Managing Some Institutional, Sociocultural and on-Screen Reading Challenges of Online Learning

Zsolt Tóth

Abstract— The aim of this article is to summarize some of the factors that hinder the effectiveness of e-learning, which we have found in our research and practice. Our experience is based on the management of one of the oldest e-learning systems in Hungary and the experience of many international projects. We focus mainly on institutional, sociocultural and reading research experiences. According to our experience, e-learning development cannot cross linear education, process control, contact lessons, and uniformized curriculum within the framework of a traditional institutional system. Moreover, the efficiency of e-learning methodologies based on new constructivist and connectivist pedagogies is highly questionable even in the case of the removal of institutional constraints. Many sociocultural factors play a role in this. The results of on-screen reading research so far have further eroded our belief in digitized learning materials; on-screen reading efficiency seems surprisingly low. It is not real alternative to replacing long texts with shorter texts and animations. In our view, e-learning (blended learning) can play an important role in making communication related to education more effective, but the curriculum should be based on mainly (but not exclusively) printed notes and books.

Index Terms—blended learning, e-learning, higher education, online learning

I. INTRODUCTION

In the second half of the 1990s, e-learning seemed to be the most important opportunity for renewal in mass-based higher education worldwide. The spread of e-learning and blended learning courses or the ever-increasing use of ICT technology has anticipated the modernization of higher education and the entire education system. However, based on the experience of the past decades, the spread of ICT and new forms of education has not brought about a revolution in higher education. As a contrast between the short learning cycles and the occasional noisy success of informal learning, virtual universities, e-learning and blended learning courses at universities have only partially fulfilled their hopes.

We should not devalue the results, but we must see the limits. Among the many hindering factors, the study mainly focuses on some institutional, sociocultural and screen reading factors.

II. INSTITUTIONAL FACTORS

A. General problems

According to critics of e-learning programs, the educational methodologies that can be developed using ICT are incomplete and undeveloped in some areas [1]. The potential of frameworks and curriculum development systems is untapped. The spread of ICT has only modernized the administration of education (admission, enrollment, payment of various fees, exam registration, etc.), but the increasing use of ICT has barely transformed classroom pedagogy [2]. The social return of significant sums spent on ICT use has not been proven at all [3]. What are the main institutional constraints?

Skilbeck [4] findings of almost twenty years ago are still often heard today. These identify the basics of the problem. The introduction of ICT-assisted education instead of institutionalized formal learning faces serious constraints for the following reasons:

- If traditional universities do not become more flexible, pro-technology and technology-driven virtual universities can take on their role.
- Collaboration is needed to eliminate unnecessary repetitions and uneven standards.
- A re-interpretation of the teacher-student role is needed.
- The preparedness and motivation of university leadership is one of the main obstacles.

Some of the findings are true, but there is currently no solution. The other part is highly debatable. It's worth taking this in detail.

B. The traditional university has no competitors

Already at the beginning of the 2000s, virtual private universities in the European higher education area have not been a serious competitor. The literature has worked well with theit spectacular failures of 10-20 years ago [5]-[11].

The virtual university went out of fashion. The newly fashioned MOOCs have not changed the situation either.

It is suspected that the MOOCs will not redeem their hopes. Perhaps history does not repeat itself because the maintainers of the MOOCs consider these as mostly complementary courses of their traditional training, even though their marketing texts say something else [12].

The overwhelming majority of students wants to graduate from courses in traditional universities. This can be traced back to some strict institutional factors; the bargaining positions of the elite groups of universities, the funding system (which requires a certain number of contact hours for the instructor), the conservatism of accreditation

systems, and so on [13].

However, it is also thought provoking that education based on purely virtual courses has a low prestige. The value of a full-time degree is more than one of a distance education degree. Not only teachers, but also students and employers think so [14].

C. Unnecessary repetitions and uneven standards

The European Higher Education Area and the Bologna Process standardized processes and reduced redundancy. However, this has not led to an increase in the prestige and role of online education, and there seems to be no clear improvement in standards [15].

D. Teacher-student role

The democratization of education has typically transformed the world of universities since 1968. The democratization of public education is also clearly visible. However, there has been no fundamental transformation of the teacher-student role. Social expectations and rigid institutional rules hinder change. However, as we will see later, there is no clear evidence that it would be easy to transform a teacher's historical central role into a kind of tutor role [16].

E. University leadership

The dual management methods of German and Anglo-Saxon universities are spreading in the world. This basically means the separation of scientific and economic leadership. However, in Hungary and in several European countries, this has not led to a more efficient operation or higher scientific and educational performance. It is not at all certain that a university run by professors and supported by professionals is less effective than a chancellor system. The radical limitation of the autonomy of universities is basically strangling them. The university elite, of course, protects its positions, but it is not proven that it would clearly hinder the renewal of universities [17].

Of course, bad university leaders are everywhere, but it is not certain that this can be changed by limiting autonomy and public and private intervention.

III. ANAYLATICAL RESULTS & DISCUSSIONS

The sociocultural indicator in the title of the chapter is rather inaccurate. In fact, it describes a set of problems that go beyond institutional features. These constraints have historically evolved, and several learning theory-based pedagogical methodologies have emerged to break them down. They could say that these are pedagogical barriers. However, this would be even more inaccurate, as most of the pedagogical barriers are sociocultural. In addition, we do not usually get the real test of constructivist and connectivist methods.

The traditional teaching of industrial societies is characterized by hierarchical knowledge sharing. A typical university lecture is top-down and not interactive. In a traditional seminar framework, discussion and communication take place within a limited spatial and

temporal framework. The bottleneck of copies of printed books also forces the professor to present (or read) his textbook. And, as in the Middle Ages, students try to record what they have heard. In a traditional seminar framework, discussion and communication take place within a limited spatial and temporal framework [18].

New communication tools extend these boundaries in principle. Information society technology enables networking of individuals, knowledge warehouses and institutions. With Web2-based technologies, teachers and students can interact with each other independently of space and time. The teacher is accessible by e-mail everywhere. The curriculum - whether the teacher's presentation or the students' online work - can be followed and commented on any of the world's workstations.

However, this option raises several new problems. One of these is the exaggeration of communication. Networked training provides the opportunity to quickly and efficiently transmit theses, task solutions, and e-mails that require support. However, if the teacher continues to be the only source of knowledge and tutor, he will sooner or later be lost in the set of electronically stored texts, tasks and electronic messages and questions [16].

This is how we come across one of the most serious contradictions. If networked training is used for traditional centralized knowledge sharing, it shortly leads to an almost unmanageable overload of information.

Methods of traditional centralized knowledge sharing and networking opportunities are therefore difficult to match. The network almost forces learning from each other, decentralized knowledge sharing. Students must also learn from each other and from other tutors and ask for help. The teacher can now get rid of the over-information. However, this method is only possible if we know the experience, knowledge and competence of the network partners, if we know who we can ask.

A. Decentralized networks?

We all know examples of successful learning on decentralized networks. For example, there are professional programmers who never went to college. However, these are exceptions magnified by the media. The overwhelming majority of those who avoid good universities are not geniuses. In fact, they usually live their adult lives in bad or relatively bad conditions. It does not change this sad situation by holding out a carrot with them [19].

For the present Facebook- or Insta-generation, decentralized knowledge sharing does not mean sharing scientific knowledge [20]. Or very rarely.

Think of the fact that the world's elite universities continue to build on scientific authority and a centralized monopoly of professors. Even if these institutions are democratized, e.g. during the seminars they leave room for students' opinions and do not refrain from considering the criticisms and comments of the students. However, this does not change the basic formula. But they would have enough resources to make a radical change [19].

Yet their MOOC courses are based on traditional education for other target groups, with less efficiency, cost, prestige.

If we move down, mass universities are more willing to use decentralized forms of education. However, here the instructors are less prepared for the tutor role, and the competences of the students are weaker. Still, why are they more likely to build on online courses?

The reason is simply that there is less source for high-quality frontal education and small group seminars. Over the past decades, extra funding rarely follows the increase in student numbers. It is simpler and cheaper to push students into a less structured online space and to prefer decentralized knowledge sharing instead of thorough and effective classical education for the masses [21].

Regardless of this, e.g. fashionable constructivist education could work in principle.

However, it does not seem to work under the most favorable conditions.

B. Does constructivism work?

Several e-learning systems is intended to constructivist learning theories, but most courses are based on "traditional" pedagogical methods.

The successful adaptation of learning methods shows that the social constructivist learning is more than a fancy, it is a real alternative. Nevertheless, it would be a mistake to avoid the theoretical critics and to suggest that problems are attributable exclusively to the enumerated "subjective" factors. Constructivism is criticized on various ground [22]:

- Constructivism and other reformist educational theories have been most successful among children from privileged social backgrounds. The disadvantaged children, lacking such backgrounds, benefit more from more explicit, more traditional instruction.

- The collaborative aspects of constructivist courses tend to produce autocracy of the majority, in which a few students' voices or interpretations dominate the group's conclusions, and dissenting students are forced to conform to the consensus.

- There are few hard evidences that constructivist methods work. Constructivists, by rejecting evaluation by testing and other external criteria, have made themselves unaccountable for their students' progress. Critics also say that studies of various kinds of instruction have found that students in constructivist classrooms lag the others.

IV. ON-SCREEN READING FACTORS

Most of the researchers of on-screen reading, based on growing empirical research, increasingly believe that reading on screen is ineffective.

When someone is reading more long texts, the text read in the digitized book is usually hardly understood by the reader, he can hardly recall the details of the text, and can solve the possible tasks related to the text less effectively than if he read a "traditional" book [23].

The physical characteristics of the printed book and the related sensory-motor reading habits help our brain to produce a more detailed and lasting cognitive map of the reading than in digital reading, and this is crucial for understanding and learning the important elements of the text [24].

The above statement applies primarily to static, digitized texts (e.g. e-books saved in PDF format).

But the processing of longer, digitized text is further eroded by an impulse that is inseparable from the online environment [24] in the form of hyperlinks that entice thousands of "exciting" content promises.

The younger generations have already become socialized in the network, so the effects of the online (web) environment also affect the efficiency of reading.

According to Jakob Nielsen, one of the world's leading webguru, readers of webpages will immediately leave the site if they don't read something interesting in the first 10 seconds [25]. Scanning pages follows a specific F-pattern, which is not good for line-up text [26]. Readers spend a little time on one page and only read a few paragraphs.

There is no scientific consensus now [27], as the reading of digitized texts has many supporters.

However, empirical research that reinforces the support of e-readers is basically based on students' uncertain self-evaluations, so they are scientifically unreliable measurements. However, we can only rely on scientifically sound measurements in a media environment where digitized learning materials appear attractive and progressive to "dusty" books.

Because scientific knowledge and human civilization and culture are largely based on "long" texts, the printed book cannot be replaced by the e-book stored on any digital device, in addition to the current technical standards.

Reading even on the most readable e-book readers (Kindle and others) is ineffective [23].

However, e-books and the digitalized curriculum are central to most curriculum development. In several countries, instead of textbooks, tablets are distributed from a very young age [24].

The popularity of e-book is mainly due to low costs, although the cost level can be greatly increased by e-learning development and service costs. Interactive learning materials can sometimes be effective. However, they are less effective than the book [24]. In addition, the production of interactive learning materials is quite costly.

Getting the e-book to the forefront reduces the revenue of the author (university instructor), shifting the revenue to developers. This leads to a reduction in intellectual performance. In addition, proofreading of e-books is generally less thorough than that of printed books. It is impossible to prevent the free reproduction and distribution of digital books, which makes it impossible to sell them. Therefore, an average Hungarian university lecturer receives income from book writing only in case of state or EU support. By comparison, my senior university colleagues have earned a substantial income from their royalties 30 years ago. E-learning was originally not about digitizing the

curriculum. Illich or Lyotard once thought quite differently. They predicted the transformation of communication processes and easier access to knowledge, not primarily the digitization of the curriculum.

V. PRACTICAL EXPERIENCE

The development of the first e-learning system at the University of Sopron began in 2002. Our system is built on the open source Moodle system. Moodle has become very popular in the meantime worldwide.

Moodle also supports a variety of pedagogical approaches.

We have studied the possibilities of introducing reform pedagogical methods in several international projects. It was judged by the mostly negative experiences that the introduction of education based on constructivist or connectivist pedagogy is not realistic and perhaps not appropriate. That's why we encouraged the development of blended learning courses that complement and support traditional frontal education.

The development of an e-learning portal to support our training structure began in 2006. We have appointed system administrators, we organized internal trainings in several waves. The collaborative e-learning portal has been operating as a framework ever since. The instructors themselves decide what pedagogical method they follow. They decide on the curriculum and the use of communication and administrative modules. (URL: https://bismarck.nyme.hu/ktk_elearning/)

In case of problems, first the department administrators will help to solve them. If the problem could not be solved, you can contact faculty administrators.

The system facilitates the delivery of study materials to students and communication within courses.

There are serious theoretical debates about the possible renewal of pedagogy, with little practical results. We are advocates of cautious reforms.

We run the e-learning portal from our own resources, without any extra funding, so our human resources are necessarily scarce, but we strive to continuously update and maintain the framework and solve the problems that arise.

CONCLUSION

Based on our theoretical and practical experience, we believe that online learning systems should primarily support the exchange of information, communication and the administrative environment of education. We believe that instead of e-learning 2.0 we can be satisfied with the level of e-learning (blended learning) 1.0. We doubt the need for radical pedagogical change. There are even more doubts about the need to digitize the curriculum. The university is seen as the last refuge of traditional European book culture.

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