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Where did distance education go wrong?

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Distance education (DE) practices around the world use a wide range of audio-visual technologies to overcome the lack of direct contact between teachers and students. These are not universally adopted by DE teachers, however, nor even encouraged by their institutions. This article discusses the organisational attitudes that can lead to outdated methods being maintained and successful ones abandoned, and it suggests that, just as educational television and programmed learning were supplanted in previous decades, so the World Wide Web could be abandoned as a viable education medium in the foreseeable future and replaced by more widely available media such as the cell phone. The article contrasts the learner-centred philosophies underlying current DE approaches with the teacher-centred philosophies of a generation ago. If these two philosophies are not united in a sensible middle ground, the article suggests, history may come to regard today's DE as a Dark Age less enlightened than when Genghis Khan sent his arrow riders to deliver the mail in person across the Mongolian steppes, and when Lenin dispatched educational media experts to deliver DE materials by hand across the post-revolutionary Soviet Union. The main losers in this scenario, the article concludes, will be the students of the developing world.

Keywords: appropriate technologies; developing countries; e-learning; open and distance learning; open courseware

Introduction

The question in the article's title is rhetorical. For the sake of provoking discussion, it deliberately de-emphasises the question about the ways in which distance education (DE) has got it right. These are considerable in number, for DE offers educational opportunities to countless worthy students, who cannot gain them by other means. Many educational movements have come and gone over the years, however, regardless of their intrinsic value – and sometimes a little future-gazing can help: from the vantage point of the future, the lessons of the past may be recognised more clearly than they would be otherwise. Miller (1971) indicated this in his analysis of Marshall McLuhan's contribution to our understanding of the media, suggesting that he successfully shocked the communications industry into a realisation of awkward truths by building a gigantic web of lies. While this article aims to tell no lies, it does attempt to analyse certain recurring problems of DE in the present day, through the rueful gaze of a distance educator a decade from now.

How improbable is it, for example, that 10 years from now one might read the following?

> The twentieth-century DE movement began well with worthy liberal ideals, a celebration of powerful communications media in the name of open learning. Somewhere along the way it failed to fulfil its early objectives, even developing 'closed learning' methods in conflict with the goals of its founding fathers. By the year 2010, uses of the Internet and World Wide Web were being abandoned

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> as a valid DE medium, just as ETV and programmed learning had been marginalised previously; and few DE specialists any longer reminded themselves of the embarrassingly impossible Millennium Development Goal of 'Education for All by 2015' promised to the peoples of the world, courtesy of DE and other technology-based methods. Millions of needy learners around the world lost all reasonable hope of gaining an education via inaccessible Internet-based methods, and the massive open universities of the world abandoned their attempts to use online technology for reaching remote and disadvantaged learners, and concentrated instead on educating the urban and easily accessible. (Anon, 2018)

This hypothetical account of the rise and fall of modern DE may seem cynical and speculative, but it is not improbable. It is based on comparisons between today's DE practices and ideals and those of previous educational media generations. The account also aims to be constructive, generating a discussion of problems often neglected by distance educators and institutions in the effort to maintain their investments of time, money, and energy in support of outdated DE approaches. *Cognitive dissonance* is the term coined by Festinger (1957) for this human tendency to deny uncomfortable observations that conflict with current practices and beliefs. Festinger observed the way in which a doomsday cult predicted the earth's destruction by alien UFOs, and the rationalisations the cult formed when the cataclysm did not occur. He argued (Festinger & Carlsmith, 1959) that cult followers perform time-wasting and irrational tasks in the belief that they will ultimately achieve glorious ends, especially when they are not paid too much to do so ('induced compliance'). It would be unfortunate if, in years to come, the hard work of today's distance educators were to be dismissed as a futile set of 'induced compliance' tasks in this way.

A constructive way to avoid such an outcome is to confront the denial that can cause it, while there is still time for improvement. The value of a periodic examination of such problems is clear. DE has survived as a modern educational phenomenon for half a century, so it must be doing much that is worthwhile; but in large organisations successful methodologies do not always succeed on their merits, and a single wrong footing can provoke a bureaucratic rationale for cuts, especially when highly vocal individuals are biased against the methods involved.

The evolution of DE

Since the 1960s, modern DE has evolved through a series of delivery methods with an increasingly sophisticated set of techniques for teacher–student and student–student interaction (Moore & Kearsley, 2005; Taylor, 2000). From the correspondence model using the telephone and postal service to the online conferencing methods of today, DE methods have acquired a level of cost-effectiveness that provides teachers and students with a broad selection of methods for overcoming the obstacles of time, place, and pace while also engaging one another in direct interaction. The different DE approaches have not evolved sequentially in different parts of the world, however. Some of them are used simultaneously if not uniformly in individual DE institutions and cultures, while others are not used at all. While North American DE is characterised by widespread Internet usage, for example, DE in Japan is delivered by sophisticated satellite broadcasting media in which the institutions and their teachers have invested heavily (Schnack, 2005). Perhaps partly owing to the 'induced compliance' phenomenon, Japanese educators have been relatively slow to adopt the live interactive opportunities of Internet-based methods, and, as Schnack indicated, by 2005 only an estimated 18% of Japanese universities were offering online courses in more than three disciplines. In China, similarly, traditional broadcasting media are staples of DE delivery, though Chinese educators are also extremely curious about the Web-based delivery methods that have become standard in North American DE (Chen, Wang, & Chen, 2007). In Mongolia, innovative online methods are being explored in an effort to

overcome the problem of extremely slow Internet connections (Baggaley & Ng, 2005). In the Philippines, pioneering methods of using the cell phone and its short message services (SMS) technology are being developed (Librero, Ramos, Ranga, Triñona, & Lambert, 2007).

Such innovations give the lie to those opponents of DE who have consistently criticised it for blunt and impersonal approaches. Noble (1998) disparaged some DE institutions as 'digital diploma mills' in which efforts by the teaching staff to maintain academic quality are frustrated by the corporate mentality of the administrators; and Moll and Robertson (1998) described forms of DE as a rush to an automated, cafeteria style of education serving private-sector interests at the cost of educational excellence. Such views, rightly or wrongly, are extremely influential, and to this day DE tends to be regarded as a second-rate, impersonal educational option from the earliest stages of its emergence in countries around the world: for example, India (Sharma, 2005); Cambodia, Laos, and Vietnam (Doung, Chhuon, Phanousith, Phissamay, & Tai, 2007); other regions of the developing world (Perraton, 2007); and at the global level (Carr-Chellman, 2005). So why do DE institutions not universally seek to eradicate this image by adopting the cost-effective interactive educational technologies available to them? Why is DE delivery still characterised internationally by a diversity of media and methods rather than by a mainstream body of techniques universally acknowledged for their efficiency? DE institutions and teachers could move rapidly towards the 'parity of esteem' with campus-based education that Jevons (1987) recommended, by universally adopting the best available techniques for providing a personal, interactive style of education comparable with that of face-to-face education. Or are some institutions incapable of 'planned abandonment,' the ability to move on once their practices have outgrown their usefulness (Drucker, 1974)?

It is possible that some DE providers simply do not acknowledge these external criticisms and subscribe to an entrenched compliance with an institutional view that, as Kerlinger (1960) put it, 'to question the mythology amounts to heresy' (p. 149). As one reviewer of this article suggested, for example: 'sources such as Noble are highly polemical, with almost no evidence to support their views.' Widely held views do not need evidence in order to persist, however, and all the contrary evidence in the world may not prevent them from being dogmatically maintained. So it is folly to dismiss such views lightly and to fail to check whether they reflect problems that need fixing. This is not to suggest that distance educators have not given serious attention to the criticisms of DE's impersonal methods. A notable attempt to address the problem has been the development of hybrid ('blended') DE methods, combining, for example, online delivery with face-to-face sessions (Rogers, 2001). Face-to-face meetings are not an option, however, for the millions of developing-world DE students who are separated from their teachers and each other by insuperable distances, and for whom a requirement to supplement their course fees with expensive travel costs would violate the open learning principle. As Doung et al. (2007) have indicated, the number of people requiring education and training at a distance is in the tens of millions in Cambodia, Laos, and Vietnam alone.

One can applaud DE institutions for their dedication to the massive effort of designing and producing sophisticated learning materials for students who could not gain a formal education by any other means. Ironically this can lead to the availability of more sophisticated and flexible methods for off-campus students than are typically available to on-campus students. In a recent visit to New Zealand's Massey University, for example, where 60% of the students are off-campus, the writer learned of a tendency for on-campus students to enrol in certain courses as extramural students, believing that the off-campus students receive better study materials. The proponents of 'distributed learning' urge that all students should receive the same treatment, that a uniform infrastructure should be created for on- and off-campus students alike, and that the traditional differences between DE and campus-based delivery methods should be eroded (Oblinger, Barone, & Hawkins, 2001). Via this philosophy, 'distance learning' is seen as a subset

of 'distributed learning,' primarily distinguishable by its lack of face-to-face interaction. If these recommendations were universally followed, and all teachers and students had easy access to one another via cost-effective, live methods (for example, uses of voice over Internet protocol: VoIP), criticisms of DE's impersonal nature would rapidly be addressed, DE teachers and students would interact with at least the same efficiency as in classroom interaction, and DE could be fairly described as a sterile, impersonal process no longer. Yet, to this point, there is no region of the world in which DE is fully based on the interactive capabilities of modern technology and on direct forms of teacher–student and student–student interaction comparable with face-to-face communication. The next section examines this slow process of technological adoption and proposes ways of moving forward.

The pre-history of DE

It could be argued that the slow adoption of interactive media in DE is merely a passing phase in the field's overall development from asynchronous (recorded) to synchronous (live) delivery. The long-term picture of DE's evolution, however, demonstrates the opposite trend: the evolution of DE from live to recorded methods. The earliest DE approaches involved enormous efforts to achieve effective face-to-face communication despite massive geographical hurdles; and they lasted fitfully for a thousand years. Mongolian educators, for example, point to the fact that Genghis (Chinggis) Khan established a national 'mobile learning' system whereby information was carried by speedy horsemen ('arrow riders') for face-to-face delivery 800 years ago (Rahim, 2005). Though stereotyped in the Western world as a marauding tyrant, Chinggis is revered in modern Mongolia for such nation-building practices. A similar approach was adopted by the Chautauqua movement established in the late nineteenth century (Rieser, 2003), which took educational presentations by road and waterways across eastern USA and Canada. In pockets of the USA, the tradition is maintained to this day. The Polish film-maker Dziga Vertov developed a sophisticated community development approach in 1919, taking educational film on the railroads of post-revolutionary Russia – a peripatetic educational media approach complete with principles known today as instructional design and formative evaluation (James, 1996a, 1996b). As James indicated, the use of entertainment for education by the European travelling players predates all of these methods, with roots in the miracle plays of the eleventh century and earlier. Each of these methods featured 'mobile' media (horses, wagons, boats, and trains) to take the teacher and educational materials directly to the students. There is nothing essentially new in the mobile learning movement of today, therefore.

In this greater historical perspective, modern DE is merely the tail end of a thousand-year development process. Whereas the 'pre-modern' delivery methods of the eleventh to twentieth centuries maintained an emphasis on direct contact between teachers and students, however, current DE delivery methods have neglected that priority and have represented indirect, asynchronous communication approaches as the best options available for distance-based teacher–student interaction. Even the role of the teacher has been eroded by some of DE's proponents, in the belief that 'constructivist' methods provide an adequate educational alternative by placing the student, wholly or in part, in charge of constructing his or her learning (Jonassen & Rohrer-Murphy, 1999). This philosophy provides a valuable reminder that learning should be an active rather than a rote process, but it can also encourage an emphasis on extreme 'learner-centred' approaches that rule out the need for any form of direct teacher intervention.

The 2001 decision by Massachusetts Institute of Technology (MIT) to make all of its course materials freely available on the Web has inspired an enthusiastic and altruistic 'open courseware' (OCW) movement that may exacerbate this trend; for it makes educational content freely available even outside a formal supervised framework. Examining a cross-section of the

1800 courses published by MIT to date (MIT OpenCourseWare, 2007), one finds a wide range of course materials written in numerous styles with the excellence to be expected of MIT's teachers. In the hands of the new Wikiversity (2006), however, to which anyone may contribute materials, the OCW philosophy is more disconcerting. Openness of access to educational resources is a vital principle, but the notion that they can be openly deposited is another matter altogether, far removed from the philosophy that study materials should be subject to careful vetting and instructional design. The originator of MIT's OCW movement, former president Charles Vest, has acknowledged that quality control, copyright, and online bandwidth are major issues that the movement has yet to address (Vest, 2006); and the popularising of an approach whereby lecture notes and materials are deposited for students to use without teacher support represents a return to the impersonal methods which DE should be attempting to replace. The approach takes the 'cafeteria' model lamented by Moll and Robertson (1998) to new heights and uses the Internet as the most basic kind of non-interactive archive.

Many previous models of educational delivery have also been eroded by failure to make good use of the technologies underlying them. The 'programmed learning' philosophy of the 1960s and 1970s, for example, maintained that educational materials should be carefully tailored to students' varying needs, by being designed to be studied in flexible sequences and at different paces (Kay, Dodd, & Sime, 1968). The proponents of programmed learning were motivated by a desire to give the learner a higher priority in the educational process, to anticipate individual differences in learning style, and to build in appropriate reinforcement schedules. Ironically, this and other products of behaviourist thinking are now described as manifestations of an over-zealous teacher-centred philosophy that 'fell short of producing positive effects within the complex context of the classroom' (Jones & Brader-Araje, 2002, p. 1). The design of programmed learning's looping and branching materials, both in print and on 'teaching machines,' was costly and time-consuming, and by the 1980s the movement had faded from the educational scene (Vargas & Vargas, 1992). Today's efforts by DE institutions to create high-quality DE course materials are no less costly nor time-consuming than programmed learning materials, and their days could be equally numbered. MIT specifically has been dedicated to rendering conventional DE materials out of date since conceiving its original OCW strategy to replace delivery methods that it had decided were 'likely to be complicated, highly competitive, and unlikely to make money' (Vest, 2006, p. 20).

Looking back over the early history of DE, the educational analyst of the future may argue that the advent of exclusively learner-centred schemes effectively eclipsed DE's earlier emphasis on direct teacher–student access, and set the movement back into a greater Dark Age than prevailed when mobile DE initiatives were run by Genghis Khan and Lenin. In those days, the teacher and the student were both key elements in the delivery process. In recent years, by contrast, they seem to be growing further apart, owing to emphases placed exclusively on either teacher- or learner-centred methods. Perhaps not many years from now, commentators will note the dubious educational gains produced by these extreme approaches, and by easy methods of obtaining study materials without a teacher's support. At that point, OCW approaches may join the list of passé trends as programmed learning methods did before them. The historian may ponder how late twentieth-century teachers could possibly have taken the most informative and far-reaching communication media ever invented and discredited them by such blunt, non-interactive styles of usage.

The decline of sophisticated educational media

A communication medium does not have to be poorly used to lose face in the educational world. Even highly effective uses of the educational media can be discontinued on economical grounds.

Audio- and video-conferencing over telephone lines have been widely used in certain areas of DE (for example, telemedicine) since the 1980s, although in DE today these media tend to be used for administrative purposes rather than for teaching, owing to prohibitive telephone costs (Baggaley, 2008). The more recent, inexpensive VoIP methods are gradually taking their place (Baggaley, 2008), despite rationales that can be presented for resisting synchronous online conferencing in open learning altogether: for example, the fact that students may lack adequate facilities for it [true]; the security risks of opening institutional firewall to AV signals [easy to fix]; and the difficulty of scheduling live events in open learning institutions whose students have busy professional schedules during the day [good point, for some students if not all]. Certainly, the open learning philosophy is designed to overcome such barriers of time and place, rather than create new hurdles for the students by imposing fixed schedules upon them. A majority of the writer's own online DE students, however, *want and ask for* methods of live online audio contact to be made available to them; and many of them who live many time zones away cheerfully rise in the middle of the night to take part in synchronous audio discussions. After all, they presumably enrolled in the DE programme from their remote residences because its reputation promised to make such sacrifices worthwhile.

In the 'developed' world at least, the virtues of television were its great accessibility and its ability to carry the audio, video, and textual information of all other media (McLuhan, 1964). Unfortunately, during the growth period of educational television (ETV) from the late 1960s onwards, its producers tended to respond to its versatility by creating materials that were as complex and expensive as the productions of broadcast entertainment television – often excessively so for educational purposes (Fisch, 2004). With the arrival of the Internet in the 1990s, it became easy for administrators to justify disbanding the lavish broadcast-quality studios that had evolved for institutional video production (Moss, 2000). In place of the ETV production teams of the 1970s and 1980s, a new generation of multimedia designers was hired, who have since filled online repositories with Web-based course materials for students to access at their convenience; and history is now repeating itself as these materials become increasingly elaborate. Web-based delivery can work well in campus-based learning centres, where help in the use of the technologies is close at hand and bandwidth is in good supply. For DE students, however, possibly limited by slow, domestic online connections, the same materials may be too complex for easy downloading or even completely inaccessible. These students can also be placed at a disadvantage by institutional marketing departments that add corporate graphics to the Web pages without taking the trouble to compress them for accessibility's sake. Moreover, students may suffer these problems in silence, believing incorrectly that it is their problem alone, and probably of their own making.

Sadly for the students, the situation is not improving as DE institutions refine their Web-based delivery methods. With the development of the learning management system (LMS) software industry, new forms of database programming have evolved that are even slower to access than the HTML coding methods of 1990s Web materials. This problem is currently as serious in the expensive, proprietary LMS products as in the open-source software (OSS) packages that are providing an alternative to them. In the attempt to deal with these online accessibility issues, one notable guru has offered numerous Web usability principles as solid and well researched as the instructional design principles of the traditional educational media (Nielsen, 2007). Nielsen's principles receive justifiably wide attention in the corporate training field, where efficiency is a solid bottom line, but the educational world seems to pay little heed to them.

It is ironic that, in DE environments where synchronous audio methods are criticised for imposing pressures to conform to fixed schedules, Web-based practices can create equally serious accessibility barriers in violation of the open learning principle. When asked, DE students commonly provide evidence of the difficulties they face in accessing and using Web

materials. At the beginning of each online course, this writer collects information from his students about the technical facilities at their disposal (for example, speed of Internet connection, and size of random access memory), in order to help them diagnose and solve any operational problems that may arise during the course. Such assistance should be standard in DE institutions and courses. Otherwise, the DE situation resembles inviting the students to a state-of-the-art classroom and failing to check if the door is locked against them. A possible response to the problem is to suggest that DE has moved away from its original purist principle of access for all, and is now best regarded as *an ideal to be aspired to* rather than actually observed. Such attitudes form the basis for an elitist philosophy described with startling frankness by Speth (1996) as 'gargantuan in its excesses and grotesque in its inequalities,' and which two leading DE advocates and senior university administrators have echoed in discussing the inequities of today's DE field (Dhanarajan & Wong, 2007).

Gradually the Internet and Web are being suffocated by such ill-conceived design practices. One of Nielsen's recommendations was for Web programmers to stop using 'frames' to combine multiple online pages into a single screen display. Frames prevent easy bookmarking and printing of Web pages and create barriers for users who are obliged to use text-based browsers owing to poor eyesight (Mieszkowski, 1998). In their place, PHP methods have now evolved which overcome these problems, though with a loss of loading speed for users with slow Internet connections (Baggaley & Batpurev, 2007; Baggaley, Batpurev, & Klaas, 2007). These slower methods have become standard in the design of LMS course materials, raising questions about their appropriateness in developing countries, where even commercial Internet kiosks lack the bandwidth needed to access them. The problem is identical to the way in which ETV grew more complicated in the 1970s and 1980s, until finally the cost and effort of producing it became unacceptable.

It is to be hoped that these issues will be addressed by the active international communities of OSS programming volunteers who are committed to solving such problems and to creating freeware products as reliable and flexible as the best commercial software. In 2005, Canada's DE university at Athabasca in Alberta made a strong statement on behalf of OSS by moving from a commercial LMS standard to the popular OSS product Moodle TM, thereby preventing itself from becoming locked in to proprietary software over which it might have little or no control at times of product revision (Athabasca University, 2006). The move to OSS also allows institutions to design integrated LMS systems that precisely meet their students' learning and cultural needs – a freedom that the Blackboard LMS company is currently attempting to block by patenting the 'integrated Internet-based Education System' process (Downes, 2007). If such corporate strategies prevail in DE, attempts by institutions to create diverse types of learning material catering for students' specific needs may be stifled.

If Web-based DE delivery faces an uncertain future, the other staple of DE communication, email, has equally pessimistic prospects. Just as commercial ETV broadcasters brought advertising into the school classroom (National Council of Teachers of English [NCTE], 1992), so email is now awash with junk mail advertising drugs, pornography, and assorted dubious products, and is becoming increasingly invalid as a medium for educational communication. In the attempt to screen out the daily junk mail, institutions typically install anti-spam filters that routinely block valid incoming messages also. A typical default block for these filters is 'anything from abroad.' DE teachers whose students are abroad may find this a problem. The officially recommended solution is for the teachers and students to 'train' their anti-spam filters to distinguish the valid incoming messages from the undesirable ones; but since it is impossible to predict where hitherto unknown valid messages may originate, these software training attempts can never be fully successful. Ultimately, to ensure that valid messages are not diverted into the email 'junk' folders, all incoming messages need to be checked individually; and even this patient checking

strategy has problems – notably the viruses and other tracking mechanisms that can be awakened when one opens junk mail to check its desirability. When one has no way of knowing what has gone astray, email communication with individual contacts can rapidly break down. The situation generates a feel of helplessness, isolation, and futility which, if replicated among teachers and students in the DE world generally, will lead rapidly to the abandonment of email as a reliable communication medium.

The most widespread alternative to email in the DE toolkit has been asynchronous text-conferencing – a variant of broadcast email designed to overcome regular email's repetitive, time-consuming nature. Text-conferencing allows messages to be sent simultaneously to multiple recipients and automatically organised on group discussion boards for ease of reference and response. Since the 1990s, numerous simple and reliable freeware packages have evolved for asynchronous text-conferencing (Garber, Stein, & Baggaley, 2002). As the method's popularity grew, software manufacturers entered the field and vied to offer ever more fully featured, complex, and yet slow-loading packages. As a result, today's text-conferencing market is a sea of expensive software offering little or no improvement upon the simple, straightforward freeware packages of 10 years ago. Interestingly, when asked to compare newer, fully featured packages with simpler versions, a majority of DE students repeatedly states its preference for the simple software that spares them from having to learn, configure, customise, and navigate (Hotrum, Ludwig, & Baggaley, 2005). The text-conferencing approach does not succeed, therefore, merely on the basis of overcoming the repetitiveness of individualised email communication. It needs to be kept simple, to prevent it from losing its appeal as ETV methods did before it.

It is in the developing world that some of DE's most optimistic hopes are being expressed. The massive Asian open universities are looking enthusiastically towards the online DE practices of the 'developed' world, as a means to reaching the millions of Asian students who cannot access traditional education and training (Malik, Belawati, & Baggaley, 2005). Yet vicious locally produced viruses have been rampant in Asia for years (BBC World, 2003), and show no signs of abating. Labouring under such handicaps, even users with good online connections can come to doubt the adequacy of their facilities for a serious DE commitment. They also doubt their ability to overcome these technical problems by installing, for example, security and conferencing software that would solve them in a matter of minutes; and the growing demands for technical competence placed upon them increase the polarisation of society predicted by, for example, the European Union's Bangemann Report (1994):

> The main risk lies in the creation of a two-tier society of haves and have-nots, in which only a part of the population has access to the new technology, is comfortable using it, and can fully enjoy its benefits. (p. 5)

Venezky (2000) has likened the situation to that of the medieval community meal, at which the rich sat near the salt while the poor sat too far away to reach it: 'Comparable to those who sat below the salt are those today who have limited or no WWW access. They sit offline, disconnected …' (p. 67).

In Asian DE universities and colleges today, the growing negative attitude to online methods feels eerily similar to that which led to the rejection of ETV as impractically complex and unproductive a decade ago. Currently, Asian educators do not have the West's long-term investment in Internet-based course delivery methods, nor a 'cognitive dissonance' mindset persuading them to persevere with them. They only need to try online methods once, and to find them disaster-prone, inaccessible, or clumsy, before abandoning them out of hand. Assessments by Asian educators of Western-style information and communication technology projects are already frank and abrupt, as is evident in the 2005–2006 *Digital Review of Asia Pacific* (Akhtar, Charron, Chin, & Ng, 2005). Learning centre plans in Sri Lanka are described in the *Review* as

'a string of failures' (p. 144), and recent attempts to launch Web-based DE there have been abandoned in the face of the obvious drawback that only 3% of Sri Lanka's population has Internet access. A section about similar projects in Thailand is headed 'Rural Telecentres Miss the Bull's-eye' (p. 144). When Asian DE institutions finally turn their backs on the Web-based practices of the 'developed' world, they will do so precipitately, especially if they see alternatives.

The rise of appropriate educational media

In fact, Asian educators are already seeing alternative, inexpensive, home-grown DE delivery options on their horizon. Just as Western educational institutions discarded ETV in favour of promising Web-based approaches, so their Asian counterparts may reject the Web of Western DE in favour of home-grown uses of the mobile phone. Librero et al. (2007) have described the rapid growth of an Asian DE environment in which the cell phone and its texting methods are being used to substitute for inaccessible Internet-based media (for example, Web material, email). These writers have indicated how teacher–student interaction, schedules and grades, and every conceivable type of curricular, extracurricular, and administrative information can be made available by cell phone, and have described the Open University of the Philippines' pioneering work to this end.

Rather than emerging over time as in Western DE, different types of DE delivery are evolving in Asian education simultaneously and convergently. They belong to a new generation of Asian DE technologies in which the Web is reserved for campus-based delivery, research, and administrative purposes; videotape and CDs are produced for distribution to regions which lack Internet access; and the cell phone is used as the interactive glue linking the teachers and students in on- and off-campus settings alike.

The Virtual University of Pakistan, for example, specialising in education by broadcast television, has downloaded most of the MIT courses that include video lectures, and has transferred them to CDs for distribution by Pakistan's Higher Education Commission, without charge or violation of the OCW licence, to universities throughout the country (N. Malik, personal communication, 9 October 2006). This 'intermediate technology' strategy (Schumacher, 1973) has bypassed Internet access and bandwidth problems at a stroke. In the future analysis, the rise of these appropriate technologies in Asia may be regarded as both a wake-up call and a rescue mission for DE internationally. '[T]he answers do not always lie with the latest gizmos, and technologies should never be ignored because they may seem old-fashioned' (Latchem, Lockwood, & Baggaley, 2008). As long as the more appropriate methods become standard in DE, criticisms of its second-rate, arm's length, impersonal nature will no longer be valid. For the first time since face-to-face education was over-shadowed by modern DE technologies, direct interaction is once again being achieved using mobile communication media that are widely available at minimal expense.

But how long will it take for such methods to be universally adopted in international DE? Will the year 2018 see the following postscript from the writer whose paragraph opened this article?

> Where DE went wrong was in allowing direct methods of interaction to be replaced by a variety of blunt and ineffectual one-way techniques that grew increasingly inaccessible. Successive generations of DE delivery embraced useful ingredients for making education more flexible – the Web, email, online conferencing freeware – but designed their usage in increasingly unwieldy ways, unreliable for teachers and students in the developed and developing worlds alike. In this respect more than any other, DE made its greatest error, in failing to cater for the developing world that so urgently needed it. For a while, the cell phone brought interactive DE to millions of students who would not otherwise have access to it, until it too fell victim to the technical problems that had plagued Internet methods (advertising, viruses, dropped network signals, excessively elaborate usage techniques, etc.), and was abandoned as an educational medium. (The fear that cell phone usage might cause brain tumours, however, remains to be substantiated.) (Anon, 2018)

How can this scenario be avoided? It will be easier to create an effective and uniform style of DE delivery in parts of the world where existing technologies are not yet firmly rooted. One may assume that the Web, for all its problems, will not rapidly give way to the cell phone as the medium of choice in the 'developed' DE world. For those Third World and even First World DE students who will never have access to fast Internet connections, that is sad news. For them, DE will become increasingly less accessible as Web-based delivery methods continue to grow ever more elaborate. The 'developed' world will continue to be an 'undeveloping' one for these learners, the wry term used by Stegman in 1995 in predicting the decline of efficient social systems generally (Department of Housing and Urban Development [HUD], 2005). In the still developing world, however, there are fewer psychological obstacles to the rapid evolution of interactive DE delivery systems. This interactivity is likely to be based on technological extensions of campus-based lecture delivery: that is, a new form of 'distributed learning' in which the DE teacher will fulfil his or her responsibilities via live, synchronous presentations as on the traditional campus, rather than huddled over a computer keyboard.

These distributed presentations will be automatically recorded and made available (via podcasts, for example) for the students to access on demand by PC, cell phone, and the latest personal digital gadgets. The system will be operated and scheduled like a multi-channel radio station. Video interaction will be limited to where it is essential, as in telemedicine and the performance arts. The role of email in the process will be minimised, and course assignments will be submitted and returned by secure file transfer protocol (FTP) 'drop-boxes.' No distinction will be made between campus-based and remote students with respect to delivery, and both groups will receive the same quality of education and access to the teacher, even though this will not necessarily be in person. No special attention will be given to the production of course materials for remote students, because the same materials will be distributed to all students, with the teachers standing and falling by the adequacy and flexibility of their content as they always did. The terms *flexible learning* (hitherto associated in higher education with remote delivery alone), *blended learning* (associated with combinations of remote and face-to-face education), *distributed learning* (technology-mediated education made available to on- and off-campus students alike), and even *distance education* may become redundant as all students draw the same benefits from the delivery technologies. Indeed, *flexible learning* will be an awkward reminder of the day when some types of learning were more flexible than others.

The audio-conferencing, video-conferencing, and SMS technologies necessary for this fully integrated, interactive type of educational delivery are already available, and the software needed to run them can be downloaded from the Internet free of charge. Inevitably, commercial vendors will continue to offer ever more complex and expensive software re-packagings, and educators must try to become more resistant to their blandishments than they have been in the past, and to the territorial product loyalties that marketers create. In this way, it is to be hoped that 'planned abandonment' and well-reasoned change of the type urged by Drucker (1974) will begin to flourish in the educational technology field. Unfortunately, it is also possible that nothing will change at all, as educational institutions continue to spend thousands of dollars on new hardware and software without evaluating their options and to pass over equally useful products that they could have obtained without charge. In the world of institutional purchasing, the adage that 'you get what you pay for' does not always apply.

Conclusion

The future analyst of late twentieth- and early twenty-first-century DE will probably be amazed that many of its providers took two decades to learn how to use the Internet, a medium carried on telephone lines, for live, synchronous teacher–student conversation. The historian may record

how, after becoming impatient with the efforts of Western distance educators to move away from clumsy, asynchronous text-based methods, developing-world educators developed a vibrant, mobile form of DE using the standard cell phone medium of the homes and streets. In the process, they restored the direct human contact that teachers and students had used in mobile forms of DE for centuries. With luck, the historian will note that, following the excessively teacher-centred approaches of 1970s DE delivery and the equally excessively learner-centred rationales of the early twenty-first century, a sensible middle ground was reached, by which technologies were used to encourage students in an active style of learning, with live assistance from the teacher when needed. The record will show that, as conventional educational institutions embraced these methods, DE faded into the mainstream and the World Wide Web failed to provide worldwide learning as had been hoped – a particularly sad loss of opportunity for the developing world. If only educators had learned from the lessons of the past, the historian will lament, the Web would not have been rejected as a reliable DE medium some time around 2010, and the powerful and pervasive cell phone technology that took its place would not have met the same fate approximately five years later. Who knows, the commentator will venture, what will come next in the age-old succession of one educational medium after another?

Of course, these predictions are purely speculative, but if a dose of fictional future-gazing is what it takes to highlight the mistakes of the present, it may be as useful as learning from the errors of the past.

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