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Should We Be Allowing Technology to Remove the "Distance" From "Distance Education"?¹

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Abstract:

Some researchers suggest that the rapid evolution of increasingly sophisticated e-learning technologies, in combination with synchronous delivery, have resulted in the death of distance education. This paper distinguishes traditional distance education from e-learning, on the basis of geographical separation of teachers and students, no online access requirements, and the historical rationale for distance education. These and other factors, including relative costs, point to longevity, rather than an early demise for this form of distance education. Education for sustainability (EFS) is used as a cautionary case study to illustrate the ways in which e-learning may not adequately serve the goals of EFS as well as traditional distance education. Caution is urged in the further development of e-learning policies to ensure that they distinguish traditional distance education on the basis of its ongoing, special value to learners.

Is distance education disappearing? Tertiary institutions around the world are under pressure. Technological developments have resulted in a major impetus towards greater flexibility in relation to time, place, pace, and learner entry, where institutions are expected to be at the centre of the move towards an online, global village (Newman et al., 2004). The reach of this tertiary reform is shown by the development of World Trade Organisation initiatives which are designed to reduce obstacles to international trade in open and distance education (Stella & Granam, 2004). Competition among universities for online student

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enrolments is increasing, and inflammatory statements like the following can be found in the literature: "Unless universities change radically, they will cease to exist in the twenty-first century" (Jones & O'Shea, 2004).

Will traditional distance education cease to matter in these future online worlds? Researchers such as Oblinger (2001) see distance education as still serving a limited, if much more commodified role in the future. While market forces elevate the importance of e-learning, traditional distance education could survive as one of a number of "sticky strategies" which institutions adopt to encourage student loyalty in lifelong learning.

Others are less circumspect. "The death of distance!" proclaims a Harvard business book by Cairncross (1997). Many policy makers, researchers, and practitioners in higher education now use the term "distance education" and "e-learning" interchangeably (Arnold, 1999; Evans & Nation, 2000; Guri-Rosenblit, 2005). Terms including "distance education", "distance learning", "distributed learning", and "on-line learning" are considered increasingly synonymous by some (e.g., Twigg, 2001). Brown (2004) comments on the disappearing distinction between face-to-face and distance education, as the two delivery modes become integrated, and synchronous delivery is facilitated by new technology. Stella and Granam (2004) consider that distance education may now be viewed as a subset of distributed learning, focusing on students who are separate in time and space from their peers and instructor. The rationale is predicated upon the number of United States colleges and universities which have planned, or are planning to be, engaged in online learning.

The purpose of this article is to distinguish traditional distance education from e-learning. Its overall conclusion is that problems may occur if the two terms are used interchangeably. Specific objectives are:

- 1) To demonstrate that e-learning is not the same as distance education, and to reveal the risks in confusing e-learning with distance education;
- 2) To contrast the central tenets of distance education with e-learning, in order to show that e-learning may serve goals that differ substantially from those of distance education;
- 3) To use Education for Sustainability as a case study, in order to demonstrate the risks of equating e-learning with distance education.

Working Definitions

The current definition of e-learning provided by the New Zealand government is:

Learning that is facilitated by the use of digital tools and content. Typically, it involves some form of interactivity, which may include online interaction between the learner and their teachers or peers. (Ministry of Education, 2004)

The definition of the Higher Education Funding Council for England is more expansive:

The use of technologies in learning opportunities, encompassing flexible learning as well as distance learning; and the use of information and communication technology as a communications and delivery tool, between individuals and groups, to support students and improve the management of learning. (HEFCE, 2005)

These definitions share a central theme of learning that requires an online presence, involving various digital learning tools. In contrast, traditional distance education envisaged teachers and students separated from each other geographically, where the gap was bridged by means of posted course materials, and some form of communication, whether by letter or telephone (Peters, 2009). Even with the advent of email, which is now routinely used (but not essential) to distance education, the requirement for a computer or ICT technology is not a necessary element in its definition. For example, Williams et al. (2004) define distance education as "Education imparted where the learner is physically separated from the teacher, in a planned and guided learning experience, consisting of a two-way structure distinct from traditional classroom instruction."

Distance Education and E-learning: Not the Same Thing

Based on the above definitions, distance education (as it has traditionally been viewed) can readily be distinguished from e-learning because:

- 1) There is geographical distance between teacher and student;
- 2) An online environment is not required;
- 3) Learning is "planned and guided".

Are these real distinctions? For example, isn't distance also a factor in e-learning? The answer, surprisingly, is *no*. Baggeley (2008) notes his

own surprise while visiting Massey University in New Zealand to find that many full-time students were enrolled in off-campus, distance education courses involving print-based study guides and packaged course readings. The reason was at least in part related to their belief that off-campus students receive better study materials than on-campus students. Odd though it may seem, e-learning at most universities and colleges isn't used for distance education purposes (Guri-Rosenblit, 2005). It primarily serves the needs of on-campus students. The detrimental effect of equating e-learning and distance education is that the e-learning resources which campuses used initially to retain or capture students who wanted more flexibility in delivery have actually resulted in the strengthening of campus-based education, resulting in more educational capital being given to those who already have it, rather than to the "have-nots" and other marginalised students served by traditional distance education (Thompson, 2007).

In contrast, distance education serves the needs of special interest students who, for a variety of reasons, cannot attend face-to-face meetings at a conventional campus. The archetypal distance education student is one who is more likely to be mature, working full-time when enrolled, and possibly a second chance student (Verduin & Clark, 1991). Notwithstanding increasing world-wide use of the internet, this profile of students studying by distance hasn't changed (Guri-Rosenblit, 2005).

While the fact that traditional distance education does not require an online environment might seem trite, it raises important issues of access and equity. That is because distance education can cater to students who do not have access to a computer (or are unwilling to use one). Students in my own environmental studies courses, for example, consistently include a fraction which live remotely, are incarcerated, are retirees uncomfortable with computers, or simply do not access the online campus web page associated with the courses in which they are enrolled. Unfortunately, pilot studies in New Zealand have demonstrated that the provision of universal physical access to computer technology does not generally increase computer use (Anderson, 2005).

The lack of uptake of computer technology in New Zealand is based partly on cultural factors. For example, Māori education is customarily undertaken in face-to-face teaching, involving the application of knowledge regarding Māori custom and tradition. Anderson (2005) argues that Māori and others who are typically disadvantaged in New Zealand's system of education (including low income earners, rural

dwellers, solo parents, the unemployed, disabled people, and those with poor literacy) face the same disadvantage when confronted with the online world. In contrast, he maintains that distance education in New Zealand is generally seen as providing value because of its long history, which has resulted in a centralised system of print delivery, undertaken by two or three key delivery institutions.

In terms of the third factor noted above, isn't e-learning also "planned and guided"? Indeed, proponents of e-learning argue that it has allowed the distance in distance education to disappear. The newest technologies permit synchronous communication, blurring the final physical barrier between teacher and learner. However, whether it replaces concepts of distance with some other descriptor of learning, be it "blended" or "distributed", problems may remain in how e-learning approaches learning. For example, e-learning suggests semantically that learning is actually taking place, when in reality what e-learning may refer to is a complex mix of technology and delivery, without any necessary connection to a particular body or theory of learning (Thompson, 2007).

Early suggestions that e-learning would provide a panacea for a variety of tertiary education ills, notably competition among providers, have resulted in more critical recent assessments of its value in education. Studies of e-learning have been cautious about claiming any educational advantages (Alexander & Boud, 2001). It may in fact produce increased disengagement from the learning process, in which students feel alienated, unless care is taken to ensure an integrated approach to education (Madoc-Jones & Parrott, 2005). A major United States study by Zemsky and Massy (2004) shook the e-learning world with its critical rejection of major e-learning assumptions, including the usefulness of the technology, its palatability to students, and the capacity of e-learning to change the face of teaching. Fox and Hermann (2004) cite a number of studies which detail contradictory and largely negative tales of the use of new technologies in higher education.

This is not to say that distance education is spared from its own developmental problems. Distance education has suffered, in part because of the very nature of the marginalised student body it serves, which comprise a minor component of mainstream education. Most tellingly in today's corporatized educational environment, they also bring in fewer dollars. But there are exceptions. Saba (2005) describes substantial growth in certain niche sectors, such as the U.S. Armed Forces. Overall, however, distance education delivery is characterised

by a diversity of media and methods, resulting in a lack of uniformity in delivery techniques, fuelling claims that it is impersonal and less effective than mainstream education (Baggeley, 2008). It could be for this reason that some distance education scholars may even shun the term, preferring to marginalise distance education even further by bringing it under the umbrella of e-learning (Thompson, 2007).

Constructivist learning theory has been the primary pedagogical tool in the development of e-learning principles, and a number of studies have been devoted to it (Gruba, 2004). Some authors have called the developments in technology applied to e-learning a revolution of new learning, particularly with regard to the joint influence of constructivism and ICT on learning. Authors such as Martens et al. (2007) list characteristics of such learning, including collaborative work and learning, development of higher order skills, self-assessment, coaching, independent learning, all in the context of e-learning.

Overall, however, the result of rapid technological development and changes in e-learning delivery is that there may be a lack of a theoretical framework to guide training design for e-learning, or its derivatives, including distributed learning (Salas et al., 2002). Distributed learning programmes have sometimes been driven by technology, in terms of availability and cost, rather than by learning goals linked to desired cognitive and behavioural competencies, to the extent that some providers have deliberately distanced themselves from pedagogical issues. There is even a term applied to the mapping of new technologies onto existing platforms, "repurposing", which requires no reconceptualisation of learning (Kozlowski & Bell, 2007).

Problems have also occurred as technological advances have occurred within "purer" distance learning. There is at present a lack of consensus in distinguishing distance education, open, distributed and flexible learning, and even dispute as to the meaning of "lifelong learning". This has resulted, according to Hedge and Hayward (2004), in lifelong learning policy statements that have economic issues at their core. In them, lifelong learning contributes to the wealth of society, but with only a token nod given to individual growth.

Notwithstanding these difficulties, distance education has its own pedagogies, developed over time, based on the pioneering research of educators such as Peters, Moore, Wedemeyer, and Holmberg (summarised in Holmberg, 2003). In tracing the historical development of distance education, Muirhead (2005) identifies its key characteristics as follows:

- physical separation of students and instructors;
- structured learning activities, involving the development and distribution of educational materials;
- non-contiguous interactions;
- the presence of institutional structures, and specialised knowledge.

Arguably, these are also characteristics of e-learning. However, traditional distance education theories emphasise the view that distance education is a fundamentally different form of education, offering special opportunities for learning (Simonson et al., 1999). For example, distance education emphasises individual student learning at a suitable “transactional distance”, with very clear-cut channels of communication and defined tasks, based on print-based materials (Holmberg, 2003). In contrast, the fluidity of e-learning may create uncertainty about roles and outcomes. Evidence for this can be found in e-learning research about the education of Māori students in New Zealand (Mitchell et al., 2005). This study points out that a shared teaching role among people in a team can be a disadvantaging factor for Māori learners, and that a clearly defined separation among learners is advantageous, which may not occur in e-learning group tasks. Although this is largely a design and delivery issue which could be overcome using various e-learning strategies, the notion that group work may appear on the surface to contradict notions of individual transformation is a cautionary flag in the development of e-learning programmes for targeted learners.

To the three distinguishing factors noted above, a further factor of cost could be added. Distance education has allowed the substitution of capital for labour, in terms of educational materials for teachers’ time, which has resulted in lowered costs compared to face to face teaching (Rumble, 2001). However, studies cited by Rumble (2001) have found that online versions of courses are less cost-efficient across a number of enrolment levels, compared to print-based materials. This is not surprising, as industrial models of distance education envisage large numbers of students taught by a handful of tutors. In contrast, best-practice e-learning involves direct interaction among small numbers of students and expert facilitators, which is more expensive, and does not provide similar economies of scale (Guri-Rosenblit, 2005). Much of the extra cost is tied up in tutor support (Fox & MacKeogh, 2005).

Case Study: Education for Sustainability

Education for Sustainability (EFS) is offered as a case study to support the desirability of continuing to distinguish e-learning from distance education. EFS has undergone a considerable transformation from its early roots in environmental education. From the 1970s to the 1990s, it was largely concerned with the practical value of raising awareness about the environment. EFS now encompasses a multidisciplinary approach to people, communities, and economic development, with a proactive approach to maintaining the life-supporting capacities of natural and physical resources (Huckle & Sterling, 1996; Blewitt & Cullingford, 2004).

New Zealand is a typical example of how EFS has developed. It has been driven in large measure by international agreements and obligations. They include acceptance and adoption of the 1987 Brundtland Commission definition of sustainable development at various government levels, and Agenda 21 of the 1992 Earth Summit (in which environmental education is mentioned repeatedly). The Ministry of Education has undertaken a number of EFS initiatives since the launch of the National Strategy in Environmental Education (Ministry for the Environment, 1998). Further progress has been associated with the goals of the United Nations Decade for Education in Sustainable Development 2005-2014.

There is a special, striking relationship between EFS and distance education. They share the following qualities:

- They are both characterised by independent study, leading to individual transformation (Gunawaradena et al., 2006). At the core of EFS is a paradigm of environmental education involving education about the environment (content learning), provision of case studies in the environment (experiential education), and the aspiration that the two will produce graduates personally motivated to advocate for the environment (Fien, 2004). The transformation from mere acquisition of knowledge to environmental advocacy is a key theme in EFS.
- Both favour lifelong learning, with sustainability education fostering the inculcation of respect for the environment beyond compulsory schooling (Palmer & Neal, 1994).
- Both emphasise access to education, with EFS particularly interested in reaching out to rural areas where “go local” environmental initiatives are likely to have the greatest impact.

- Sustainability education is directed towards empowering a wide variety of student stakeholders, including minorities, and “have-nots”. These target audiences are ideally suited for distance education delivery. Distance education provides extension training to a variety of working professionals in developed and developing countries, targeted teaching, and the opportunity to transform student views about the environment throughout life, and across geographic barriers (Tahir, 2001).

Environmental educators have not been remiss in noting this special relationship with distance education, and studies have been devoted to it (Leal Filho, 1997; Leal Filho and Tahir, 1998). With its lower carbon costs, and much greater geographical reach, it seems intuitively obvious that online learning would provide an additional platform for the design, development, and delivery of EFS education. A more critical examination, however, reveals the following issues.

E-learning may not improve delivery of EFS

This issue applies not only to EFS, but to any education which attempts to reach marginalized or otherwise insular groups of students. They include those least likely to have access to computer technology. It is most noteworthy in the context of the “ yawning digital divide ” first raised by Koffi Annan, speaking in 1999 to the Millennium Assembly (Gourley, 2004). The “ divide ” refers to the gap between people at difference socioeconomic levels with regard to their opportunities to access ICT technologies and the internet.

EFS attempts to get round the issue of student access via extension programmes delivered by distance in developing countries (Tahir, 2001), where environmental-related programmes offer practical skills in agriculture, health, and other areas useful to students who are working in both rural and urban areas. One aspect could be to increase computer access. However, ownership is not the same thing as use, so that determining the actual number of computers per capita says nothing about their general concentration in the hands of government, multinational corporations (MNCs) and non-governmental organisations (NGOs) in many countries, as opposed to how many actually end up in indigenous hands (Gourley, 2004). This problem may be resolved over time, with technological advances in connectivity, cost, and language software. However, in the near-term e-learning would appear to be of limited use to EFS in these circumstances.

E-learning may have sustainability issues

Distance education delivery shows great promise for reducing carbon costs, adding legitimacy to its use as a platform for EFS delivery. This is because most of these costs in tertiary education are tied up in student travel, and in building infrastructure. A study at the Open University in the United Kingdom has shown that distance education courses can lead to an enormous 87% reduction in energy, plus 85% lower CO₂ emissions than full-time, face-to-face, campus-based courses (Roy & Potter, 2008).

Although Roy and Potter (2008) found that distance education resulted in huge savings in carbon emissions, they did not find the same relationship when they compared e-learning and print-based delivery. Part of their study distinguished print-based and on-line courses. They found that on-line courses showed only a 20% reduction in energy and 12% reduction in CO₂ emissions over print-based courses. The authors conclude that on-line delivery produces only marginal improvements for the environment, presumably due to the overwhelming influence of other factors, notably travel and the built environment.

In addition, the hardware and upgrading requirements for e-learning are unlikely to be consistent with sustainable campus operations, or with sustainable home learning environments. A compelling question can be raised about whether the pursuit of technology in e-learning distance education initiatives is actually helping the environment. Research by Fuchs (2008) points out sustainability issues and downstream effects associated with a variety of virtual products. Overall, the validity and branding of “ green ” distance education would be seriously undermined if the requirement for computer upgrades with short shelf lives, networking, and associated electricity costs were to produce sustainability problems of their own.

Conclusions

This paper should not be construed as advocating a Luddite approach to e-learning. So long as its limitations are recognised, and the danger of lumping e-learning with traditional distance education is avoided, the online components of e-learning offer splendid opportunities to support and further the goals of distance and sustainability education. For example, e-learning may be able to support “ communities of wisdom ” via “ social constructivism ”, a term used by Brown (2004) to describe

communities of practice where the real expert is not the teacher, but the “community mind”. E-learning could help to capture and structure knowledge, by focusing on the ability of learners to find and evaluate existing knowledge, and to integrate it into their own world of work and lifestyle. This would allow e-learning education to “go local”, by accumulating and filtering local wisdom in otherwise geographically isolated areas like the Canadian Arctic, a key goal of sustainability education (Robinson, 1992). The savings in cost, hardcopy handling, and the efficiencies in storage, retrieval and handling of assignments alone is but one small advantage that the new technologies promise to bring to distance education (Sheung-on, 2004).

There is also outstanding potential for e-learning to facilitate transdisciplinary approaches to sustainability. As Jones and O’Shea (2004) point out, the blurring of traditional departmental boundaries has resulted in the development of on-line modules and the creation of multi-disciplinary teams. Trans-disciplinary approaches are much sought-after in sustainability education, but have been hampered by the compartmentalisation of disciplines characteristic of most current higher education providers.

E-learning technologies foster on-line collaborative learning. If mastered, the payoffs will be huge, including equality of participation, a lynchpin of distance and sustainability education. For example, computer-mediated communication reduces social context clues related to race, gender, handicap, accent, and status, as well as reducing non-verbal cues such as frowning and hesitating, which can intimidate classroom participants (Salas et al., 2002).

A key recommendation arising from this article is the need for more engagement by as wide a body of stakeholders as possible in the development of e-learning strategies. In New Zealand, there is at present no national e-learning policy. An interim framework was established in 2002 at the behest of a governmental advisory group (Campbell, 2001; Ministry of Education, 2004). The adoption of e-learning has largely been driven by market forces, working in tandem with New Zealand’s Tertiary Education Strategy 2007-2012. Its primary goals are promoting success through lifelong learning, creating knowledge to drive innovation, and furthering connections among tertiary institutions and the communities they serve. There is no specific inclusion of an e-learning strategy. In a survey of 18 New Zealand tertiary institutions (including more than 800 tutors), Mitchell et al. (2005) found that a recurring theme raised by respondents was the

perceived need by institutions to obtain a competitive advantage through e-learning. This is quite a different driver from the stipulation of a preferred learning type or outcome.

In conclusion, Muirhead (2005) identifies three possible futures for distance education:

- defining itself as a teaching and learning practice;
- returning to a more traditional role of advocating for non-traditional learners;
- positioning itself as a “technique” in the blended learning environment of the 21st century.

In the interim, Thompson (2007) refers to a number of distance education studies which have attempted to explore learning in computer-mediated education, in essence keeping the flame of distance education research alive, for those who are interested. The result of e-learning being viewed as a totally new form of education has been a lack of connection to earlier distance education work, and a focus on its instrumental value in programme evaluation, “how to” reports, and “best practice” options. It is important to remember that “distance” was not limited in initial conceptualisations to physical distance, but was a characteristic of interpersonal interaction. Its special role in education should not be minimised, or subsumed by e-learning policy and practice.

Note

- 1 This paper was prompted by the United Nations Decade for Education in Sustainable Development 2005-2014.

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