

# What About Flexible Learning And Ict? – A Review Of Technology Based Flexible Learning In Tertiary Education

*Philippa Gerbic*

Auckland University of Technology

Private Bag 92006, Auckland, New Zealand

## INTRODUCTION

The impact of the Internet and information communication technology (ICT) on the tertiary sector is well recognised in the literature. Tiano (1996 in Inglis & Joosten, 1999) in a comparative model of the old and new paradigms of education repositions technology from an expense under the old paradigm to that of a differentiator in the new paradigm. Technology is often discussed as a solution to problems facing universities in a world that is commonly characterised by rapid change, globalisation, falling revenues, competition, and learner diversity (Cunningham et al., 1998). The link between ICT and lifelong learning has been highlighted as universities seek to develop knowledge workers for the new information economy (Harper et al, 2000). Collis and Moonen (2001) believe that there is a “sense of inevitability” (p37) about the use of computers, as universities consider how they best communicate their reputation and market positioning.

Wallace (2003) notes that internet based online courses are still a relatively new phenomenon, with rapid expansion occurring during the 1990s. A new terminology of learning has now emerged, for example, the new paradigm of learning (Kaye (1989), the virtual classroom, (Tiffin and Rajasingham 1995, cited in Champion, 1996), learning networks (Harasim et al (1996), internet based learning (French et al, 1999, and ICT based learning communities (Wallace, 2003). One concept that has gained widespread use is that of flexible learning. This paper examines ICT based flexible learning through a review of the literature. It looks first at the concept from a theoretical point of view and then examines its meaning in current practice with particular reference to convergence and the role of technology. Lastly it looks at challenges for learners.

## FLEXIBLE LEARNING AS A CONCEPT

The literature indicates little agreement about the meaning of flexible learning as a general concept. Hudson et al (1997) note that flexible learning is commonly used with various other terms including flexible delivery, open learning, resource based learning, distance learning, independent learning and self managed learning. Conceptually, flexible learning is generally sited within the open learning field :

“ the concept of open education is ill defined but has to do with matters relating to access, freedom from constraints of time and place, means, structure, dialogue and the presence of support services. Openness in terms of means would imply the presence of choice between distance and contiguous modes as well as choice between specific media. Most of these features relate to educational policy and philosophy rather than the modality of teaching”  
(p 35, Rumble, 1989)

Lewis (1990) argues that the emphasis in open learning needs to move from one of access to that of mainstreaming, creating new opportunities for learning and the development of independent learners, and to some extent, has anticipated many of the trends in flexible learning today, especially in campus based universities. Evans and Nation (1996) comment that the term ‘open learning’ is often used for political and marketing reasons and state that “ the use of these terms as slogans means that a large degree of slipperiness will prevail” (p6).

Ellington (1997) notes that flexible learning began to be used as a term in the UK in the early 1980’s. Hudson et al (1997) note that learner centered definitions are common, for example, Wade (1994) who defines flexible learning as

“an approach to education which provides learners with the opportunity to take greater responsibility for their learning and to be engaged in learning activities and opportunities that meet their own individual needs” (p12).

Hudson et al, (1997) define flexible learning similarly ie

“essentially learner centered learning... aimed at improving access, giving learners control and choice over what and how they learn, helping them to take responsibility for their learning and providing support appropriate to the individual’s needs” (p13).

While it is clear from the literature that flexible learning can occur in the absence of technology, there is now either an explicit or implicit recognition that ICT is a key enabler for flexibility. Taylor Lopez and Quadrelli (1996) describe their “combination of philosophy and technology” (p6):

“ the term ‘flexible’ is used to refer to practices which utilize the capacities for learner-learner and teacher-learner interaction made possible through recent developments in communication and information technology to provide increased ‘openness’ in both on and off-campus delivery of educational programmes...” (p6)

Collis and Moonen’s (2001) model of flexible learning in tertiary education comprises four elements – institution, implementation, pedagogy and technology ie ICT. They stress that this is an integrated system where technology should never be separated from the rest of the model especially the pedagogical component. From their work, they identify 19 dimensions of flexibility and then discuss ways in which institutions can introduce technology to provide increased flexibility along a ‘fixed/less flexible/more flexible continuum’ (p11).

## **FLEXIBLE LEARNING IN PRACTICE**

Lack of agreement about flexible learning conceptually means that policy and practice in tertiary education institutions is valuable for providing further depth of meaning. The notable trend here is a convergence – of different modes of course offerings and consequently, in a wider variety of learning modes for learners, and a new terminology. Bates (1994, cited in Campion, 1996) talks about convergence as the end of the distinction between distance education and on campus education, which he ascribes to the impact of technology. This has resulted in the emergence of **mixed mode** institutions which offer a variety of courses for learners, for example, both on campus and distance courses and programmes which comprise both ‘distance’ and on campus learners (Trindale, Carino, & Bidarra, 2000). Collis and Moonen (2001) note that concept of distance itself is “loosing its meaningfulness” (p42) as distance learners attend on campus sessions, attend local study centres, and use ICT for communication and interaction. King (2001) agrees and says there is no longer a special distance learner constituency, so it is difficult for distance programmes to differentiate themselves. Cookson (2002) in a collection of international cases on the subject, refers to “the worldwide phenomenon of **hybridisation**” which he describes as the use of ICT by conventional universities to enhance on campus learning and create new courses for distance learners.

In their study, Ling et al (2001) looked at how non metropolitan universities in Australia conceptualise and practise **flexible provision**. This study found a new integration i.e. no clear demarcation between distance and on campus learning and suggests that education should now be seen as a continuum. While there were a huge variety of rationales and approaches, varying from “educational to instrumental” (p50), that, whatever the intent, learners got choices. This would seem to be a

consistent theme throughout much of the literature, for example Pearson and Ford (1997) argue similarly in their investigation of doctoral study.

Another form of convergence is occurring within conventional universities. Taylor et al (1996) note the blend of ICT and face-to-face learning for on campus learners. Collis and Moonen (2001), distinguish between 'pedagogical extension' where there is very little change to the course itself, but technology is used to increase flexibility (eg Internet access to course contents) and 'pedagogical engineering' where the course is significantly redesigned and uses a wider range of technology (eg asynchronous discussions) to develop active collaborative learners. In their experience, these two concepts also support a staged and comfortably managed transition to flexible learning and provide a strong foundation for investigating new kinds of learning designs. Other examples of this kind of convergence have been reported, including Logan Campus, Griffith University, and Ipswich Campus at University of Queensland, both in Australia (Ling et al, 2001). More recently, in the UK, this approach has been called **blended learning**, for example, Aspden et al (2003) who report an evaluation of e-Learning for on campus learners.

In this context, some writers, for example, Taylor Lopez and Quadrelli (1996) talk about **flexible delivery** rather than flexible learning. This seems to be regarded as a narrower concept by some writers, for example, Kirkpatrick and Jakupiec (1999). Kavanagh et al (2001) argue that flexible delivery is simply another didactic approach where ICT is used to transmit content through the "electronic repackaging of materials" (p2), and advocate that it should be used to support dialogue, interaction reflection and collaborative knowledge construction. However, this discussion may be somewhat removed from the views of teachers. In a research study, Lynch and Collins (2001) found that participants used words like flexible learning, flexible delivery and online learning interchangeably. Participant's views about the use of ICT in teaching did not focus on flexibility and few talked about promoting interaction, collaboration, learner centeredness or constructivist approaches.

## **THE ROLE OF TECHNOLOGY**

The discussion about flexible learning with technology is marked with debate about the fundamental role of the technology itself in flexible learning. Ling et al (2001) note that there are "many agendas" (p11) for introducing flexible learning and they are not associated with improving the quality of learning. ICT based flexible learning is attractive to universities as they grapple with increasing participation with reduced funds and various policy constraints (Edwards, 1997), and other factors

like accountability, increased competition and the move from a 'semi-mass' to a 'semi-elite' system (Chubb and Shapiro 1993 cited in Kirkpatrick & Jakupec, 1999).

Privateer (1999) considers that universities are at a "strategic academic crossroads" (p8) and must choose between using technology in an administrative fashion to manage learning or using it in an "invention and intelligence driven approach" (p8) to improve the learner learning experience and produce graduates that can solve world problems. He argues against a focus solely on improving efficiency by keeping the "replication [transmission] model" with its continuing emphasis on content and using computers to automate learning (p7). His concern is that this approach will not only hamper the development of new technologies but may also make universities and their qualifications increasingly irrelevant. He envisages that technology could be used instead to support real world, constructivist, collaborative, problem solving learning experiences.

Privateer's argument is also supported by Garrison and Anderson (2000). They argue that ICT is a disruptive influence in tertiary education, which can have stronger or weaker influences. They advocate for a stronger influence for technology because it has the ability to be transformational ie to

"fundamentally alter the teaching and learning relationship by providing the opportunity and means to approach teaching in a facilitative and collaborative manner... towards the development of deep and meaningful learning outcomes" (p27).

The use of technology in a 'weaker' way would simply enhance current practice which is essentially often transmission based. Latchem and Hanna (2002) also view technology similarly, and argue that in order to ensure that they aren't displaced by other providers, universities must change and need transformational leaders to achieve this ie those that see ICT as an opportunity for developing a new learning that is "collaborative, applications-driven and constructivist" (p209). There is now a large literature on the application of constructivist principles in ICT based learning environments, for example, Jonassen et al (1995), and more recently, through the discussion relating to the activities of learning communities (Wallace, 2003) that can enable teacher construction or social construction of knowledge.

Collis and Moonen (2001) also argue against the use of technology to provide mass produced materials and courses. They endorse the traditional model of campus based education which is an integrated model ie the teacher, as a subject expert and researcher, produces and delivers the course, so that the learner has an opportunity to learn through an "intellectual apprenticeship" (p43) as they develop an understanding of the new knowledge community. The challenge for flexible learning with technology, in their view, will be to maintain this kind of valuable learning

relationship. Laurillard and Margetson (1997) extend this by pointing out the key issue is the way in which ICT can improve the dialogic process, which in their view is fundamental to learning.

## **CHALLENGES FOR LEARNERS**

Not much research has been carried out regarding learners in this area (Laurillard, 2002). Andragogic frameworks are often used to discuss online learners, for example, Lyman (1999) on internet based learning. However, adult learners are often described as learners with work, family or life experience, and this is not the case for many school leavers who today make up a considerable proportion of the undergraduate population. Thompson (1998) indicates that context needs to be given more weight, with learners being considered on a continuum ranging from immature to mature learners. This would enable a wider range of factors, including matters like gender, culture, spirituality, literacy and disability and socioeconomic factors to be taken into account (Palloff and Pratt, 2003).

One factor that affects learners in a flexible learning environment is a lack of understanding about the reasons for introducing flexible learning with ICT. Behncke and McNaught (2001), note that many students (and teachers) don't understand the role of online learning in education and the benefits for them as learners. They also identify the impact on students of the uncertainty which arises through moving from the "known" ie classroom based learning to the "unknown" ie the online learning environment. Mitchell and Bluer (1997) also note that issues relating to student adaption are more likely to arise where there is a tradition of small class teaching. In an evaluation into e-learning with undergraduates, Aspden et al (2003) found that what was important for students was not so much the kind of e-learning experience they had, but a clear and explicit rationale for the activity so that students could understand its benefits.

One issue with flexible learning that has a significant impact on learners is the demand of independent learning. Collis and Moonen (2001) liken this to a cafeteria (p15) with its many choices, and identify the ensuing need for self direction and motivation. Consequently, flexibility in place and time can mean more work on one's own and less time with peers. Reeves (2002) identifies an associated issue of increase in student workload, which he says must be managed to maintain student motivation. Alexander and McKenzie (1998) found that students aren't generally intrinsically motivated by technology but are motivated by grades and will participate if the work is graded. This can be somewhat disjunctive with teachers who have more 'idealised' views about learning for its own sake rather than getting credit (Mitchell and Bluer, 1997). Students in Aspden et al's (2003) study understood

the need and opportunity for independent learning and self directed study but whether they thought this was desirable depended again on how the teacher explained its purpose and the student's own self confidence. The University of Queensland's Ipswich Campus' experience (Ling et al, 2000) is that, even with significant levels of learning resources and course structure, that students still want access to teachers and dialogue.

A further issue for learners is that of integration, which may arise in two ways. Firstly, Prosser and Trigwell's (1999) model of student learning indicates that the student's previous experiences of learning influence their views of their current learning situation. This relationship was affirmed by Alexander and McKenzie (1998) in an evaluation of the introduction of technology, who found that students' previous experiences influenced their acceptance of new learning approaches with (or without) technology. This indicates the importance of creating a positive first time experience but also indicates that where there is a change in pedagogical approach, for example, a change from didactic to a more constructivist approach, then student's behaviour will be influenced by their lack of experience with the new mode. Secondly, the student's experience in the ICT based portion of their course needs to integrate with the face-to-face portion of their course and their whole programme of study. In their study of undergraduate students, Vadi and Bunker (2001) found that while many students acted as independent learners generally in the online environment, that they did not do so in the discussion forum. There was mismatch between the class which was very teacher focused and the online discussion which was student focused. Students didn't collaborate because they didn't see the value in this activity, with it not being something that happened in the classroom environment.

Finally, many writers have identified the issue of student attitudes and skills. Lyman (1999) identifies a number of technology based skills that student should have, like information literacy, searching and navigating and spreadsheet and presentation skills. More broadly, Palloff and Pratt (2003) provide two learner profiles. The first profiles the successful online learner generally and comprises various dispositions, and skills, for example, time management, reflective and critical thinkers, and interestingly, a belief that "high quality learning can happen anywhere and anytime" (p8). The second profile is of the qualities for successful membership of an online learning community and these include openness, flexibility, taking responsibility for community formation and willing to work collaboratively. Harper et al (2000) support this and stress the importance of an induction for students where the focus is on learning how to learn online and the importance of "becoming socialised to the online environment" (p29). Also important was identifying the expectations of the course for both teacher and students.

## CONCLUSION

The meaning of flexible learning is not clear conceptually, although it is foundationally connected to open learning and generally emphasizes student centeredness and student choice. The advent of ICT has resulted, in practice, in the convergence of distance and campus based learning and a blend of ICT and face-to-face learning for on campus students, producing a wide range of flexibilities, dependent on the strategic intent of the institution. The debate about the role of technology appears to be focused around contradictory objectives i.e. improving the quality of learning and graduates or efficiency and philosophies i.e. knowledge transmission or constructivism. While adapting to the special characteristics online environment itself is a new challenge for learners, some others matters like motivation, independent learning and time management simply present themselves in a new context.

## REFERENCES

- Alexander, S., and McKenzie J. (1998) *An Evaluation of Information Technology Projects for University Learning*, Committee for University Teaching and Staff Development, Australian Government Publications Press.
- Aspden, L., Helm, P., & Thorpe, L. (2003). *Capturing Learner's Experience with e-learning: Preliminary Findings*. Paper presented at the Communities of Practice : Research Proceedings of the 10th Association for learning Technology Conference (ALT-C 2003), Sheffield, UK.
- Behncke, L., & McNaught, C. (2001). *Seeing the Bigger Picture : Experiences of Employing Online Learning within TAFE at RMIT*. Paper presented at the Meetings at the Crossroads : Proceedings of the 18th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education, Melbourne.
- Campion, M. (1996). *Opening Learning : Closing Minds*. In T. Evans & N. D (Eds.), *Opening Education : Policies and Practices from Open and Distance Education*. London: Routledge.
- Collis, B., & Moonen, J. (2001). *Flexible Learning in a Digital World*. London, UK: Kogan Page.
- Cookson, P. (2002). Editorial. *International Review of Research in Open and Distance Learning*, 2(2), 1 -2.



- Cunningham, S., Tapsall, S., Ryan, Y., Stedman, L., Bagdon, K., & Flew, T. (1998). *New Media and Borderless Education: A Review of the Convergence Between Global Media Networks and Higher Education Provision* (EIP 7/22). Canberra: Department of Employment, Education, Training and Youth Affairs.
- Edwards, R. (1997). *Changing Places ? Flexibility, Lifelong Learning and a Learning Society*. London: Routledge.
- Ellington, H. (1997). Flexible Learning -Your Flexible Friend. In C. Bell, M. Bowden & A. Trott (Eds.), *Implementing Flexible Learning : Aspects of Educational and Training Technology XX1X*. London: Kogan Page.
- Evans, T., & Nation, D. (1996). Opening Education : Global Lines, Local Connections. In T. Evans & D. Nation (Eds.), *Opening Education : Policies and Practices from Open and Distance Education, Routledge Studies in Distance Education* (pp. 1-6). London: Routledge.
- French, D., Hale, C., Johnson, C., & Farr, G. (1999). *Internet Based Learning : An Introduction and Framework for Higher Education and Business*. London: Kogan Page.
- Harasim, L., Hiltz, R., Teles, L., & Turoff, M. (1996). *Learning Networks : A Field Guide to Teaching and Learning Online*. Cambridge, England: MIT Press.
- Harper, B., Hedberg, J., Bennett, S., & Lockyer, L. (2000). *Review of Research. The On-Line Experience : the State of Australian On-Line Education and Practices* South Australia: Australian National Training Authority.
- Hudson, R., Maslin-Prothero, S., & Oates, L. (1997). *Flexible Learning in Action*. London: Kogan Page.
- Inglis, A., & Joosten, V. (1999). *Delivering Digitally : Managing the Transition to the Knowledge Media*. London: Kogan Page.
- Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Haag, B. (1995). *Constructivism and Computer-Mediated Communication in Distance Education*.
- Kavanagh, M., Marjanovic, O., & Brown, A. (2001). *Adopting Institutional Flexible Learning : Facing the Challenges*. ODLAA, 15th Biennial Forum, 2001 Education Odessey, Sydney.

- Kaye, A. (1989). Computer-mediated Communication and Distance Education. In R. Mason & A. Kaye (Eds.), *Mindweave*. Oxford, England: Pergamon Press.
- King, B. (2001). Managing the Changing Nature of Distance and Open Learning at Institutional Level. *Open Learning*, 16(1), 47-60.
- Kirkpatrick, D., & Jakupec, V. (1999). Becoming Flexible, What Does it Mean? In *Convergence of Distance and Conventional Education*. London: Routledge.
- Latchem, C and Hanna, D (2002). Leadership for Open and Flexible Learning. *Open Learning* 17(3), 203-215.
- Laurillard, D. (2002). *Rethinking University Teaching : a Framework for the effective Use of Learning Technologies*. London and New York: Routledge.
- Laurillard, D., & Margetson, D. (1997). *Introducing a Flexible Learning Methodology*. Nathan: Griffith Institute of Higher Education.
- Lewis, R. (1990). Open Learning and the Misuse of Language : a response to Greville Rumble. *Open Learning*, February, 3-8.
- Ling, P., Arger, G., Smallwood, H., R, T., Kirkpatrick, D., & Barnatd, I. (2001). *The Effectiveness of Models of Flexible Provision of Higher Education*. Canberra, Australia: Evaluation and Investigations Programme, Dept of Education, Training and Youth Affairs.
- Lyman, B. (1999). Internet-based learning. What's in it for the Adult Learner? In *Internet Based Learning : An Introduction and Framework for Higher Education and Business*. Virginia: Stylus Publishing.
- Lynch, J., & Collins, F. (2001). *Academics' Concerns about "The Push for Flexible Delivery"*. Meetings at the Crossroads : Proceedings of the 18th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education, Melbourne.
- Mitchell, J., & Bluer, R. (1997). *A Planning Model for Innovation* (report). Melbourne, Australia: Office of Training and Further Education.
- Palloff, R and Pratt, K. (2003) *The Virtual Student: A profile and Guide to Working On Line Learners*. San Fransisco: Jossey-Bass.

- Pearson, M., & Ford, L. (1997). *Open and Flexible PhD Study* (EIP 97/16). Canberra: Evaluations and Investigations Program, Higher Education Division, DEETYA.
- Privateer, P. (1999). Academic Technology and the Future of Higher Education : Strategic Paths Taken and Not Taken. *Journal of Higher Education*, 70(1), 60-79.
- Prosser, M., & Trigwell, K. (1999). *Understanding Learning and Teaching*. Buckingham: Society for Research into Higher Education and the Open University Press.
- Reeves, T. (2002). *Storm Clouds on the Digital Horizon*. Winds of Change in a Sea of Learning : Proceedings of the 19<sup>th</sup> Annual Conference of Australasian Society for Computers in Learning in Tertiary Education, Auckland, New Zealand.
- Rumble, G. (1989). 'Open learning', 'distance learning' and the Misuses of Language. *Open Learning*, June, 28 - 36.
- Taylor, P., L, L., & C, Q. (1996). *Flexibility, Technology and Academics' Practices : Tantalising Tales and Muddy Maps* (EIP 96/11). Canberra: Department of Employment, Education and Training and Youth Affairs, Evaluations and Investigations Programme, Higher Education Division,.
- Thompson, D. (1998). *Module 5 - Teaching Using Technologies : Some Pedagogical Considerations*: Deakin University.
- Trindale, A., Carino, H., & Bidarra, J. (2000). Current Developments and Best Practice in Open and Distance Learning. *International Review of Research in Open and Distance Learning*, 1(1), 1-23.
- Vardi, I., & Bunker, A. (2001). *The Relationship between the Perceived Value of Supplementary Online Components, and Student Roles and Responsibilities*. Meeting at the Crossroads. Proceedings of the 18th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE), Melbourne, Australia.
- Wade, W. (1994). Introduction. In W. Wade, K. Hodgkinson, A. Smith & J. Arfield (Eds.), *Flexible Learning in Higher Education* (pp. 1-5). London: Kogan Page.
- Wallace, R. (2003). Online learning in Higher Education : a Review of Research on Interactions among Teachers and Students. *Education, Communication and Information*, 3(2), 241 - 280.