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Distance Learning:
Classification of Approaches and Terms

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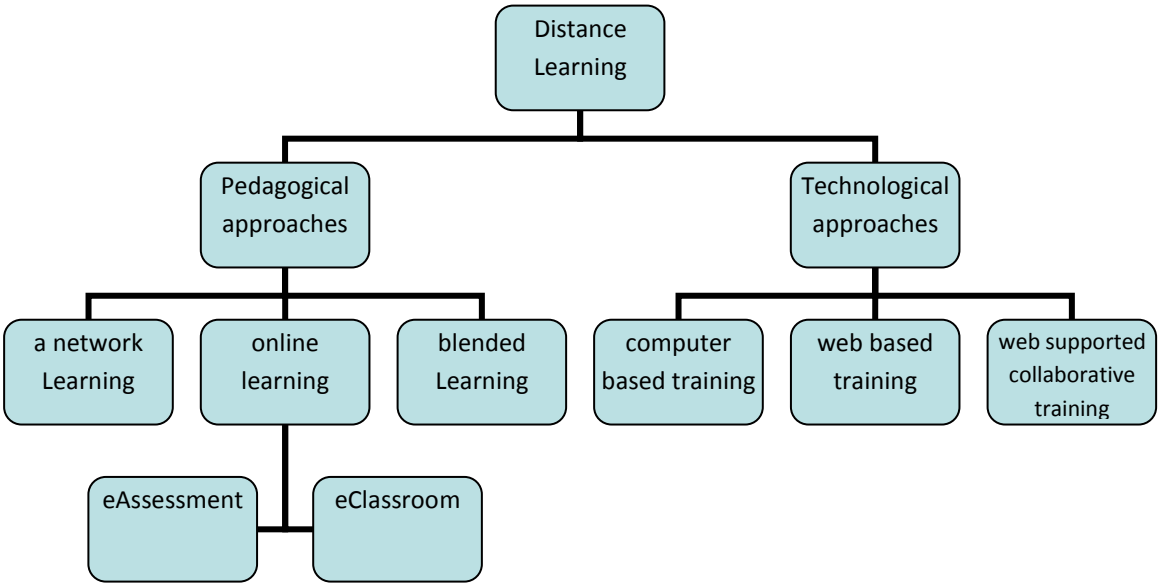
The article describes the interpretation of the term „distance learning" in humanities and social sciences. The author notes that this phenomenon has more than a dozen definitions, and presents a classification of terms used in modern research and practice. Classification is based on possible approaches to learning process.

There is an abundance of terms in materials about distance learning. Here are just a few groups of terms[1]: eLearning, eLearning1.0, eLearning2.0[2], online learning[3], virtual learning, learning via computer, electronic, digital and multimedia learning[4], technology enhanced learning – TEL[5]; online learning, blended learning[6], a network learning, computer-based training – CBT, web-based training – WBT[7], computer support collaborative learning – CSCL, Web-supported collaborative learning – WSCL[8]. Recently, the possibility of using cloud services for e-learning – e-learning in the Cloud – is mentioned frequently[9]. Our experience shows that this ambiguity and even a confusion of ideas is quite common for both Western and Russian articles and books.

[1] A lack of uniformity in terminology and mixing technological and pedagogical aspects in one definition are the two main reasons for those confusions.
[2] D. Holmberg, *The evolution, principles and practices of distance education*, Harvard University Press, Cambridge 2009.
[3] G. Siemens, *Knowing Knowledge*, http://ltc.umanitoba.ca/connectivism/, [17.04.2012].
[4] The Law of the Russian Federation „On Higher education and post-graduate vocational training", http://www.unn.ru/cdo/stat1.pdf, [17.04.2012].
[5] E. Dror, *Technology Enhanced Learning and Cognition*, John Benjamin's Press, Amsterdam 2011.
[6] C.R. Graham, *Blended learning systems: Definition, current trends, and future directions*, [in:] C.J. Bonk, C.R. Graham, *Handbook of blended learning: Global perspectives, local designs*, San Francisco 2010, p. 22–36.
[7] A. Heinze, *Reflection on the Use of Blended Learning. Education in Changing Environment*, University of Salford, Salford 2004.
[8] D.R. Garrison, *An Introduction to Distance Education: Understanding Teaching and Learning in a New Era*, Taylor & Francis, 2010.
[9] S. Campbell, *e-Learning in „the Cloud" – Software Development for Syber Works*, http://www.syberworks.com/articles/elearning-in-the-cloud-article.htm, [17.04.2012].

Figure 1. Distance Learning: Classification of Terms



It is obvious that the abundance of terms makes certain difficulties in phenomenon researching. The author has created a scheme (see Fig. 1), which, in her view, reflects the modern situation with respect to the definitions and makes it possible to systematize them. We present two approaches to using the Internet for learning, namely pedagogical and technological. The first is based on creation of Learning Network by university or another educational agency and involving students in learning activities. In the second approach a „student" creates his/her own educational network and uses it for his/her cognitive purposes.

Pedagogical approaches

The concept of eLearning is mostly close to the traditional understanding of the educational process as a set of goals which should be implemented in the process of interaction between the subjects of the educational process based on the content, methods, forms and tools. Researchers believe that eLearning is a range of different approaches to the use of information technology in teaching and includes the following phenomena: use of information technologies in F2F learning, blended learning, and online learning.

A net learning is used in the countries where the right to use the Internet is limited. The range of issues of this article does not include consideration of the causes and consequences of refusal to work in a real network. We only mention that such solution depends on state policy or traditions of the institution. Learning in this case is not related to the total exclusion of information technologies from educational process, but students and teachers don't have Internet access. Instead of that institutions create a local Learning Network, where learning materials, tests and laboratory works are published, and the Internet is simulated if necessary.

Online learning to a greater extent reflects the possibility of distance learning and has long history. There are following stages of online learning: (1) eAssessment, (2) eClassroom.

The history of online learning began from remote verification of knowledge – *eAssessment.* The range of such programs is very wide: from automated testing in order to obtain a certificate (e.g. TOEFL, IELTS) to systems automatically tracking specific errors of each student. Some systems also allow us to organize the process of feedback. There are two key components of tools for eAssessment, the first is data base containing questions, tasks and cases, the second is technological solution that allows to use the base.

There are the following approaches to assessment: Computer Based Assessment – CBA, Computer-Mediated Assessment – CMA, Computer-Assistant-Assessment – CAA and online assessment. Often these terms are used interchangeably. Computer is an instrument for information exchange between users in the CAA and CMA systems. CBA is often used as an element of training IT professionals. In this case an important task is to evaluate proficiency and skills of students in working with information technologies.

The scope of the online assessment is very broad, and it is an essential analog of face-to-face exam. Online assessment can take place in real time as an interview via video conference or testing in real time with subsequent notification about the assessment and issuance of certificate.

Educational approaches to eAssessment are varied. For example eAssessment may be the final stage of usual learning process. In this case the process of testing solves two problems, namely learning and evaluation and respectively includes two stages: learning and assessment. At the learning stage in the form of testing, the program selects wrong answers of students, the teacher (or program) makes comments on each of them, and the students get chances to repeat the material in appropriate lessons. The final stage is control and assessment of knowledge through a new set of questions on the studied problem.

Works of eAssessment are widely represented on the Internet, including Qualifications and Curriculum Authority – www.qcda.gov.uk, Learning and Skills Network – www.lsnlerning.org.uk. Also, the reader can join the community Evaluation Wiki – http://www.evaluationwiki.org.

The analysis of the strengths and weaknesses of the eAassessment has a long history and extensive bibliography[10].

The next step in the development of distance learning is the emergence of so-called *electronic, or virtual classrooms,* i.e. software that allows to implement in the virtual space learning process in its entirety, namely to publish educational materials, to organize lectures, debates, consultations, etc. Because of the functions that are implemented by the virtual classroom, it can be called a Learning Management System (LMS). It includes the ability to manage the learning process.

LMS is software for information exchange, training and learning management. LMS range is quite wide and includes a broad spectrum of technologies – from ordinary communication on forum to courses transfer via the Internet and providing students and lecturers with opportunities for online interaction. In terms of development and distribution conditions LMS are divided into commercial and open source systems. Among the commercial LMS leading positions are

[10] Literature Review of eAssessment: J. Ridgway, S. McCusker, *School of Education, University of Durham Daniel Pead, School of Education, University of Nottingham*, www.futurelab.org.uk/research/lit_reviews.htm, [17.04.2012]; P. Wojciechowski, *E-tests – arguments for and against*, „e- mentor" 2010, No. 5 (37), http://www.e-mentor.edu.pl/artykul/index/numer/37/id/789, [17.04.2012].

occupied by Black Board, the leader among open source resources is Moodle[11]. However, the leadership in this market has a large variability, so we refer the reader to one of the resources to monitor the events taking place in the world of LMS – www.edutools.org.

Researchers mention synchronous and asynchronous forms of learning activities based on appropriate technological solutions. Asynchronous forms include such methods of work in which students and teachers exchange learning information at a time convenient to them. Asynchronous communication technologies are forums, e-mail, blogs, wikis, etc. Synchronous learning enables simultaneous interaction of two or more participants of the learning process, and most often is performed via video-conferencing, chat, telephone, including mobile communication.The term „M-learning communities" appeared in the recent literature. It denotes training via cell phone. Sometimes asynchronous communities are called „writing communities", and synchronous communities are called „speaking communities".

It is obvious that online learning is most closely associated with the global web. Therefore, its development is inextricably linked with processes occurring in the Internet world. Not surprisingly, the concepts of Web1.0 and Web2.0 are reflected in the concept of distance learning. At the end of the first decade of the XXI century neologisms eLearning1.0 eLearning2.0 are increasingly used, „pedagogy of connectivism" arises and develops, the best known representatives of which are George Siemens, Stephen Downes describe the learning process as part of network activity.

***Blended learning* –** is an attempt to use the strengths of Face to Face and e-learning. The term Blended Learning reflects the different approaches to learning, namely the use of the advantages of eLearning in combination with face-to-face learning, the combination of synchronous and asynchronous learning within online courses as well as the use of different technological solutions (computer, mobile phone, satellite TV, video conferencing, etc.) to implement training

[11] T. Walasek, *MoodleMoot 2010 – a report from the conference*, „e-mentor" 2010, No. 5 (37), http://www.e-mentor.edu.pl/artykul/index/numer/37/id/792, [17.04.2012].

activities. Pedagogical approaches to using information technology in the learning process are very diverse: from the modernization of traditional methods to create new methods[12].

According to A. Heinze and C. Procter, *Blended learning is learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and is based on transparent communication amongst all parties involved with a course*[13]. M. Oliver and K. Trigwell believe that blended learning is based on a mixture of two or more components, such as various means of information delivery, different pedagogical approaches, combining theoretical with practical work within one course[14]. According to C.R.Graham, theory and practice of blended learning make for development of future education model. This way of learning corresponds with trends of modern education such as the intellectualization of the Global Network, increasing role of social networks in learning etc.

According to P. Boltuc[15], virtual component of blended learning methods reflects methods of classroom teaching and offers the following classification of these methods: aided instruction, online conference, webinar, and permanent seminar for a group of experts interested in the special topic.

The author believes that in the future the interaction between artificial and human intelligence in the educational and scientific activities will be explored in the frame of the concept of blended learning.

UNESCO Institute for Education conducted research in 2003–2005, and results show that more than 70% of universities in countries where the Internet is actively developed (Europe, North America, Russia, Asia and the Pacific Region) use blended learning methods. The researchers

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[12] A. Pietrzykowski, *Online lectures in humanities*, „e-mentor" 2011, No. 3 (40), http://www.e-mentor.edu.pl/artykul/index/numer/40/id/842, [17.04.2012]; D. Goltz-Wasiucionek, *Blended learning in language teaching*, „e-mentor" 2010, No. 5 (37), http://www.e-mentor.edu.pl/artykul/index/numer/37/id/793, [17.04.2012]; H. McCracken, K. L. Guthrie, *Experience the Foundation for Authentic Learning Online*, „e-mentor" 2011, No. 3 (40), http://www.e-mentor.edu.pl/artykul/index/numer/40/id/853, [17.04.2012].

[13] M. Oliver, *Can 'blended learning' be redeemed*, *E-Learning*, [in:] M. Oliver, K. Trigwell, M.F. Cleveland-Innes, *Handbook of blended learning: Global perspectives, local designs*, San Francisco 2010, p. 36–49.

[14] D. Vaughan, *Blended Learning*, [in:] D.Vaughan, D. Norman, M.F. Cleveland-Innes, *Handbook of blended learning: Global perspectives, local designs*, San Francisco 2010, p. 3–21.

[15] P. Boltuc, *Education without distance*, „e-mentor" 2003, No. 1.

assert that blended learning provides teachers and students with opportunities to improve the quality of teaching and learning as well as make learning independent, useful, and sustainable.

A typical example of blended learning is a combination of classroom teaching with interactive possibilities of LMS for communication, knowledge monitoring, and publishing of materials.

The palette of pedagogical methods within Blended Learning is multifarious and often depends on the specific course subject area. For example, a lecturer can start the course of Literature with a well-structured introductory lesson in the classroom and then continue it by posting new materials and assignments for students. A teacher can build the English language course so that all audio exercises (listening, speaking, dialogues, etc.) are performed in class, but work with texts (reading, writing essays, etc.) will be organized via LMS as homework. In the course of chemistry, students can explore theoretical material in virtual format, but laboratory work will be organized as face-to-face exercises in classroom.

Blended learning provides a good opportunity for social network creation. The following fact indicates social significance of blended learning. The Socrates Program supports development of nine less widely spoken European languages. These include Romanian, Turkish, Lithuanian, Bulgarian, Slovenian, Dutch, Hungarian, Estonian, Maltese. Pedagogical and technical solutions of the program are based on blended learning concept (http://www.nvolve.net).

The purpose of these courses is to maintain and increase use of these languages. Teams include several partner institutions in each country developing these courses. Public and private universities, private language schools and consultants joined the development teams. Thus blended learning can be viewed as a real model of network communities. Therefore, its study is interesting from the point of view of connectivism.

The communities can interact at any time and any place, invite and involve experts in the subject area, finding a serious social support and constructive learning experience, and gradually transform into a community of experts, what is the most significant result of education.

Technological Approaches: Technology Enhanced Training (TET)

Development of social networks has given rise to the concept of TEL, the essence of which lies in the fact that each person can ignore educational institution services, and train himself directly on the web using the diversity of its resources. The concept describes possibilities of inclusion of social and technological innovation in the learning practice, both for individual users and organizations, regardless of the time, place and pace of learning. Field of TET is to support educational activities via appropriate technological means, without using the services of educational institutions[16].

According modern pedagogical concepts[17], learning can be in accordance with different pedagogical approaches and didactic concepts. TET focuses on the correspondence between pedagogical approaches and technological solutions. The latter are very diverse, just to name a few: providing access to learning resources of depositories, educational hypermedia systems (e.g. MIT Open Course Ware), participation in educational social networks (e.g. Global Development Learning Network – www.gdln.org) work using software (including LMS, CMS) of outstanding universities or open learning communities (e.g. MOODLE), etc. The main thing is to give a user the opportunity to organize the complete learning process by technical means.

In our view TET can be represented as a pedagogical system that includes educational resources (learning content), learning tools, learning methods. Educational resources include a set of information formed directly by the user. Learning tools are technological solutions aimed at the

[16] P. Wojciechowski, *New Media in Education 2011 – a report from the conference*, „e-mentor" 2011, No. 4 (41), http://www.e-mentor.edu.pl/artykul/index/numer/41/id/872, [17.04.2012]; J. Tashiro, K. Jóhannsdóttir, M.V. Martin, G.B. Reynaga, J. Thor, *The Users' Manual to the Unconscious Mind*, „e-mentor" 2011, No. 1 (38), http://www.e-mentor.edu.pl/artykul/index/numer/39/id/834, [17.04.2012]; P. Topol, *Coming of Age in Second Life – book review*, „e-mentor" 2011, No. 2 (39), http://www.e-mentor.edu.pl/artykul/index/numer/39/id/827, [17.04.2012]; P. Boltuc, *An Introduction to Distance Learning in a New Era – a review*, „e-mentor" 2010, No. 4 (36), http://www.e-mentor.edu.pl/artykul/index/numer/36/id/779, [17.04.2012] .

[17] H. McCracken, K. L. Guthrie, *Experience the Foundation for Authentic Learning Online*, „e-mentor" 2011, No. 3 (40), http://www.e-mentor.edu.pl/artykul/index/numer/40/id/853, [17.04.2012]; P. Wojciechowski, *New Media in Education 2011 – a report from the conference*, „e-mentor" 2011, No. 4 (41), http://www.e-mentor.edu.pl/artykul/index/numer/41/id/872, [17.04.2012]; P. Boltuc, *An Introduction to Distance Learning in a New Era – a review*, „e-mentor" 2010, No. 4 (36), http://www.e-mentor.edu.pl/artykul/index/numer/36/id/779, [17.04.2012].

creation of resources and their delivery. Methods of learning activities are based on communication with resources, communication with experts, interaction with the software.

Some of the TET models are the following: Web-supported collaborative learning (WSCL). Computer-Based Training (CBT) and Web-Based training (WBT). In our opinion WSCL reflects learning in social networks, but WBT and CBT concepts describe an attempt of educational institutions to maintain their niche in the world of social networks.

Web-supported collaborative training (WSCT) is a model that allows people to work together via modern technology and social network, and that corresponds to the concept of eLearning2.0. Tools for implementation of such learning are often referred to as Smart Boards. WSCL is taking its first steps, so we can only offer a few hypothetical considerations about its organization, the advantages and disadvantages. The technologies enable users to work with large amounts of information both together and individually. The outcome of learning often represents the quintessence of knowledge and experience of networks' members. It is convenient for professionals, but requires new approaches for assessing students. In connection with this pedagogical goal a training field based on separate private and common learning areas for students should be created. We are currently developing a program of studies of these techniques on the example of an international learning network Virtual World of Russian Museum.

Computer-Based Training (CBT) / Web-Based training (WBT) As an example, the Virtual campus of the Pennsylvania State University (USA) has developed training programs that can be provided to the user on request at a relatively cheap price. User gets access to information via a CD-ROM (CBT), or via the learning network (WBT). Evaluation of training is usually held in the form of tests, the results are evaluated using a computer, and the user receives the results by E-mail (CBT) or via learning network (WBT). Usually the student is given an opportunity to feedback for correcting mistakes and completing work. Often the user can print the final test result record as a certificate. The advantage of CBT / WBT format is individualization of learning. In addition, training in the format of CBT / WBT can be implemented in a large audience at a relatively low cost.

At the same time, there are certain limits for these forms of eLearning. We are focusing on three. (1) These forms of TEL need considerable resources to develop CBT / WBT learning materials, (2) there is a lack of educational interaction between teacher and student, and (3) the CBT / WBT combines the functions of providing information and evaluation. In this regard, many universities reduce the use of CBT / WBT as a resource for independent learning while also make them a part of blended learning programs or online learning.

Conclusion

Study of terminological situation in e-learning has practical and theoretical aspects. Without a doubt, the development of distance education in the world of Web 2.0 and 3.0 will require new pedagogical decisions, particularly in the following areas: creation of resources and collaboration of learning communities. The author believes that in this connection the following areas will be highly promising (1) interaction between artificial and human intelligence in the educational and scientific activities and (2) social networks potential for developing and evaluating educational resources. Since these issues are studied in the cognitive sciences, and new pedagogies such as connectivism, terminological apparatus of distance learning will be expanded in the context of these branches of knowledge, and practice will be enriched with new approaches, methods, and solutions.

In conclusion, we wish to emphasize that technical solutions are only a means of training and join the opinion of experts, who argue that *students and university teachers should not become hostage to technology, each approach must meet the specific needs of the national education system. The university and funding organizations (including the government) must in each case choose the most appropriate, cost-effective and sustainable technology that will help to achieve educational goals. Therefore, an arsenal of technologies used in distance learning is very broad: from radio to national educational channels, from the individual work using educational software programs to educational debates in social networks*[18].

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