#01

RELEVANT VOICES AROUND THE WORLD

SENIOR FIGURES IN THE e-LEARNING FIELD TALK ABOUT THE TIME FACTOR IN e-LEARNING TO US AND THESE ARE THEIR CONTRIBUTIONS...

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There are several dimensions to the time factor in e-learning:

1. The time of the learner.
2. The time of the learning activity.
3. The time affordances of different media and technologies.

I will discuss each briefly.

THE TIME OF THE LEARNER

This is perhaps the best understood factor in e-learning. One reason why e-learning is increasing rapidly, at least in North America, is because of the flexibility, particularly regarding time of study, that e-learning affords.

Because of increases in tuition fees (inevitable given the increased access to higher education and reluctance to increase taxes to pay for this), more and more students are working at least part-time to pay for their initial undergraduate and graduate education.

Furthermore, because of the demands of knowledge-based occupations such as health, telecommunications and computer software engineering, there is increasing demand from lifelong learners to return for postgraduate studies and continuing education. Thus increasingly students are combining work, family and study. Online learning is clearly providing the flexibility that such students need. It does this by allowing them to shift studying to times that are most convenient for them. A recent study by Statistics Canada (2009) found as many students over 24 years of age taking education or training programs as those under 24 in Canada, which probably accounts for the increasing demand for e-learning. However, such data needs more close examination and breaking down by type of program and institution. Thus while there is plenty of research to support the argument that e-learning provides increased flexibility for especially adult learners (e.g. the Sloan Commission studies) there is still room for more research on exactly what demographics are best served by e-learning, in terms of flexibility, and the implications of this for course and program design.

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A second aspect of the time of the learner that is less well researched is the impact of e-learning on total hours of study. A recent metadata analysis by researchers at the U.S. Department of Education (Means et al, 2009) found that online learners did slightly better than face-to-face learners, and their conclusion from looking at variables in the various studies was that this was due primarily to time on task - in other words, online learners spent more time studying than face-to-face learners. However, this conclusion was an indirect interpretation of third party results. More direct examination of this issue is really required to confirm the hypothesis.

THE TIME OF THE LEARNING ACTIVITY

Courses and programs in traditional classroom teaching, at least in post-secondary education, are strongly related to the concept of contact time, e.g. a three credit course is three hours of 'classes' a week. The credit system relies on 'banking' a total number of credits for a degree (e.g. in North America, 120 credits for a four year bachelors degree, which is equal to 40 one semester three credit courses, or 10 courses a year).

However, this is a peculiar concept as it does not relate to the actual time spent by students studying. With extra readings, students usually spend way more than three hours a week on a single course, and of course there are wide variations between students in actual study time as well as performance.

In designing e-learning courses, using quality-based instructional design, the aim is to ensure that students spend no more time on an e-learning course to obtain the same learning outcomes as would full-time class-based students. However, the length of a course (for instance, in North America, 13 weeks) is based on full-time classroom attendance. Many e-learners are not full time. Despite this, many will try to find the same amount of study time as a full-time student. However, since e-learning allows students to study at different times, some students may need longer to take a course than others. Some distance teaching institutions allow students to take longer to graduate, but e-learning often is used for traditional full-time students as well as lifelong learners.

This raises a whole set of questions about course design. Would what be the advantages and disadvantages of allowing students to complete a course over different time periods? What would such a course look like? What are the implications of moving to an outcomes-based approach that focuses on competency rather than time in class?

For instance, at Vancouver Community College, a course directed at apprentice car mechanics already in the workforce delivered the first 10 weeks of the course fully online. For the last three weeks of the course, students had to come on campus for the practical work. On their arrival, they were all tested on their practical skills. It was found that one third of the students already had learned the skills on the job (prior learning experience). They were sent home, so completed the course in 10 weeks. Another third needed only one of the three weeks to get to the required level of competency while the remaining third needed all three weeks.

In another college, an instructor moved a 13 week face-to-face course online and allowed the students to take the end of course exam at any time. Most of the students successfully completed the course in nine weeks. However, many part-time students may require longer than 13 weeks. Can courses be designed to facilitate different periods of study to reflect the lifestyle needs of learners?

THE TIME AFFORDANCES OF DIFFERENT TECHNOLOGIES

The time affordances of different media and technologies are well known (Bates, 2005). Some technologies permit synchronous teaching (face-to-face, video-conferencing, audio-conferencing, broadcasting), others afford asynchronous teaching and learning (podcasts, lecture capture, computer-mediated communications, blogs, wikis, etc.). What is less well understood are the pedagogic and situational conditions that favour synchronous or asynchronous learning. Better understanding of these factors would facilitate course design.

References

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Using time to frame and help define an e-learning research program is both original and, pardon the pun, timely. So many of the issues that are of interest to e-learning researchers are affected by time yet our research to date has tended to ignore this variable and assume that time does not matter. Learning, by definition, requires time. Complex, deep learning requires a lot of time, yet much of our research tends to look at outcomes that might occur in the short time-span of a one semester course. Organizational change requires even more time but how many studies take this factor into account? Time does not necessarily have to be an explicit focus of the research but by using it to define the program it will at least raise our awareness of its importance and relevance. This reminds me of how gender has come to the forefront of much social sciences research. Our studies may not focus on gender but we are much more conscious of it as potential factor. Time, like gender, is part of everything we do.

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"The attempts directed towards a better understanding of how teachers and students organize their work on academic contents tend to adopt diverse analytical approaches (…). However, no matter what approach is chosen, the temporal dimension, the flow of activity of the participants through time, invariably constitutes an essential ingredient of the analysis. Few researchers question that the study of the interactive processes requires the temporal location of the behaviour of the participants and their communicative interchanges (…).

However, one thing is to postulate the importance of temporal dimension in the analysis of interactive processes and quite another is to respect the theoretical and methodological demands derived from this postulate when an empirical approach is attempted. Serious consideration of he temporal dimension in the study of interactive processes obliges us to question and rethink the usual procedures used in the collection and registration of data; it also obliges us to question and rethink the usual procedures of analysis of interactive processes. And of no lesser importance, it obliges us to bring up the topic of units of analysis directly, of their basically molar or molecular character, of their theoretical and conceptual basis and of their relevance and pertinence in the study of the construction of knowledge inside the framework of the formal teaching/learning activities."

References

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"The time (or temporal or "tempo in e-learning") factor needs to be operationalised. What I miss (…) is a statement of what is meant by the key construct of the "time factor in e-learning. (…) It is good that the time construct can cover such a range of focuses but in order to not leave the research reader surprised by the sorts of questions that emerge, I suggest the document begin with a definition of the construct of the "time factor in e-learning".

As a suggestion, *"Time as a construct in e-learning relates to when and at what rate learning-related processes are planned to occur and/or actually occur, and accompanying this, under whose control or choice, facilitated by what decisions or tools, and at what cost and benefit."*

Given this as a construct definition (and of course, there could be many other definitions),

a causal representation in terms of dynamics and impact (not just descriptive, as is now the case with the "four core elements") can be interesting. For example, stated in terms of the learner:

Keeping "time" for the e-learner equal to other learning settings, how and under what conditions can a richer experience occur within the same time for the e-learner? And at what implications for learner, teachers, support staff, and the institution?

Making "time" (for the e-learner) less compared to other learning settings, how and under what conditions can the same or better quality of learning occur for the e-learner? And what implications for learners, teachers, support staff and the institution?

My suggestion is thus: (a) to define the construct of "the time factor in e-learning" and (b) to simplify the focus of the research questions around two aspects of time for the e-learner: more (quality of learning) in the same time, or the same or more (quality of learning) in less time.

Having said this, I again compliment the eLC team for developing such a rich line of inquiry around the construct of the time factor in e-learning for its research.

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For more years than I want to remember I have argued that two aspects of TIME are of critical and central importance in distance education. I do not say there are not others but the following two are of paramount importance. First, at the relatively micro-level I have no doubt that the quality of the design of every course is dependent on the extent to which those responsible for designing the course are able and willing to accommodate their teaching objectives, and to manage the content, according to the TIME that the student can be expected to spend on each unit and each module of the course. This is very obvious and it is so basic to knowledgeable distance educators, but is so often overlooked or ignored by so many educators, especially those coming new to distance education from classroom teaching backgrounds. Too often courses are constructed to accommodate

the content they think their students should know, without regard to the TIME constraints on the student. The inevitable result is that students fail to perform their best, or to meet their instructors' excessive ambitions. When training distance educators, I always insist that instructors begin by stating what is the student's TIME BUDGET, and then specifying learning objectives and fit them within that time budget, abandoning those that will not fit.

The second point about TIME refers to a relatively macro-level phenomenon and is the problem of institutions failing to invest in providing sufficient TIME for their instructors and instructional designers prior to the interactive phase of instruction, i.e. when the students begin to interact with instructors and each other. In 1992 I was working at University of Turku in Finland where I

observed the same phenomenon that had become so annoying in the USA, what seemed to be a too-hurried rush to get programs out to students, with insufficient time invested in their design. This prompted me to write an editorial for The American Journal of Distance Education that I called "Take Time to Design". In it I pointed out that in state-of-the-art distance teaching, the ratio of time spent on design to that spent by the student on study was as high as 100 hours of design to 1 hour of study. By contrast, I said " if you want to invest small amounts of money and personnel time, lower quality programs must be expected." Today, 17 years later I see little reason to change that warning. On the contrary I am afraid that more institutions and more administrators have found the arrival of new technology has provided the excuse for reducing the "time to design". In many institutions today the ratio of design time to instruction may be as low as 2:1.

With such low investment, -- as I said in the 1992 editorial -- "the consequence is that an under-resourced design team is desperately overworked; materials are produced that are good under the circumstances but much below what is possible; and the market if flooded with mediocre materials that threaten to undermine confidence in the distance education approach."

I am convinced that there could be few research projects more important and more rewarding in the potential improvement in the quality and success of distance education in the age of e-learning than research projects that focused on first, the effect of basing design decisions on a framework of student's time budgets, and, second, the effects of investing human resource hours in course design.

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While time itself is a relational and complex concept, its use in e-learning is precise. E-learning is time and place independent learning made possible by advances in computing and telecommunications such as the internet to network teachers, learners and the learning institution in synchronous (realtime) and/or asynchronous (flexi-time) mode for communication and collaboration. Research issues are examined in the following categories:

◉ TEACHING AND LEARNING PROCESSES

Teachers help learners to apply knowledge to problems. This requires technology that enables timely and rapid question and feedback, and symmetry of time factors between teachers and learners, which today is yet to be achieved. Currently students as digital natives, seek instant gratification using mobile technology for education on the go. Teachers as digital immigrants need

to achieve symmetry with temporal needs of learners in curricula design and teaching approaches.

● EDUCATIONAL ORGANISATION, MANAGEMENT AND POLICIES

The main challenge for this sector is to develop policies and management practices in an integrated holistic way for learning and teaching in the new multimediated educational environment that demands response to timeliness and redesign of education processes in consultation with the stakeholders.

● TECHNOLOGICAL LEARNING RESOURCES

While information and communications technologies for efficient, effective e-learning that can be delivered at the convenience of the learner in culturally appropriate way exists, appropriate timely technology support systems for faculty, students and management is often lacking. If online learning is subject to technological breakdowns which invariably happens as the internet is still evolving, it is essential to have technical support 24/7, or else learners and teachers give up

the process in frustration. It appears that serving changing student demographics, just in time applications based on artificial intelligence (AI) for just in time artificially intelligent teachers (JITAITs) can be available, like a private tutor, anytime a student needs because human teachers cannot be endlessly available all the time for every student. JITAITs would strengthen synchronous communications and feedback for learning as and when students need.

Finally, the concept of time is now associated with speed and economic profit. Speed and economic imperatives are not natural bedfellows of education. Research is yet to prove that speed in learning would lead to deep learning, which requires reflexive time to absorb concepts and connect with prior knowledge. Even though it is now possible to download a whole encyclopaedia in seconds, human eyes as receptors of information can only process information at 50 bits per second! Therefore, using the technology for speed dumping may prove to be overkill and less than useful.