London: Kogan Page.
- Laurillard D. (1993). *Rethinking university teaching: A framework for the effective use of educational technology*. London: Routledge.
- Law N; Yuen H. K; Ki W. W; Li S. C; Lee Y; and Chow Y. (2000). Changing classrooms and changing schools: A study of good practices in using ICT in Hong Kong schools. SITE Hong Kong Study Centre, Faculty of Education, The University of Hong Kong. Online available at: [http://sites.cite.hku.hk/Changing\\_blue\\_book.htm](http://sites.cite.hku.hk/Changing_blue_book.htm). Last Accessed August 2007.
- Lazar, J. & Preece, J. (1999). Designing and implementing web-based surveys. *Journal of Computer Information Systems* xxxix(4), 63-67.
- Legris P., Ingham J. and Colletette P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204.
- Little B. (2001) Achieving high performance through eLearning. *Industrial and Commercial Training*, 33(6), 203–207.
- Lo S., Koubek A. and Jandl M. (1999). Telelearning at FH Joanneum, concepts and experience, *Proceedings of the ICL Conference*.
- Lockyer L; Patterson J; and Harper B. (2001). ICT in higher education: evaluating outcomes for health education, *Journal of Computer Assisted Learning*, 17, 275-283.
- Lorenzetti J.P. (2004). For quality and cost effectiveness, build a hybrid program. *Distance Education Report*, 8(21), 1-2, 7.
- Maki, W. S., & Maki, R. H. (2002). Multimedia comprehension skills predicts differential outcomes of web-based and lecture courses. *Journal of Experimental Psychology: Applied*, 8(2), 85–98.
- Mayadas F. (2001). Is anyone making money on distance education? *Chronicle of Higher Education*. Available at: [chronicle.com/colloquy/live/2001/02/distance/](http://chronicle.com/colloquy/live/2001/02/distance/). Last Accessed August 2007.
- McPherson M.A. (2003a). Planning for success in e-learning in HE: a strategic view, in *Proceedings of the 2nd International Conference on Emerging Telecommunications Technologies and Applications and the 4th Conference on Virtual University (ICETA 2003)*, 11-13 September 2003, Kosice, Slovak Republic, 449-452.
- Middlehurst R. (2000). *The business of borderless education*. London: Committee of Vice Chancellors and Principals.
- Middlehurst R. (2002). Variations on a Theme: Complexity and Choice in a World Of borderless Education *Journal of Studies in International Education*, 6, 134.
- Mitev N. N. and March A. E. (1998). Small businesses and information technology: Risk, planning and change. *Journal of Small Business and Enterprise Development*, 5(3), 228–245.
- Papp R. (2000). Critical success factors for distance learning. Paper presented at the Americas Conference on Information Systems, Long Beach, CA, USA.
- Pelgrum W. J., and Anderson (Eds.) (1999). *ICT and the emerging paradigm for lifelong learning: A worldwide educational assessment of infrastructure, goals, and practices*. Amsterdam: IEA.
- Pounder J. (1999), *Institutional Performance in Higher Education: is Quality a Relevant Concept?*, *Quality Assurance in Education*, 7 (3), 156-163.
- Prensky, M. (2001). Digital Natives, Digital Immigrants, *On the Horizon*, 9(5), MCB University Press
- Preston C; Cox M. and Cox K. (2000). *Teachers as Innovators. An Evaluation of the Motivation of Teachers to use Information and Communications Technologies*. South Croydon: MirandaNet, UK.
- Reeves T.C., Herrington J. and Oliver R. (2004), A development research agenda for online collaborative learning, *Educational Technology Research and Development*, 52 (4), 53-66.
- Rovai A. P. (2002) Sense of community, perceived cognitive learning, and persistence in asynchronous learning networks. *Internet and Higher Education*, 5(4), 319–332.
- Rovai A. P. and Barnum K. T. (2003). On-line course effectiveness: An analysis of student interactions and perceptions of learning. *Journal of Distance Education*, 18(1), 57–73.
- Sax B. (2003). Academic Tradition in a Digital Age, *On the Horizon*, 11, 3, 5-8.
- Selim H. M. (2005). Critical success factors for eLearning acceptance: Confirmatory factor models, *Computers & Education*, 49, 396–41.

- Sheehan K. B. and Hoy M. B. (1999). Using e-mail to survey internet users in the United States: methodology and assessment. *Journal of Computer Mediated Communication*. March.
- Strother J. (2002). An Assessment of the Effectiveness of e-learning in Corporate Training Programs [electronic version], *International Review of Research in Open and Distance Learning*, 3, 1-9.
- Taguma M. (2006). Quality of e-learning in tertiary education: Managing a balance between divergence and convergence, in Ehlers U. and Pawlowski J.M. *Handbook on Quality and Standardisation in E-Learning*, 465-483, Springer Berlin Heidelberg.
- Trinidad, S. (2005). Taking the next step in using technology. In S. Trinidad & J. Pearson, (Eds.), *Using information and communication technologies in education* (pp. 1-15). Singapore: Prentice Hall.
- Twomey E. (1996). Is there a role for computer-based assessment? available at: <http://science.universe.edu.au/mirror/CUBE96/twomey.html> Last Accessed August 2007.
- Visscher A. J. (1996) Information technology in educational management as an emerging discipline. *International Journal of Educational Research*, 25(4), 291–296.
- Visscher A. J. and Wild P. (1997). The potential of information technology in support of teachers and educational managers managing their work environment. *Education and Information Technologies*, 2(4), 263–274.
- Volery T., and Lord D. (2000). Critical success factors in online education. *The International Journal of Educational Management*, 14(5), 216–223.
- Weible R. and Wallace J. (1998). The impact of the Internet on data collection. *Marketing Research*, 10(3), 19-23.
- Whitty G., Power S. and Halpin D. (1998), *Devolution and Choice in Education, the School, the State and the Market*, Open University Press, London.
- Zhang D., Zhao J.L., Zhou L. and Nunamaker J.F. (2004). Can e-learning replace classroom learning?, *Communications of the ACM*, 47 (5), 75-9.
- Zhang J. (2007). A cultural look at information and communication technologies in Eastern education, *Education Tech Research Dev*, 55, 301–314.