Introduction to themed section: enhancing learning and teaching in technology-poor contexts

Journal Item

Introduction

Themed Section: Enhancing Learning and Teaching in Technology-Poor Contexts

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In many parts of the world there has been a substantial growth in the use of media and technologies for educational purposes (both formal and informal) over the last 15-20 years. In western countries access to computers and the Internet – in the home, in schools, colleges and universities and in the workplace – is now taken for granted by a very large proportion of the population. Massive investments have been made by governments and institutions in the infrastructure to support access to computing equipment and networks, especially in educational establishments. Not surprisingly, a large share of the articles in scholarly journals concerned with issues such as technology enhanced learning, distance/open education refer to projects and studies that have been undertaken in technology-rich educational contexts.

However, in many developing countries there are thousands of schools, colleges and universities that are very different from those found in western nations. A chalkboard might be the only equipment available for use in school classes and electricity can be a scarce commodity. There will often be 50-80 students crowded into school classrooms, the walls of which provide little in the way of sound insulation from classes taking place in adjoining rooms. In small towns and rural areas many students will never have heard of the Internet, let alone used it, because the necessary infrastructure simply does not extend beyond the densely populated conurbations. Access to computers and landline telephones is often available only to a privileged minority of urban dwellers. Despite the increased participation in education anticipated within the United Nations Millennium Development Goals (http://www.un.org/millenniumgoals/index.shtml), there seems to be little likelihood of the educational systems in developing countries adopting technologies to support learning and teaching in the same way that their western counterparts have done.

Some people argue that developing countries should not even consider copying the technology-rich model of western education systems, due to issues concerning sustainability, dependency and the appropriateness of assumptions underlying western models (and practices) of education. However, the situation is complex because governments frequently rely upon funding from donors in the west that often gets channelled through charities and other Non-Governmental Organisations with their own development agendas. While there have been many relatively small-scale technology for education projects in recent years, few appear to have made a lasting impact.

Many such projects have experienced considerable difficulties in terms of equipment and running costs, on-going training and support, practical problems and sustainability issues. There are a variety of potential disadvantages in relation to the effectiveness of such projects. For example

- Attempts to imitate a western resource-rich model would almost certainly be extremely expensive and impossible to sustain in the medium to long term;

- Ownership issues (relating to software, systems and 'intellectual property') might continue to favour western suppliers and discourage the development of local initiatives and providers;

- Belief among politicians, policy-makers and administrators that technology itself is the main the agent for bringing about significant changes in educational systems (rather than acknowledging the essential role of those who are directly involved in the processes of teaching and learning).

Some of the projects are clearly based upon a deficit model of education, with technology being seen as the means by which knowledge and information resources (mainly of western origin) can be made available to learners in developing countries. Others, however, aim to enable developing countries to 'leapfrog' some established western institutional and educational practices through the use of newer technologies. A very significant example is the expansion of mobile wireless telecommunication which not only improves communication for people in remote locations, but also avoids the need to extend and upgrade existing landline telephone systems in order to widen and improve Internet access. In the last few years the coverage of mobile phone networks has expanded dramatically even in poorer countries and the growth in access to and use of mobiles has been phenomenal.

Growth in mobile networks and the escalating capability of 'low-tech' digital devices mean that education systems in developing countries will not necessarily have to follow the western model of technology adoption. Increasingly, relatively modest (but nonetheless significant) innovations are making an impact upon educational practices in technology-poor areas.

The articles in this section

The three articles in this themed section provide accounts of a variety of ways in which technology is enhancing education in technology-poor contexts. A common focus for these articles is a concern not only to develop the knowledge and skills of teachers (in schools and universities), but also to promote change in their teaching practices. All three studies involved the use of qualitative methods for data collection and analysis in order to develop a deep understanding of the situations and experiences of the participating teachers.

The Open Educational Resources (OER) movement promotes the sharing of quality educational content that is made freely and openly available to anyone willing and able to use it. Technology enables resources developed locally, nationally and

internationally to be pooled, adapted and used for teaching and learning in a variety of contexts and at all education levels. Ngimwa and Wilson report on emergent issues concerning the use of OER in Sub-Saharan Africa. Socio-cultural and technical issues affecting the adoption of OER were explored, using case studies in Kenya, Uganda and South Africa. Their study found that lack of awareness, traditional academic attitudes and policy-related issues at institutional and national levels were considered to be greater obstacles to OER use than were the technological challenges.

The study by Wang and Lu examines the use made of an online Community of Practice for teachers' professional development in a secondary school in China. Teachers were able to prepare lessons collectively, share resources, reflect on their teaching practices and receive comments from peers. Participating teachers reported that this was effective for their professional development, enabling them to gain from the knowledge, experience and support of colleagues and from reflection upon their own practices. Over time, transformational changes were observed in terms of pedagogic practices and the learning activities of students. However, strategies need to be developed to promote active use of the online Community of Practice by teachers who did not initially participate.

Shohel and Kirkwood report on the use of mobile devices to support the professional development of secondary school teachers in Bangladesh. Audio and video sequences on portable media players and associated print resources were provided to promote the teaching and learning of communicative aspects of English language. The media players enabled high quality resources to be used for teacher development and also in classrooms with students. They also helped teachers to acquire and build, with local support, pedagogic strategies and activities that were effective in promoting students' speaking and listening skills in English; a core part of the curriculum.

These three articles illustrate only a few of the different ways in which technology can act as a catalyst to enhance teaching and learning. They demonstrate how technology can make considerable contributions to the professional development of teachers and, consequently, have an impact upon students' learning.