

Distance education and its potential for international co-operative education

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Summary

This paper summarises some of the major trends in distance education in the first decade of the 21st Century, and explores the implications of these trends for international collaboration among institutions of veterinary medicine.

Keywords

Collaboration webs – Curriculum – Data mash-ups – Distance learning – Grassroots video – Individualisation – Mobile broadband – Open courseware – Open educational resources – Transparency – Video.

Introduction

Throughout the world, higher education is undergoing a revolution due to the electronic tools available in every country. This paper examines some of the most salient characteristics and issues in distance education, in the new networked, global, participatory environment. There is a new generation growing up, a generation which may *think differently* from its older teachers. In the article, 'Digital natives, digital immigrants', Prensky proposes that members of the 'Millennial Generation' (born between 1982 and 2003) process information and learn in a multi-tasking and constantly networked manner that those who grew up with text and traditional teaching methods find extremely hard to grasp (9). The early 1980s generation of students is already entering college, and even graduate school, and the flood will only increase every year. Those who, like the author of this paper, have become 'digital immigrants' often find their ways of thinking and learning bewildering and frequently disconcerting.

How large is the current market for distance education? Globally aggregated numbers are hard to obtain, given the confusion of nomenclature and methods of delivery. However, in the United States of America (USA), in the academic year of 2000 to 2001, there was an estimated total enrolment in post-secondary distance education

courses of more than three million students (8). One would assume that this number had at least doubled between 2007 and 2008. Again, in the USA, more than 80% of these enrolments were in undergraduate education.

The term 'distance education' is notoriously difficult to define. Does it include on-site meetings supported by materials located on the internet. What about education that is hybrid, i.e. partly online and partly onsite? Are teleconferences included? Does self-study qualify? In order to set some parameters, the author will limit the discussion below to education that is:

- *formal* (organised by an institution of higher learning)
- *entirely conducted at a distance* (including methods in which communication between the student and teacher is immediate and those in which it is delayed)
- *electronically mediated* (primarily over the internet)
- *cohort-based* (having defined start and end dates and dates by which student assignments must be delivered)
- *facilitated* by a professor or qualified instructor.

All these limiting factors of the definition can be questioned, and institutions that offer distance learning are continually experimenting with different methods of organising and providing their courses.

The components of distance education

The author suggests that, using the definition above, a distance education course consists of three major components:

- the *content* of the course
- the *context* in which the course is offered
- the parameters and quality of the course *facilitation*.

All three are central to a high-quality educational experience.

Content

By *content*, the author means the teaching materials that are intentionally created or selected for the course. For example, including a link to a published article in an online course does not necessarily make that article educational. However, the act of selecting that article for a specific purpose and creating activities around it (study guides, discussion questions, analysis assignments) does make it educational. Similarly, teachers should select their media resources (video, audio, animations, simulations) very carefully for their instructional value if the educational experience is to be of high quality; e.g. exactly *this* five-minute piece of video; precisely *this* student-computer activity, etc. In addition, the content of the item must be directly related to the explicit learning objectives of the online course. Finally, the content must be accessible to the learners: technologically, linguistically and, for students with disabilities, for example, through multiple methods, so that each student can access the content in the way that suits them best.

Context

The course *context* is tightly intertwined with the content. Accessibility has already been mentioned, which, of course, relates to the delivery platform (their virtual classroom or teaching facility) as well as to the materials. In addition, the context defines how the materials are related both to the objectives of the course (the ‘front end’) and assessment (the ‘back end’). There are many illuminating statements on content and context; one that may be of interest to the reader is from the Western Association of Schools and Colleges in the USA (11). A summary of standards documents can be found in the article: ‘Quality standards in e-learning: a matrix of analysis’ (3).

Facilitation

The third area is *facilitation*. Although not always presented as such, distance education works very well as a

‘transforming pedagogy’, in that it can easily be centred on the learner rather than on the instructor. Given that the main authoritarian structure (and cultural context) of the lecture hall has disappeared, distance learning can, if intentionally used in this way, serve as a leveller of social and structural hierarchies. This possibility does not please everyone, which may account for the large amount of debate over the merits of these new teaching tools. For a valuable exposition of the new pedagogies in distance learning, see Garrison and Anderson (4), in which the authors describe what they call the ‘social presence’, ‘cognitive presence’ and ‘teaching presence’ roles of the distance-education professor.

Experienced academics may well be frowning at this point, thinking: ‘So what is so revolutionary? This is what I do every day.’ They are right: neither the attention to content, nor to context, nor to facilitation in preference to formal lectures is, in itself, unique to distance education. However, the author proposes that there are two characteristics of distance education that elicit the passionate debate that surrounds it: its potential reach and its transparency.

Traditional brick-and-mortar institutions used to have an implicit or explicit service area or niche. To serve the entire territory of the USA, for example, there are over 1,500 junior and community colleges (two-year, post-baccalaureate institutions) (2, 7). Since potential students are no longer confined to seeking education within a close geographical radius of their home or work, there is an understandable fear among some educators that their services will no longer be needed, since students are no longer obliged to attend their ‘home’ university. Although anecdotal evidence and a few scattered studies imply that this is not the case (2), it is a natural fear.

However, the author believes that the major cause of the controversy or *Sturm und Drang* around distance education is its transparency. Traditionally, post-secondary education was a rather private affair. When the doors were closed, only the professor and the students saw and heard what went on. There were no cameras and few critical observers. Suddenly, with the advent of distance learning technologies, many parties have access to the classroom. It is as if the roof has been lifted from the building and anyone (almost anyone) can access what occurs within its walls. Now, administrators can assess the quality and quantity of the services offered to students by a particular professor, and can subject his or her educational materials to semi-public scrutiny. While this, in itself, is not a bad thing, it can lead to an overly rapid and, at times, thoughtless cry for standards and templates, to the detriment of creativity, experimentation and innovation.

Trends in distance-learning technology

To return to the students, the ‘audience’, who were briefly described in the opening paragraphs: what technologies are they using and for what purpose? What will they use in the near future? In the Horizon Report (6), four trends in distance-learning technologies that are affecting educators now and will affect them even more so within the next two to three years are:

- ‘grassroots video’
- ‘collaboration webs’
- mobile broadband
- data ‘mash-ups’.

To these, the author wishes to add two more:

- instantaneity
- individualisation.

Each deserves some explanation.

Grassroots video

Grassroots video is what the author, an absolute amateur, captures with a cheap digital video camera or even a cell phone. Nothing new there – they are home movies. One difference, however, is that now the equipment can be carried everywhere; for example, in a cell phone. A second difference is the proliferation of ways to upload and share a video, such as through the websites You Tube or Flickr.

Why should educators care? Given their position of responsibility, educators have an obligation to be thoughtful about what they share with the world. Do they want to simply put out raw footage? Or do they want a certain level of post-production in their distance education? Even the highly entertaining and engaging lecture-captures that the University of California Berkeley makes available through You Tube (www.youtube.com/ucberkeley) are most certainly not free to produce, even though they look ‘raw’. Whether an institution chooses to position itself as the leader in raw lecture capture or in Hollywood-quality educational video, with million-dollar post-production budgets, the ubiquitousness of broadband means that video is now receivable by an ever-increasing number of households. Like it or not, educators are in the video-production business.

Collaboration webs

Students are chatting (and fighting and ‘flaming’ and, occasionally, collaborating) on such social networking sites as MySpace (www.myspace.com), Facebook (www.facebook.com), Ning (www.ning.com), LinkedIn (www.linkedin.com), etc. In addition, there are document collaboration sites, such as Google Docs

(<http://docs.google.com>), that include version control and annotation. For a much longer list, the ‘best of’ map at www.mindmeister.com/maps/show_public/12213323 (5) lists 150 collaboration tools voted ‘best in show’ by a large, international group of volunteers.

So, collaboration webs are proliferating, but what are their implications for teaching and learning? One obvious application is that students are able to develop and maintain e-portfolios of their work. However, another rather interesting view of this pervasive and constant communication is its similarity to a cornerstone of scientific research: peer critique. Millennial students, it appears, live and breathe in a group world.

Mobile broadband

The third soon-to-be-common reality for distance education is that students expect to be able to take it with them wherever they go. Mobile devices are becoming more and more powerful. The fact that learners, even in rural areas and developing regions, already carry such mobile devices with them and, even today, have varying degrees of broadband access, demonstrates the necessity to organise and arrange education with mobile broadband in mind. But this will not be easy. The traditional ‘unit of analysis’ of academic content, such as a video, a PowerPoint file or a Flash presentation, is probably far too long for rapid access on mobile devices. Some educators speak disparagingly of ‘sound byte education’. The mobile world demands that educators divide education into increasingly smaller pieces, and the ‘Baby Boomer’ generation (the author of this paper was born in 1952) resists this.

Data mash-ups

The fourth trend is data ‘mash-ups’. As explained in the 2008 Horizon Report (6), ‘A mashup is a web application that combines data from more than one source via a single, unified tool.’ (See also 12.) It will be possible to combine geographic data with demographic data, with fiction, with video, with ‘Second Life’ simulations and so on. (See <http://secondlife.com> for an entry into the avatar world.) While this is still a very strange process to most current educators, Millennial students do not see any reason why they should not be able to access and combine data from anywhere, anytime. After all, as they might say, ‘It’s all bits and bytes, right?’

Instantaneity

The fifth trend, which may be so obvious that the Horizon Report (6) does not mention it, is the expectation of instantaneity. Teachers at the University of California Irvine, for example, have set the expectation that

instructors of online classes should be 'visibly present' to their students at least every 72 hours. That seems to be an aeon to many younger students. They are used to instant feedback and instant access in every other area (banking, purchasing, enrolment, entertainment, to mention a few), so that they are quite upset when their instructor is not available to them 24 hours a day. Professors are not used to seeing themselves as service providers to students.

Individualisation

Linked to the social networking introduced above, and often talked about as an aspect of 'Web 2.0' (13), are learner expectations of customisation and individualisation. Students expect to be able to customise educational sites and their content to fit their specific needs, as well as search for – and find – exactly the information or theory that they are looking for at any given moment. It is the very opposite of mass education: 'my education is customised for me and me only'. Their view of the role of the professor has changed accordingly: he or she is no longer the 'sage on the stage' but the 'guide on the side'. This implies to many students that the professor is a *personal* guide. Professors may disagree with this, not wanting to spend their time personally tutoring thousands of undergraduate students.

Open educational resources

While this 'explosion' in pervasive technologies is occurring, another quiet revolution is happening, called 'open educational resources' (OER). Such resources comprise whatever an institution or professor wants to make available or 'open', which basically means free of charge, anonymously accessible and open to repurposing (making derivatives, translation and generally doing whatever the student wants to do with the content, as long as proper attribution is given to the creator).

The first innovator in this field was the Massachusetts Institute of Technology (MIT), which now freely offers content from more than 1,800 MIT courses over the internet (<http://ocw.mit.edu>). Based on this ground-breaking work, hundreds of other institutions from around the world have joined the OER movement and organised themselves into the Open Courseware Consortium (www.ocwconsortium.org). Open courseware (OCW) is based on quite a revolutionary proposition: to make educationally organised knowledge freely available to anyone, anywhere. Are they, in fact, 'giving away the shop'? Not in any way. Indeed, one of the unintended side effects of the OCW or OER movement is to demonstrate exactly why instruction matters: content is not education. Content is just content. Instruction is the scope, selection and

sequencing of content into an educational process, attended by reasonable assessment (or certification) of competence. That is not free.

A great number of issues arise once content is 'dethroned' from its primary position. In the past, content was closely guarded by educators and others could only gain it if they were admitted into this elite group. Now, content is freely available to anyone who wants to access it. Since anyone can publish content, and since anyone who wants to can re-use (and potentially distort or otherwise devalue) available content, who now decides what is quality? It used to be obvious what 'quality' was: it was what an institution with an impressive reputation provided. Now that anyone can publish, what are the criteria for assessing quality? Educators appear to be facing a stalemate between 'canonical' and 'heretical' information. For a careful analysis of the opportunities and challenges of OER, see Baraniuk (1).

The concept of OER is ideally suited to the user communities referred to above as social networking or collaborative webs. If the OER offered by institutions is carefully designed for the defined needs of a specific user group (such as kindergarten teachers, radiology technicians, financial planners or veterinarians), that user group is reachable. They already have an incentive to participate in furthering the practical and theoretical knowledge and practices of their profession and/or interest. They can be fairly easily enticed into joining a network of critics and content developers for their specific field. Their comments, for example, in blog form, and their derivatives, such as translated or improved content, can be captured and re-exposed to the world. In this manner, the 'body of knowledge' of the field about which they are passionate grows exponentially.

Now, let's begin to pull the threads together. First, one should consider a few counter-indications to the attractive scenario described above. The most obvious is often referred to as the 'digital divide'. It is another facet of the gulf between North and South, developed and developing, and 'haves' versus 'have-nots' from which the world still suffers. A few have access to home broadband, ever-more-powerful laptop computers, cell phones that work everywhere, and so on. Many do not. The need to plan technologies with users in mind is humbling to the enthusiastic educational content developer. These teachers want so very much to avail themselves of the most 'state-of-the-art' technology in designing learning objectives and pathways, but if the user is struggling with intermittent dial-up connectivity, it may be that he or she simply cannot access the high-quality video, audio and simulations thus created. Hence: text.

The second caveat is the generational divide examined above. In a rebuttal to the assertion by Prensky (9), that

educators need to change how they educate because the learners have changed, VanSlyke argues that the penchant of the 'digital natives' for using discourse to make sense of experience, 'suggests that we should conceive of the cultural assimilation between the digital natives and immigrants as a mutual process of adaptation rather than a one-way street' (10).

What are the implications for international collaboration amid these current and future trends in distance learning? For schools and practitioners of veterinary medicine, and for the human and animal recipients of their work, the author believes there are three primary implications:

- *access* to information is insufficient; educational providers must offer content designed to instruct, accompanied by a service wrap-around (i.e. tutorials, web seminars, electronic 'office hours', etc) to assist learners in making sense of the content
- schools can begin to specialise in fields especially relevant to their location because students can gain access to other areas of study from other providers through e-learning
- since they no longer have to devise and teach curricula in all areas of study, veterinary education providers can employ distance education to spread knowledge and skills not only to their students, but to the population in general.

Now to briefly examine each statement. If educators accept the proposal that the new generations will be more inclined to construct meaning collaboratively, rather than memorise what they are told and regurgitate it, then courses must be specifically and clearly designed to enable discussion right at the site of the digital media content (so that those who access the content also access the discussion). To be effective and have worldwide impact, the providers must design the collaborative context of the course from the very start and not assume that this is something to be added later. It becomes the very heart of the educational experience. Luckily, this costs practically nothing; free social networking tools abound on the Web and schools do not have to invent them.

The potential for specialisation that educational collaboration enables has wide-ranging effects. For example, a group of professors from various institutions can develop a series of basic courses (for example,

livestock physiology) that are later offered to all the students in all their institutions, but taught by only a few of the original designers in rotation. The professors who are not teaching the course(s) at a given time will then be able to spend more time developing specialised courses of the kind that no single provider can offer. Both the general and the specialised courses can contribute to and avail themselves of OER, so that the development curve is shortened. When the specialised courses are offered electronically, students from all over the world can select these as electives. This brings all students everywhere a much greater choice of specialisations.

A third advantage of collaboration on educational curricula is the opportunity to revise content for secondary users, such as farmers or practising veterinarians. Continuing life long education is a mission of most post-secondary providers but, with the overload of daily instruction and research, it frequently becomes a lesser priority. The development of educational content is never finished; it is always a work in progress. Being able to offer well-designed educational pathways to practising constituencies would enable schools to disseminate their research findings to a much larger audience of users. These users, in turn, will bring their practical perspective to the content and the way in which it is offered, to create a continuing cycle (or spiral) of constant improvement.

In conclusion, electronically mediated distance education in the 21st Century contains within it the seeds to truly become a 'people's movement'. It is the contention of the author that, in this new networked world, the professor, with his or her expertise both as an educator and as an interpreter of complex relationships, only becomes more crucial. Content can be misused, misunderstood and misapplied. Experts (professors) will be in more demand than ever.

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L'enseignement à distance et ses possibilités dans le domaine de l'enseignement international en coopération

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Résumé

Cet article résume les évolutions de l'enseignement à distance en ce début de 21^e siècle et analyse leur impact sur la collaboration entre institutions de médecine vétérinaire au niveau international.

Mots-clés

Bases de données composites – Enseignement à distance – Haut débit mobile – Individualisation – Matériel d'enseignement à distance – Programme d'enseignement – Réseau de collaboration en ligne – Ressources didactiques à distance – Transparence – Vidéo – Vidéo de vulgarisation.



Enseñanza a distancia y posibilidades de colaboración internacional al respecto

J. Frydenberg

Resumen

El autor expone algunas de las principales evoluciones de la formación a distancia durante la primera década del siglo XXI y analiza sus posibilidades en materia de colaboración internacional entre instituciones de medicina veterinaria.

Palabras clave

Conexión inalámbrica de alta velocidad – Enseñanza a distancia – Información proveniente de distintos sitios web – Personalización – Planes de estudios – Programa de formación abierto – Recursos educativos abiertos – Red de colaboración – Transparencia – Video – Video comunitario.



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