Technology as an enabler

Chris Shiel and *David Jones* consider the role of technology as an enabler for development education (DE), underlining the value of information and communication technology (ICT) in promoting learning through interaction and identifying the pedagogic approaches that can be applied. They suggest that the role of ICT in development cannot easily be separated from its role in DE, as ICT development projects also contain elements of education.

Information and communication technology (ICT) increasingly permeates all aspects of life and the escalating role of the Internet in education is incontrovertible. As the government launches its 'e-learning strategy' and the DfES identifies 'being an international leader in the use of ICT for education' as part of its International Strategy, considering the role of ICT in relation to development education (DE) seems particularly timely.

It is commonplace to argue that ICT is central to economic and social development. So central, that socially aware commentators (Hammond 2002) draw attention to a new social and economic divide, the 'digital divide'. They proceed to argue that those (nation states or individuals) who lack ICT capability, run the risk of being excluded in as fundamental a way as those who cannot read or write.

ICT has become part of the grand narrative of nation states and social movements, heralded as the key to economic success and social progress, with Governments of all persuasions setting strategies and targets for international leadership in the use of ICT. Alternatively, ICT can be cast in the role of 'villain', creating new and more insidious inequalities and further increasing the North-South gap. Whilst such grand narratives alert us to the need to give serious consideration to the broad economic, ethical and political challenges that ICT poses, they run the risk of elevating ICT to the role of an exacting master, seemingly beyond the control not just of individuals but of nation states. In so doing they critically obscure the more prosaic yet potentially empowering realization that ICT, like the telephone, is just a tool. This characterization, we argue, is critical because it calls attention to the possibility that ICT can be used by each of us to do different things and in different ways. This paper takes as its starting point a more modest prospectus for change and explores how ICT can be used at a local level to promote the goals of DE.

Engaging wider society and promoting quality and learning: technology as an enabler

Readers will recognize in the heading two of the goals of DE; harnessing technology appropriately can support the achievement of both of these goals. The benefits of e-learning (ie. learning that is facilitated by computer/ internet technology) as a delivery mode in terms of offering flexibility (time, place and speed); supporting different learning styles; providing better information and quality materials; and the potential to enhance communication using computer conferencing software have been commented upon by a number of authors (Weller 2000; Melton 2000; Stamatis

et al 1999). It is suggested that e-learning offers real potential for widening participation, extending knowledge sharing and engaging in collaborative learning across boundaries. The '*any time, any place, any where*' mantra reinforces the 'flexibility' provided. If technology offers such limitless flexibility and facilitates 'wider engagement' through the reach it affords, then it has to be seen as an enabler for DE. Knowledge sharing across boundaries is certainly one way to challenge perspectives on development issues and to facilitate global learning.

However, is yet another website sufficient to extend knowledge and to achieve high quality learning? It is an unfortunate fact that, for many, developing a website is as far as the use of ICT goes, with a 'project website' a too common 'deliverable' of many funded projects. While there are undoubtedly many good websites, their proliferation often results in a vast amount of 'content-dumping' and many offer, at best, a passive learning experience. We would suggest that anyone thinking of developing a website consider carefully whether the content increases knowledge and understanding, or whether it contributes to duplication and information overload.

Engaging with learners: learning through interaction

One way of ensuring that ICT enhances learning is where a 'virtual learning environment' (VLE) affords[1] networked learning. A VLE[2] is a system that typically provides tools for content delivery, communication and collaboration, assessment and administration. Networked learning is where technology is deployed to facilitate connectivity in the learning process: between learners; between learners and tutors and between a learning community and resources. It is where technology supports '*learner connectivity*' in both one-to-one and one-to-many forms that that the greatest benefits are likely to accrue and learning moves from a passive experience, to active learning. The potential of 'connectivity' and 'interaction' seem to offer the greatest opportunity for DE, where the affordance of collaboration enables learning.

A focus on pedagogy

An 'online collaborative learning' approach is particularly appropriate for DE, in that it acknowledges that learning is a social process and respects the authenticity of the learner. As an active participant in his/her learning; the learner's perspective is valued and the learner collaborates in developing learning by interacting with others.

A collaborative approach combined with constructivism, where learning develops from a conversational model between student and tutor (Laurillard 2002) not only utilizes the full potential of computer conferencing but sits well with DE, where the 'knowledge/content' is often contestable (fuzzy) and perspectives develop and become more solidified, during the learning process. DE regards the context of the learner as important: a technology enabled, collaborative approach allows learners' multiple contexts to contribute to the learning experience. Approaches which emphasise 'information' over interaction would seem less appropriate to the principles of DE.

Collaborative/constructivist approaches are commonly applied in online learning (Weller 2003) and in our view, offer the greatest potential for developing learning. Other pedagogic approaches (see Weller) such as 'problem-based learning' and 'narrative based teaching', used in combination, would also support DE. The critical issue is that anyone developing e-learning should consider pedagogy from the outset and opt for an approach that plays to the strengths of the technology, but is not dominated by it. Technology should be the tool to emancipate and enhance, rather than a constraint.

The pedagogic approach for online learning needs to be appropriate to the material, the level and types of students and the resources available. Combining approaches provides variety but variety must be balanced with the need to develop confidence in the learner, through consistency. It is also important to anticipate the requirements that will be placed on the tutor. Laurillard (2002) reminds us that the educator's function shifts focus in online learning: the tutor becomes a 'facilitator of knowledge transformation', not a 'transmitter of knowledge'. Staff development must equip staff with IT skills and develop 'e-tutor' ability.

Further issues to be considered if 'e' is to 'enable'

Pedagogy and staff development are just two of many issues that need consideration. Experience has shown the importance of careful planning and project management. It is easy to underestimate the time required to develop content and appropriate learning activities. Programmes that are lower on 'content' and high on 'interaction' are often quicker to develop but may require a higher level of tutor facilitation and thus greater delivery costs. Conversely, programmes that are high on content but lower on tutor interaction often incur greater upfront costs but can be cheaper to deliver. Decisions about the balance between content/self-managed learning/tutor facilitated approaches have to be made within the pragmatic constraints of budgets. However, at the heart of any decision must be the consideration of the principles of how we learn.

Working in partnership, building a team and developing best practice

Given that developing e-learning is both complex and costly, working in partnership is often one of the best ways to engage. Partnership work brings its own set of challenges (Ahiabenu 2003) but for many in DE, working with a public or private organisation that already has a VLE and/or experience may provide the only opportunity. Ahiabenu explains the benefits of working with a range of stakeholders in ICT capacity development, highlighting the benefits of partnership and the dangers of being 'technology-centered' rather than focusing on people. This equally applies to developing e-learning: if the human element and people skills are not taken into account then projects fail.

Such developments require a wide skill set and this should be considered when selecting a partner. A multi-skilled team including educational technologists, subject experts, tutors and administrative staff can increase the chances of project success. Collaborative teamwork is rewarding and is important for sustainability. Project champions are necessary but an over-reliance on one or two individuals carries risks. It is also important to ensure that once a project is implemented processes are in place to ensure maintenance and support.

Expertise in 'SENDA' (the Special Educational Needs and Disability Act 2001) will enhance any project: the development has to comply with legislation but by aiming for best practice (beyond compliance) the project can open up valuable opportunities for those with special needs. A good editor and a process for checking and rechecking content are also vital. Content written from a western perspective does not always travel well. It is surprising how authors forget that expressions are culturally specific.

But are we ignoring issues of access?

The term 'digital divide' has been used by policy makers and academics to describe the gap that exists between those who have computers and internet access, and those who do not. We suggested earlier that the concept can obscure. Warschauer (2002) argues that it is better to focus on 'technology for social inclusion' and to learn the lessons of those who have been involved in promoting literacy. We agree. The key issue is not whether to deploy technology as though technology itself is excluding but to consider how to deploy the technology to enable social inclusion. The following examples illustrate how connectivity creates potential for inclusion and global learning.

ICT enabled social inclusion[3]

Between 2000 and 2004, internet usage in Uzbekistan rose from 7000 to half a million. (While this is a huge increase, this only reflects 2% of the population). The 'School Connectivity for Uzbekistan' project, funded by the US government and IREX (International Research and Exchanges Board) was set up to address the 'access' gap and the development of a more informed population. Sixty internet centres were set up in six regions and access was provided to approximately 20,000 educators, students and school communities. One centre trained a group of seamstresses who were then able to access new styles and clothes patterns. The opportunity to engage in on-line

discussion was also provided at www.connect.uz. This was particularly important in a country where poor transport and traditional communication systems have acted as inhibitors to sharing knowledge and experience.

This provides a good example of how ICT can enhance development but what about DE? Other aspects of the project demonstrate that through 'connectivity' education results and groups become empowered to take action. Communication online allowed groups to plan community events, environmental education sessions and a 'Global Youth Service Day'. They made connections with partners in other countries to develop and share knowledge and perspectives. The 'connectivity' led to DE (although not structured initially) and impetus to take action.

The 'PEOPLink' and 'CatGen' project *Empowering a Global Network of Artisans*, applies the proverb 'Give a man a fish and you have fed him for a day. Teach a man to fish and you have fed him for a year' to e-commerce. Peoplink.org began as a website and developed into an organization that allows participants to market local craftwork resulting in enterprises being set up in communities across a range of countries including Albania, India, Ecuador, Ireland, Siberia and the Ukraine.

While these projects explicitly illustrate ICT and 'development' rather than DE, without development what hope is there for DE? ICT capacity needs to be built initially but once established, 'connectivity' opens a door for DE.

But projects also fail. Warschauer (www.firstmonday.dk/issues/issue7) documents the *Hole in the Wall* project, set up by the Government in New Delhi in partnership with an IT company. The approach was to provide computer access to street children by setting up a computer kiosk with monitors protruding through a hole in the wall. Children swarmed around the site and started to acquire basic IT skills, even though no instructors were provided. The project was recorded as a success; however, Warschauer reports that negative implications were overlooked. No educational programmes were provided, the children only spoke Hindi so content was largely irrelevant and many parents were unhappy about the lack of organized instruction. In some cases it encouraged children to play games at the expense of focusing on schooling.

So what can we learn from this?

These cases are just a few of many that demonstrate the potential of the technology to enable development and learning providing the technology is thoughtfully applied. In the case of the Hole in the Wall little thought was given to the context of the learners and education, addressing the digital divide in the misguided sense of 'access to computers'. A focus on 'social inclusion' might have drawn attention to the needs of learners, literacy and locally relevant material. Participants require some ICT competence before they can engage with e-learning but we suggest that ICT 'capacity development' and 'skills development' can take place in parallel. DE might logically follow on the back of ICT development but might even run concurrently?

We are convinced that ICT provides a powerful tool in the learning process. We are also aware that for many, developing e-learning can seem beyond reach and the technology mystifies, rather than liberates. ICT presents challenges and triggers uncertainty and doubt, even for the most experienced educator. However, this should be seen as a positive feature: questions about how to deploy educational technology can 'raise the lid' on the 'taken for granted' and force a more critical review of pedagogic practice.

In summary technology affords

- additional support for face to face learners;

- wider access and alternative forms of learning for those with special needs;

- connectivity and collaboration, sharing of perspectives and an enhanced view of global issues across boundaries.

We must envisage a scenario where ICT emancipates and empowers, rather than one where an ICT elite retains control.®

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Notes

1 'afford' is used in the sense of 'affordances', a term developed by Salomon (1993) which is used to refer to the functional properties of a VLE that determine how it can possibly be used.

2 There are a variety of commercial VLE packages available in the UK, the most well known being Blackboard, FirstClass, Lotus LearningSpace and WebCT. In addition to commercial packages there are a large number of locally produced applications which offer similar functions.

3 others can be found at www.digitaldivide.net/com

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