LEARNING AND TEACHING IN THE INFORMATION SOCIETY. ELEARNING 2.0 AND CONNECTIVISM

István **BESSENYEI**
i.bessenyei@chello.at ; i.bessenyei@externet.hu
University of West Hungary
Ady E. u. 17, H-9435 Sarród, Ungaria

Abstract:
In traditional societies, socialisation did not take place in separate institutions, but rather took place in the family and within small communities. In modern societies, specialized institutions have taken over the roles of teaching, educating and child minding. Mass-education could only be organized in a standardized, industrial way. Reform pedagogy wanted to change this alienated socialization into socialization that could be ensured in child-centered schools based on independence. The radical critiques of the school system wanted to de-school the whole of society, saying that spontaneous activities and the network of knowledge exchange could replace formal school.
With the spreading of informatization, the utopia of network learning may become a reality, at least technically. A vast amount of spontaneous knowledge exchange is taking place on the interactive World Wide Web. It is on the basis of this that the theories of eLearning 2.0 and connectivism declare that network participation and access to information and to software that interprets and contextualizes information makes a completely new, cooperative, self-organising form of learning possible. This process questions the role of traditional educational institutions today. While the forms of eLearning 1.0 only meant the mechanical transposition of traditional linear learning to a virtual medium, the mode of operation of eLearning 2.0, (organized into networks, self-organising, embedded into activities) may be the starting point and driving force of a learning-organisational process that takes advantage of the opportunities offered by the information society.
Keywords: e-learning 2.0, information society, web 2.0, connectivism

Dr. Istvan BESSENYEI is Associate Professor at the West-Hungarian University, and is part of the Information Society Research and Teaching Group. His research areas include education and information systems, e-learning in didactic activities and knowledge management in higher education.
More information can be found on his site: http://members.chello.at/i.bessenyei/

ÎNVĂŢAREA ŞI PREDAREA ÎN SOCIETATEA INFORMAŢIONALĂ. ELEARNING 2.0 ŞI CONECTIVISMUL

Abstract:
În societăţile tradiţionale, socializarea nu se realiza în instituţii separate, ci mai degrabă avea loc în familie sau în comunităţi mici. În societăţile moderne, instituţii specializate au preluat rolurile predării, educării şi îngrijirii copiilor. Educaţia în masă nu putea fi organizată decât într-un mod standardizat şi industrial. Pedagogia reformatoare a dorit să schimbe această formă alienată de socializare într-una care putea fi asigurată în şcoli centrate pe elevi şi bazate pe independenţă. Criticii radicali ai sistemului şcolar au vrut să de-şcolarizeze întreaga societate, susţinând că activităţile spontane şi reţeaua de schimb de cunoştinţe ar putea înlocui sistemul formal de şcolarizare.
Odată cu răspândirea informatizării, utopia învăţării în reţea poate deveni realitate, cel puţin din punct de vedere tehnic. Un volum mare de schimburi spontane de cunoştinţe are loc pe World Wide Web-ul interactiv. Pe baza acestuia, teoriile de eLearning 2.0 şi conectivism au decretat că participarea în reţea şi accesul la informaţie şi la programe software care interpretează şi contextualizează informaţia, fac posibilă o formă de învăţare prin cooperare complet nouă şi care se autogestionează. Acest proces pune sub semnul întrebării rolul instituţiilor educaţionale tradiţionale din zilele noastre. În timp ce formele de eLearning 1.0 nu făceau decât să transpună mecanic învăţarea lineară tradiţională într-un mediu virtual, modul de operare al eLearning 2.0, (sistem organizat în reţele care se autogestionează şi apoi sunt înglobate în activităţi) poate constitui punctul de plecare dar şi forţa motrice a unui process de învăţare organizaţională care fructifică oportunităţile oferite de societatea informaţională.
Cuvinte cheie: e-learning 2.0, societate informaţională, web 2.0, conectivism

Dr. Istvan BESSENYEI este conferenţiar dr. la Universitatea Maghiară de Vest şi face parte din Information Society Research and Teaching Group. Ariile sale de cercetare includ sisteme educaţionale şi informaţionale, e-learning în activităţi didactice şi managementul cunoştinţelor în învăţământul superior.

Mai multe informaţii puteţi găsi pe site-ul său: http://members.chello.at/i.bessenyei/

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THE CRISIS OF EDUCATION, FINDING A WAY OUT, ANSWERS

1. FROM REFORM PEDAGOGY TO WEB 1.0

In pre-modern societies, children grew up in an activity system and world of norms inherited from their elders. Parents got the children involved in their everyday work, into the life of the family and the community, and all the ceremonies. Socialization, work, living conditions and relationships – informal learning according to present day terminology - were uniform within the framework of family, relatives, village and church.

In modern industrial societies, specialized institutions took over the tasks of teaching and educating. The school system became multifunctional and performed a whole line of duties, such as childminding and provision, ensuring equal opportunities and mobility, transmitting knowledge, providing a moral upbringing, a general education and satisfying the demands of the labour market. After a while, with the general introduction of compulsory education and the accessibility of higher education, carrying out the mass of heterogeneous tasks became impossible, and the contradictions that ensued led to a growing number of critical phenomena[1].

There were several answers to the crisis. Representatives of reform pedagogy tried to model, in a school form, the organic unity of the pre-modern world, and its most famous representatives chose child-centeredness, activity centeredness and independence as their slogans. These experiments all aimed to create micro-mediums in the alienated world, within the islands of which the distances arising from modern differentiation can be eliminated[2].

With the critical phenomena of modern public education, radical criticisms of the school system appeared, and they imagined the renewal taking place outside the reformed institution of school. In his book on the worldwide crisis of education, published in 1968 (Coombs 1971), Philip H. Coombs still dreams of being able to reveal the ills with the help of a scientifically based system analysis, and to solve the crisis with comprehensive, institutional reforms initiated from the top. The ideologists of de-schooling, on the contrary, question the very right of schools to exist. They regard school as a bureaucratic, factory-like institution, an education “kolhoz”, the scene of social taming. Their most famous representative, Ivan Illich, outlines the resocialization of teaching and education, where individuals surpass the formal school system by learning in a self-organising way, from life, contemporary groups and from their elders with the help of critical reflection (Illich 1971). A system of informal and accidental activities and the exchange of abilities take the place of bureaucratic, industrialized teaching, organised from the top. It defines public education as a service centre and outlines that “free choice of partner” in education can be realized with the help of a great communication network[3].

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[1] Just think of the radical student movements of the 1960’s.

[2] The starting point for Freinet was the unity of activity and cognition and the necessity of democratic education. His pedagogy was child-centered, and independent activities (among others handicraft) were important elements of his methodology. Montessori also based her educational system on her faith in the skills/abilities of children. The basic paradigms were “self-chosen work ”, independence of the child and freedom. Waldorf schools stress the importance of the unity of aesthetic, intellectual and emotional education and of being close to nature. Their slogans are: autonomy, problem-solving learning and child-centeredness. Dewey’s key idea was learning through experience (activities, creation, observation). In his school he tried to model the socialising medium of performing tasks at home, and introduced students' self-government. Rogers advocates that the individual needs personality-centered, helping interpersonal communication instead of traditional “teaching”. (See Pukánszky-Németh 2001).

[3] In his book entitled “*Deschooling Society*”, published in 1971, Ivan Illich states that the future lies in abolishing institutional education. He definesschool as an institution which stifles creativity and makes children lose interest in learning, due to its formal rules, hierarchical structure and standardizing effect. As opposed to formal regulations and obligatory curricula/syllabuses, Illich stresses “Most learning happens casually, and even most intentional learning is not the result of programmed instruction. (...)a great deal of learning even now seems to happen casually and as a byproduct of some other activity defined as work or leisure”. Thus, according to Illich, learning is, on the one hand, a subjective, individual activity, which is squeezed within unnatural borders by the formal school order, on the other hand it is a process which, in most cases, comes about as a component of another activity. In an uncompromising manner, Illich suggests that the only possible solution is to „abolish the obligatory school system and develop individual and

Thus, already in Illich's time, the notion appeared that networking was able to create completely new tools for knowledge production and knowledge exchange[4]. The "de-schoolers" based their vision of re-socialization, of open, selforganising, networking public education on this idea. However, at the time, their reform proposals – open educational institution systems for every generation, organically integrating everyday operators into studying, learning based on cooperation and dialogue, making use of different sources of knowledge, integrating the experience of older and peer groups – remained utopias.

Their ideas concerning the realization of the "educational web" - for example establishing a database for learning, making public individual abilityportfolios (e-portfolios), organising a network for contemporary groups to pool their expertise, or a reference service of those individuals and institutions who are potential participants in teaching - lacked the necessary wide-spread and highly developed technological basis and easy accessibility, and the market pressure of the IT industry did not yet exist.

The situation changed radically when the technological basis of networking – at least in the developed countries of the Northern Hemisphere and in Australia – reached the critical level of accessibility and prevalence. There was widespread demand for informal learning and with the slogan of lifelong learning, the political will became apparent. These facts caused significant changes in the criticism of schools: Illich's utopia of re-socialized learning and socialization in the networks suddenly became a possible reality[5].

2. WEB 1.0, ELEARNING 1.0

As the use of the Internet spread, the digital storage and demand of many different kinds of learning content (texts, pictures, multimedia processing) became possible. Although it became possible to access a wide range of information with web 1.0, it was not yet truly interactive. Contents could be placed on the homepages and databases, but it was not easy to create its own contents and share them with others. The typical Internet user browsed the contents, downloaded them, but did not participate actively in the process of creating contents.

Parallel to web 1.0 becoming more widespread, learning management systems, LMS based on the internet became popular as well: these systems organised the databases, communication tools, task solutions, administration – in other words the whole learning process – into units. Online courses, which copied traditional educational algorithms, appeared on the World Wide Web in the form of accurate modules and lessons. Standardized, time limited, linear courses were created, with tutors and formalized, automatically verifiable tasks.

This form, eLearning 1.0, is actually the technologically supported variant of traditional knowledge distribution forms, the virtual extension of textbooks and classroom teaching. Even in

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collective forms of self-education and self-training. Instead of school, he wished to create something less restricted, a system based on voluntariness and individual freedom, which he called an educational network, the basis of which would be made up of all sorts of educational-training communities. According to his ideas the school without walls appears, which is no longer a school (it should rather be called an anti-school), but rather a network of the possibilities of learning, expanded in time and space," explains Zoltán Czeizer (Czeizer 1997:617), summing up Illich's book.

[4] Illich writes the following: „I will use the words "opportunity web" for "network" to designate specific ways to provide access to each of four sets of resources. "Network" is often used, unfortunately, to designate the channels reserved to material selected by others for indoctrination, instruction, and entertainment. But it can also be used for the telephone or the postal service, which are primarily accessible to individuals who want to send messages to one another. I wish we had another word to designate such reticular structures for mutual access, a word less evocative of entrapment, less degraded by current usage and more suggestive of the fact that any such arrangement includes legal, organizational, and technical aspects. Not having found such a term, I will try to redeem the one which is available, using it as a synonym of "educational web."

[5] We shall not discuss the general questions of lifelong learning or e-learning in this chapter, or their relation to the traditional educational system, or the prevalence of IT tools in education. From the point of view of the subject, these are general questions that are assumed to be known. For those who wish to gain in-depth knowledge of these questions before reading the chapter, we recommend the writings of Bertalan Kommenczi (e.g.:2001), Kristóf Nyíri (e.g.:2000), Seymour Papert (e.g.:1993) or Field (e.g.:2006).

this environment, learning remained a passive process, managed from above or outside. The formalized, centralized, bureaucratic world of education of industrialized societies was extended into a digital environment. (For further details see Downes 2005a).

NETWORK LEARNING ON WEB 2.0. CONNECTIVISM

3. WEB 2.0 AND ELEARNING 2.0 AS AN ANSWER TO THE POLITICAL CHALLENGE OF LIFELONG LEARNING

The situation changed completely when the phenomenon called web 2.0 started to spread. The "digital natives" (Jukes/Dosaj 2003) of web 2.0 not only searched for information on the web, but also became content service providers themselves. The areas and tools of interactivity have practically become unlimited. Private and institutional information can appear freely in cyberspace. It has technically become possible to organise the collective knowledge- and entertainment portals into tools of individual knowledge-management. Students are able to create and exchange contents in a cooperative way, within the networks of contemporary groups.

Within the framework of blogs, forums, chats, wikis, newsgroups, and networks of friends and acquaintances, an immense communal information production and exchange was able to develop. File sharers, who had previously been criminalized, strengthened the belief that information was not for hiding from others, but for passing on to others. The editing and selecting of information is made easier by more and more sophisticated tools, from refined search engines through Wikipedia to well-edited debate- and knowledge portals. It has become possible to construct individually reflected knowledge adapted to individual needs from information represented on the World Wide Web. These characteristics form the didactic basis of eLearning.

In the field of eLearning 2.0, knowledge distribution chosen, organised, distributed and controlled by the authorities was replaced by information management based on current needs. Consequently, the importance of official intermediaries and institutions is decreasing. Within the networks of contemporary groups, cooperation, learner-centeredness and the utopia of self-organisation may become a reality. The boundary between student and teacher becomes less distinct. For the "download generation", the Internet is no longer the medium for learning; it is the platform and the centre of personal study. In the milieu of eLearning 2.0, the opportunity to restructure the organic learning environment appears as a possibility[6].

Which developments generated these changes?

- The velocity of data transmission and data access has increased significantly. Broadband Internet (access) has become accessible to large numbers of people.
- Information is ubiquitous, and can be reached with mobile tools.
- As open source software spread, content management became very cheap and simple. The creation of personalized e-portfolios became possible.
- A wide range of new, free tools are at our disposal: blogs, wikis, file exchange programs, tools that make divided content development possible, forums.
- Freely usable contents appeared (open courseware, open content, CCL – Creative Commons Licence)
- New softwares supporting social networks are spreading rapidly.

[6] Kristóf Nyíri writes the following about this: "It's time we reconsidered Dewey's thesis. He reasoned that we need schools, artificial educational environments because the era when young people spontaneously learned while growing up into the world of adults was over. I believe this situation is rapidly changing nowadays. The environment in which today's children play, communicate and learn is becoming more and more similar to the world in which adults communicate, work, do business and find entertainment. The world of mobile phones and the internet unmistakably becomes an organic learning environment." (Nyíri 2001)

- The changeable, uncertain employment situation and the rapid technological changes that school curricula cannot follow have brought about the political challenge of "lifelong learning". In addition to formal education, company retraining and private courses try to compensate for the shortcomingsof the formal education system. In many cases, companies prefer independently organised, onlinetraining and exchange of expertise outside working hours.

It has become a political requirement that students be given the opportunity to participate in web 2.0-based, eLearning 2.0-based education besides the traditional, basic school training, since as adults, they will only be able to keep up with the challenge of global knowledge exchange and be able to use interactive networks if they become familiar with these tools and opportunities at an early stage. Thus, one of the tasks of formal school training is to develop, in addition to the basic skills, ones that ensure that students feel at home in 2.0 interactive knowledge-management structures. The most important competences should be searching and evaluating, and making contact between the different fields of knowledge, ideas and concepts. The real didactic question is how the students are able, independently or organised into networks, through the exchange of thoughts (by way of discourse) and with the help of the tools of the Internet, to contextualize and connect according to individual needs, information originating from different sources.

The phenomena of web 2.0 pose a new competitive situation for the traditional school system. Education must inevitably incorporate the elements of eLearning 2.0 into its repository of tools if it does not want the gulf between the generation's culture and school to deepen even more dramatically.

The portal of Apple Education compares the cultural difference between the new generation that uses web 2.0 and the teachers who were socialized in the paradigm of industrial society as follows:

Digital Native Learners	Digital Immigrant Teachers
Prefer receiving information quickly from multiple multimedia sources.	Prefer slow and controlled release of information from limited sources.
Prefer parallel processing and multitasking	Prefer singular processing and single or limited tasking.
Prefer processing pictures, sounds and video before text.	Prefer to provide text before pictures, sounds and video.
Prefer random access to hyper linked multimedia information.	Prefer to provide information linearly, logically and sequentially.
Prefer to interact/network simultaneously with many others.	Prefer students to work independently rather than network and interact.
Prefer to learn "just-in-time."	Prefer to teach "just-in-case" (it's in the exam).
Prefer instant gratification and instant rewards.	Prefer deferred gratification and deferred rewards.
Prefer learning that is relevant, instantly useful and fun.	Prefer to teach to the curriculum guide and standardized tests.

4. NETWORK THEORIES AND ELEARNING 2.0

According to Castells, the basic paradigm of the information age networking and the space of flows which "reigns above the historically constructed space of places...In other words, flows become the units of work, decisions and output-control, instead of organisations" (quoted by Nyíri 2006). These prophetic words project the most important feature of the organisation of learning in the information age. Accordingly, an ever greater part of the processes of learning and socialisation can move from the "institutions of stone" to the decentralized, self-organising networks supported by information technology, to the "space of flows".

Learning in this de-institutionalised space is not about an organisation centrally defining the input and expecting that every learner reach the output result within a certain unit of time on a pre-defined, uniform route. In this learning paradigm, the commonly defined output aims are considered to be the guiding principle of the process. The roads leading to it are not uniform, they develop in the varied space of networks based on the system of connections of the most varied forms of knowledge carrier (individuals and external sources), on individualized learning routes.

The network theory, based on Granovetter's article on the nature of strong and weak (network) ties (Granovetter 1973), written in the 1970's, and given a new impetus by the works of Barabási and Buchanan (Barabási 2003, Buchanan 2003) at the turn of the millennium, supported the basic, decentralized, "deschooled" learning-organisational principles of eLearning 2.0. Barabási and Buchanan pointed out that most networks were scale free. "Scale free degree distribution means that many network elements have very fewneighbours. At the same time, the number of elements with many neighbours is not zero, either." (Csermely 2005a:35). Distribution according to power functions is typical for these networks. "Power functions mathematically define the fact that in real networks, the majority of points have only a few ties, and these numerous little points coexist with a few large central points that have an unusually large number of ties" (Barabási 2003: 100). In his book, Péter Csermely endeavours to prove that weak ties are what make networks strong. "A tie between two elements of the network is weak if taking away or adding the tie does not influence in a statistically sensitive way the average of the network's typical characteristics (usually one of the groupdefining characteristics of the network). Weak ties stabilize networks" (Csermely 2005a: 363).

Jones and his co-authors (Jones et al. 2006) examined the role of weak ties in network learning. They interpreted learning as a network process, which includes the ties between the students and their tutors, and the ties between the students and the sources of knowledge. Within this process, all ties are equal and none of them are privileged. (This notion differs considerably from the hierarchical network interpretation of eLearning 1.0, which only concentrates on the strong ties between humans).

Imagine a centralized learning network, in which the professor, or the compulsory, very formalized syllabus or department represents the central, strong tie, while the system of connections between the students, the exchange of knowledge, and the connection between students and information sources is insignificant. The network has few weak ties. If the central element is damaged and there is a network disturbance (the professor becomes ill, the department is closed down, there is a shortage of the required textbook, which is the unique source of knowledge), the network collapses. This is because the multicoloured weak ties that make the networks strong are missing. The scale free learning networks supported by information technologies are a lot less vulnerable regarding this kind of disturbance. In such a network, knowledge sharing between students is much more developed. Students store a vast amount of the curriculum on their own electronic portfolios.

Learning blogs, wikis, forums, social networks (independently created contents) offer additional sources. Students are also connected to experts and students of other institutions. Their information sources are varied, ranging from the Internet to the pooling of expertise with graduated students, lecturers and students of other educational institutions, and with older people. They intensively use the syllabus-archives created by students of other institutions. Assistant lecturers participate in the network and preserve the knowledge of their professors in their own e-portfolios. Learning becomes the collective knowledge management based on many weak ties, and not on the central role of the professor or the formalized syllabus. Apart from a few strong ties, as the strategic guidance of the professor may still remain important, the network is made up of very varied, multicoloured weak ties. The network becomes strong: if the professor falls out of the system, the stored knowledge elements and the weak ties that can be mobilized do not allow the network by collapsing or weakening.

Perelman, who in the early 1990's announced a radical criticism of the school system, created the concept of hyper learning (HL) to denote this type of network learning:

"HL is not a single device or process, but a universe of new technologies that both possesses and enhances intelligence. The "hyper" in hyper learning refers not merely to the extraordinary speed and scope of new information technology, but to an unprecedented degree of connectedness of knowledge, experience, media, and brains - both human and non-human. The "learning" in HL refers most literally to the transformation of knowledge and behaviour through experience. "

(Perelman 1993:2)

Perelman says the omnipresent intelligent technological tools motivate us in actively participating in learning. Broadband information transmission makes it possible for everyone to call upon knowledge everywhere, at any time. Not only do advanced search-engines make navigation on the sea of information possible and effective, but they also efficiently aid understanding and contextualisation. This is all the more true because the biotechnologically based external tools which organize knowledge are more and more efficient in the aid they offer. The gauge of individual knowledge and the guarantee of success on the labour market will be the informally acquired competence visible on one's electronic-portfolio, and not an official diploma.

5. CONNECTIVISM

The first level of the learning theories based on network theory is about the organising of individual knowledge, the cerebral connection system of knowledge elements, in fact, it is about the neuro-psychology of individual knowledge organisation. Within individual knowledge organisation, strong ties are represented by knowledge elements that have been placed into a certain, valid system of connections. To these are joined those weak information ties which are more accidental and are not in a strong contextual connection system. These are built around a weakly embedded, yet multicoloured system of aspects. The greater the number of weak pieces of information that surround the knowledge with strong ties, the more willing we are to accept them as valid. The strong tie itself may be strong enough for us to consider the information as valid, but such a condition is a lot more vulnerable. If the source of information which is considered universally valid becomes, for some reason, discredited, that immediately causes all information originating from that source to become invalid. If, however, this connection is surrounded by versatile, secondary, weak information, then it ensures stability even in the case of damage[7]. Siemens writes the following about this:

„How does knowledge flow within a network? Which factors have an impact on the process? If we tentatively ascribe life-like properties to our learning networks, we can partly answer this question. Any living organism seeks two primary functions: replication and preservation. Nodes within our networks follow similar aspirations. Established beliefs and learning often ensure that new information is routed through (i.e., contextualized) the existing network. New information is evaluated and coded reflective of the existing meme[8] of the learning network."

(Siemens 2005)

At the level of network organisation of knowledge, things are completely different. This is what connectivism, which calls itself the learning theory of the information age is all about. Using the tendencies of network as a basis, Georg Siemens founded the theory of learning called connectivism (Siemens 2005). In this theory, Siemens surpasses the traditional theories such as behaviourism, cognitivism and constructivism. (Even this last one - which stresses the socially motivated nature of learning - focuses on individual learning techniques and the processes of inner

[7] This string of thought is based on Péter Csermely's personal statement.
[8] For the theory of memes see Kolin: 2002

mental activity, and does not take into consideration the way learning takes place in organisations and network structures.)

Connectivism considers learning as a process in which the role of informal information exchange, organised into networks and supported with electronic tools, becomes more and more significant. Learning is becoming a continuous, lifelong system of network activities, embedded into other activities. The motivation for gaining and contextualizing information becomes stronger if searching and evaluation becomes a cooperative, network activity. Students can significantly improve the efficiency of their learning if they take part in a network, or virtual community dealing with the given subject. Thus the compiled knowledge once again becomes an individual source of knowledge ("cycle of knowledge development"). The number of cooperative activities increases, the personal social networks become the scene of informal exchange of expertise, and the networks of "communities of practice" develop. Besides the questions of "how" and "what" to learn, we now have the question of "where to learn".

Siemens makes it clear that in networks, both contextualising information and determining validity may become collective processes. (A list of popular topics, useful syllabuses, important links, articles and blogs, compiled in a cooperative manner may serve this purpose[9]). So-called feed-aggregators help the weighting and feedback of the information of one's own knowledge network[10]. Instead of consuming information that has been embedded in connections by institutions, learning may become an active creation of knowledge[11].

6. NETWORK LEARNING – THE UTOPIA OF RESTORED UNITY?

The learning-organisational, knowledge-creating theories of eLearning 2.0, hyper learning and connectivism express the hope that networking supported by advanced technology can put an end to the divided nature of modernity and become a tool of reintegration[12].

There is a desire to decrease the alienation of the world of traditional school with the help of the information flow taking place in the social networks of the virtual world and in the cooperative, creative areas of learning. We talk about network communities, organic and open learning environment, the intertwining of everyday activities and learning, the gradual disappearance of the border between spontaneous and institutional learning, the intermingling of childhood and adulthood (see Nyíri 2001). Although this desire was just a utopia in the age of the early, radical school criticisms, or when the first network learning theories appeared, the extrapolation of the seeds of existing tendencies, today, in the globalised environment of the information society, creating new forms of embeddedness in the virtual space of social networks has become common practice.

The spread of new learning forms also implies the existence of seeds of various conflicts. There are numerous signs that the new forms of informal network learning can only be fitted into the narrow, bureaucratically controlled framework of traditional institutions that are limited in time and resources, with great difficulty. The pedagogical debate concerning this issue often goes in the wrong direction, because the discussion is between two incompatible conceptual worlds. An important educational-sociological, networkresearch and pedagogical question of the coming period will be how the institutions of the official school system will accept this phenomenon, to what

[9] See, for example, the webpage urlguru.hu.
[10] For example *Google reader*, *xFruits* or *blastfeed*.
[11] For the debate about connectivism, see Verhagen's critique and Siemen's reply. (Verhagen 2006, Siemens 2006).
[12] Kristóf Nyíri writes the following about this: "The border between practical and theoretical knowledge is becoming fluid. Practical training and theoretical education are extremely close. Education in the humanities and in science is getting closer to vocational training and technical training, research is now closer to teaching. Primary, secondary and higher level education overlap now, just as institutionalized learning overlaps with extrainstitutional learning." (Nyíri 1997a: 699)

extent they will integrate or reject it, and along what type of conflicts, compromises and solutions this process will develop.

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Glossary

Lifelong learning. The concept of lifelong learning focuses on the development of a new culture of learning and the dissemination of competency-based education. It encompasses the whole life cycle of the individual, from early socialisation and pre-school education to the post-active age (from the point of view of employment). Its objective is to guarantee access to learning for everyone, and includes forms of learning that are outside the school. Apart from learning within the formal framework of school systems, it regards the personality-building experience exchange taking place in any other area of everyday life (for example through the media), at the workplace or in the family, as learning. (Definition of the Ministry of Education http://www.okm.gov.hu/main.php?folferID=1027)

E-portfolio. The function of the electronic portfolio is to compile in one place all the documents related tothe studies of a student. The knowledge maps, learning diaries, solutions to problems/tasks, tutor- or selfevaluations, various links stored in wiki or with the help of other knowledge management tools all promote the pooling/exchange of knowledge among people. Those participating in network learning can form an opinion concerning the previous knowledge of their partners, their sphere of interest and their style of learning on the basis of the e-portfolio, and this can help cooperative learning.

Informal learning. An activity that is realized outside the framework of institutional organisations, aimed at promoting learning, and acquiring and applying knowledge.

Open source code. This expression is used in the case of software where the source code is either public property, or, more often, the owner of the copyright distributes it under a licence with an open source code. This type of licence may, for example, prescribe that the source code must be distributed along with theprogramme, and that it may be modified freely (or at least with minimal restrictions). (Szabó-Hámori2006:582)

Output-control. In a pedagogical sense, output-control means that it is the desired learning (competency) aims that are defined, and not the input content, broken down into a detailed syllabus divided into time-units. Choosing the individual route leading to these aims depends on the previous knowledge of the individual and on the various time demands. In this system, the output is uniform and the input is different.

Learning management programmes (elearning framework systems) (Learning Management Systems, LMS) Learning management programmes based on the Internet contain the following functions:

- Keeps a record of the learners and their results
- Keeps a record of applications to courses and exams
- Gives access to the various materials and elements of the courses
- Keeps a record of the activities of the users: teachers and students
- Usually ensures primary communication interface
- Endeavours to increase student activity with automatic functions.
- Supports the teacher's evaluation/assessment (both formative and aggregated evaluation)
- Contains elements of self-evaluation and accountability
- Informs users of the latest news concerning education
- Supports the realisation/arrangement of web-lectures and web-seminars
- Supports the work of virtual groups, ensures collaborative surface.

Web 2.0 The expression web 2.0 is the collective name of those second generation internet services, which are primarily built on the community, in other words, the users create the content together, or share each other's information. (Wikipedia)