Forgó Sándor- Racskó Réka:

Learning Efforts and the New Media
- A CONNECTIVISM COURSE EXPERIENCE -

From Distance Learning to Network based Learning (e-Learning)[1]

The distance learning perspective was introduced in Hungary in the 1990s. While augmenting oral learning and instruction, distance learning entailing media-supported instruction has always provided an alternative to traditional teaching/ learning locations and times. Such efforts included the correspondence-based educational method of I. Pitman, printed and paper-based educational materials, instruction of the physically disabled via telephone in America, educational programs broadcast via radio and television, mailing video cassettes with educational content, the instructional use of various telecommunication devices (fax machine, telephone) along with other communication forms.

Distance learning, however, as a fully unique instructional arrangement surpasses educational efforts designed merely to overcome physical distance. The common denominator between such learning schemes is the nature of distance learning as a guided didactic conversation effectively carried on by various media. Consequently, adequate motivation and appropriate learner empowerment methods can promote efficient knowledge acquisition through the use of specially elaborated professional texts or educational materials. After the emergence of programmed instruction schemes media incorporated into various instructional packages became not only an important supplement or auxiliary to independent learning, but acquired a learning management function as well.

Furthermore, it is worth mentioning that during this period (the first half of the 1990s) traditional instructional packages[2], considered as an antecedent of *blended learning schemes* were already complemented by CD-based texts.

As TOMPA asserts:

> simultaneously with the instruction package concept it was incorporated into pedagogical and instructional technology parlance in the mid 1970s […] At that time it meant an assortment of

---

A connectivism course experience in Eszterhazy Karoly College: Learning Efforts and the New Media In: Learning Efforts and the New Media: – A Connectivism course experience. Konferencia helye, ideje: Aveiro, Portugália, 2011.09.28-2011.08.30.

[1] LearningEfforts and the New Media. [Az új média és az elektronikus tanulás - In: ÚPSZ Új Pedagógiai Szemle, *2009/8–9. 91-97]*

[2] As KláraTompa argues"it is a system of various educational materials (audio-visual, printed, electronic, multimedia) facilitating the realisation of exactly defined learning objectives via a specific curriculum based upon a structured thematic lay-out while guaranteeing options for performance appraisal and self-evaluation."

URL: http://human.kando.hu/pedlex/lexicon/O2.xml/oktatocsomag.html

> information transmission devices, (slides, film, video, tape, exercise book, models, scale models, plotting board, or student experimental set) integrated separately into the instructional package[3]

Basically, the traditional paper or electronics-based instructional packages developed in the earlier stages of distance learning closely reflected the criteria of the first three generations of the Schramm categories.

In blended learning schemes supported by the e-learning approach the spatial and temporal boundaries are recreated via digital (off-line, on-line) technology. These devices including the CD-ROM, DVD, and Internet at first fulfilled a complementary function, while today they tend to present an alternative to e-learning schemes.
According to András BENEDEK:

> The technological background is a significant aspect of the e-learning concept .[…] While Hungary can no way be considered to be outside the international mainstream, the practical and theoretical background of e-learning has not yet yielded a coherent strategy here.[4]

Due to electronic learning's principal function facilitating independent learning, self-guided and self-paced knowledge acquisition becomes essential. Consequently, teachers are required to design learning materials capable of enabling students to autonomous learning in extracurricular settings. At the same time however, in addition to enabling the students to acquire knowledge, attention should be paid to such learning support options as personalised help, tutoring, guiding the learning process, and providing feedback concerning the appropriate level of knowledge-acquisition. Personal communication between student and teacher is facilitated by such well-known aspects of instant message sending services as the MSN and Skype in addition to other IP-based telephoning options.

E-learning development efforts in Hungary at first relied on project results reflecting the trends and standards accepted by the international informatics community and later methodological experts of distance and traditional education became more significant. The history of e-Learning forums[5] in Hungary functions as apt demonstration of the evolution of e-Learning from a training tool primarily preferred by the business sector into an increasingly popular teaching approach in public, higher, and adult education.

At first e-learning methods were designed to supersede correspondence and part-time education schemes. The original, top to bottom regular arrangement of the learning process including curriculum development, course management and shared communication gradually

---

[3]Klára:TOMPA Integration options provided by electronic media.
URL: http://www.oki.hu/oldal.php?tipus=cikk&kod=testveri-Tompa-mediumok
[4]András:BENEDEK*E-learning strategies*. In: The role of e-Learning in adult education and training schemes (L. HARANGI. – GittaKELNER. Budapest, Magyar PedagógiaiTársaságFelnőttnevelésiSzakosztály. 2003. p. 6-7. (Hungarian Pedagogical Association, Adult Education Section)
[5] The most important annual professionial event of the Hungarian e-learning community
http://elearning.sztaki.hu/archivum

gave way to complementary blended learning solutions often deployed in full time programs as well.

The EszterházyKároly College of Eger, however, was an exception. In 2002 the information management undergraduate degree program. was approved by the Hungarian Higher Education Accreditation Commission. The program launched in (internal network supported on-line) e-Learning format determined the respective institutional developmental trends for electronics-based open learning schemes. The training scheme provided a comprehensive Learning Management System including such features as administration capability, curriculum, tests, learning instructions, communication features (forum, e-mail, communicational and group work functions) along with diverse electronic learning services. Furthermore, the on-line electronic curricula including learning guides, self-tests, and various exercises were complemented by the printed version of the respective texts as well.

The increasing popularity and the subsequent wide-spread availability of Internet-based, or web-surface provided services (Web 1.0) not only shaped the business and communication sphere, but resulted in the expansion of learning tools and approaches. Despite the provision of educational materials in a textual, image-based, or multimedia format true interactivity has not been achieved as learners restricted to downloading the respective information were relegated into a passive receiver role. The emergence of learning facilitation programs, such as the Learning Management Systems not only promoted content transmission and administration options, but by establishing a framework for the learning process highlighted the increasing importance of the learner as well.

The rise of Web 2.0 -based electronic communities not only promotes greater participation via the respective open systems, but upgrades the user from a mere receiver of information into a producer and editor of the given text eventually bringing about the e-Learning 2.0, learner-centred web environments.

This learning format regarding users as a knowledge development community utilises tools connecting network-provided content on a simple web surface. The theoretical background of *e-learning Web 2.0* approaches and that of the principal learning theory of the digital era is provided by connectivism.

Today the electronic communities created by Web 2.0 services providing content elaborated, uploaded, shared, and reviewed by the users themselves have significantly impacted e-Learning schemes as well. Digitalization at first revolutionizing content processing and communication via localized media has facilitated the development of user centred web-based learning environments.

E-Learning 2.0 is a learner-centred irregularly arranged learning format in which the resulting learner autonomy and spontaneous knowledge exchange results not in a hierarchical scheme, but brings about a multi-directional, decentralized, multi-channeled approach promoting the creativity of the learner via collaborative knowledge acquisition.

Today we experience the convergence of various media types. It is not out of the ordinary to listen to the radio or watch the television via the Internet, while we can provide or share content with other users. Modern mass communication devices can optimize the most important channels of direct human communication with an ever-increasing efficiency.

These types of media, however, have always maintained a productive connection with the issues of teaching and learning. Having examined the union (media convergence) and independent proliferation (diversification) of various communication channels both pedagogy and andragogy have to meet the challenge of providing efficient support for the teaching and learning process.

This objective, however, has to be jointly realised by the Hungarian teacher, instructor, and researcher community as the availability of more and at the same time diversely applicable media systems in the field of education and in distance learning as well is a shared concern.

The preceding background and scientific objectives of the empirical research effort

The steady proliferation of networks has exerted a significant impact on the primary source of knowledge acquisition thereby demanding an increasingly dominant role for network facilitated learning in the education process. The higher education and scholarly community of the United States has already recognised that meeting the challenges of today's academic world cannot be imagined without the integration of Web-based devices and tools into the teaching and learning process. Consequently, teachers should be equipped with the appropriate ICT competences, and must obtain an optimal level of digital literacy along with an appropriate content-based knowledge in addition to displaying adequate motivation.

A paradigm shift promoting the incorporation of connectivist learning methods and the application of Web 2.0-based tools into the methodological preparation of prospective teachers have not fully been accepted by the Hungarian teacher training community as not all prospective teachers have become familiar with the main features of this method

Nevertheless, in the Hungarian higher education sphere several efforts have been launched to assess the extent of motivation towards these new approaches Furthermore, in addition to creating a greater public interest attempts have been made to promote a change of perspective resulting in the integration of new Web-based services and options in the curricula.

Inspired by contemporary international trends the Department of Instruction and Communication Technology of the Eszterházy Károly College has recognised this new dimension of higher education and in the previous semester launched a course supported by Web-based instructional devices.

During the course the students applied Web 2.0 options while taking advantage of the motivational capacity of learning by discovery along with knowledge acquisition embedded into other activities. The course utilized the following tools: blogs, community bookmarks (link sharing), content or presentation sharing, shared documents, Wikipedia, cognitive maps, and video-based annotation. In order to promote collaborative efforts students were provided continuous feedback on the submitted assignments mostly in the form of comments, an option made available by most service providers.

The course was completed with a questionnaire-based survey6 focusing among others on the respondents' socio-economic status, access to computers, familiarity with the Internet,

---

6 The questionnaire was compiled by Dr. Sándor Forgó and the respective answers were evaluated by Réka Racskó.

network-based value orientation, and previous knowledge concerning network facilitated learning.

The introduction of the assessment tool as a research objective

In addition to assessing the information and communication competences of students involved in post-graduate Master programs the primary objective of the research effort was the evaluation of their attitudes and acquired proficiency levels regarding the connectivist learning methods. Due to the heterogeneity of age within the examined sample and of the respective discipline specific attributes we believed that the quantitative, especially the questionnaire-based method would be the most effective. Furthermore, since the students had no or limited previous experience with completing on-line questionnaires practicing such skills provided an other reason for the selection.

.

The survey containing open and closed questions, Likert scale, and answer matrix was administered on line to a sample group of 100. In the next phase of the research project interviews will be prepared in order to reveal more profound correlations.

The results of the research
In addition to compiling basic statistics we attempted to reveal more sophisticated statistical correlations entailing the analysis of cross reference tables and the respective correlation and difference probes as well. Having taken four independent variables including sex, age, enrolment type, and Internet proficiency expressed in years we assessed the correlations concerning the dependent variables.
.
.
While the introduction of research results within the abovementioned framework is not our primary aim, we would like to forward some crucial observations and conclusions. Almost half of the sample population (45%) is between age 19-24, while the proportion of the 23-30, 31-40, and 41-50 participant age groups is virtually equal with 18%, 19%, and 17% respectively. Moreover, the rate of full-time and part-time students (47%, 53%) is virtually equal as well. It is vitally important that in case of the part-time students, 98% of those surveyed were enrolled in teacher training programs primarily at the M.A. level.
Having performed the analysis of the cross-reference tables we can establish a correlation between sex and participation in the Internet-based registration process. Consequently, supported by the significance of the Chi square probe we can discard the zero hypothesis as a perceptible correlation can be discerned between the two variables (chi square 18, 662, df=10; p=0,045 <0,05) In sum we can conclude that men tend to be more proficient in Internet-based services, including the requirement of on-line registration as the respective numbers demonstrate.

	. The number of registration-based access to community pages, web department stores, and web 2.0 services						
	1	2	3	4	5	6	7
Sex male	1	0	3	2	8	1	4
female	4	4	4	2	12	8	3
Total	5	4	7	4	20	9	7

Crosstab

Count

	. The number of registration-based access to community pages, web department stores, and web 2.0 services				Total
	8	9	10	more than 10	
Sex male	1	1	3	23	47
female	1	1	5	9	53
Total	2	2	8	32	100

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18,662[a]	10	,045
Likelihood Ratio	21,245	10	,019
Linear-by-Linear Association	10,492	1	,001
N of Valid Cases	100		

a. 18 cells (81,8%) have expected count less than 5. The minimum
expected count is ,94.

Learning by discovery primarily for more experienced teachers, but for young ones as well appears to be an ideal means of becoming familiar with and utilizing the options provided by the new services. Consequently, our previous hypothesis holding that in case of a large majority of those surveyed knowledge is primarily obtained via learning by discovery (browsing on the Internet) and via peer groups was substantiated.

The analysis revealed correlation between the sex of the participant and the methodology of learning the use of Web 2.0 applications .According to the significance of the Khi square test (khi-square 14,074, df=3; p= 0,007 <0,05) a strong correlation can be discerned between the two variables. Consequently, in light of the obtained results we can conclude that men learned new applications at a lower rate than women, (N=10) as they preferred learning by self-discovery via browsing on the Internet (N=23). In case of women, however, learning from instructors (N=26)and peers (N=14) appears to be dominant.
. A

Crosstab

Count

		Source of information on the above mentioned Web 2.0 applications					Total
		instructors	Peers	Internet	other	The participants' children	
Sex	male	10	13	23	1	0	47
	female	26	14	11	0	2	53
Total		36	27	34	1	2	100

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,074[a]	4	,007
Likelihood Ratio	15,530	4	,004
Linear-by-Linear Association	6,434	1	,011
N of Valid Cases	100		

a. 4 cells (40,0%) have expected count less than 5. The minimum

expected count is ,47.

Symmetric Measures

|		Value	Approx. Sig.
Nominal by Nominal	Phi	,375	,007
	Cramer's V	,375	,007
	Contingency Coefficient	,351	,007
N of Valid Cases		100	

Moreover, a very strong connection can be seen between the age of the cohort and the number of on-line registrations. variables (chi-square 83,787; df=50; p=0,02<0,05) The respective results reveal that members of the 19-22 age group have the highest on-line registration number and this cohort is the most active in registering for and trying out new service options..

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83,787[a]	50	,002
Likelihood Ratio	80,133	50	,004

Linear-by-Linear Association	18,309	1	,000
N of Valid Cases	100		

a. 63 cells (95,5%) have expected count less than 5. The minimum
expected count is ,04.

Bar Chart
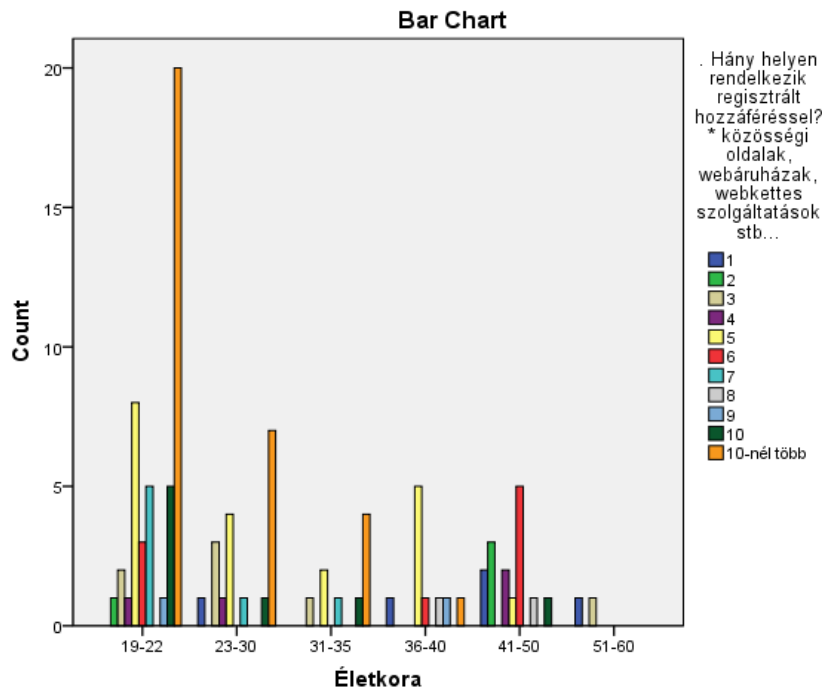
Regarding age and taking advantage of Web 2.0 services including link and picture sharing we can discern a strong correlation. (chi-square=16,182; df=5; p= 0,006<0,05).

Another basic premise of the research asserted that at least half of the students can be significantly motivated by educational methods incorporating network-based learning. The submitted assignments proved that one of the most popular content-sharing services was the Slideshare as 62% of those surveyed used and became familiar with the presentation sharing option while completing their task. The second most popular option was the community bookmark or the Delicious linksharing service followed by the Wikipedia, and blog preparation.

The age-specific characteristics of the participants of the research effort exerted a significant impact on the attitudes towards network-based learning expressed by the strong significance level of the chi square probe. chi-square =0,645; df=0,03; Cramer's V=0,0323; df=0,03).

Consequently, we can discard the zero hypothesis as well. Moreover, due to the lack of significant connection between enrolment type, proficiency in network-based connectivist

methods and the respective attitudes and knowledge, (chi-square=0,075; p=0,454>0,05) the zero hypothesis cannot be discarded.

The main conclusions and summary of the research effort, perspectives for the future

Although the results of the research project have not been fully processed, in light of the available data some conclusions can be made. Consequently, while students can significantly be motivated by the new services and applications, a competence level required for confident use has not always been achieved. The subsequent narrowing and eventual elimination of the digital gap requires additional remedial efforts. The provision of new ideas concerning the application of the Web and the Web 2.0 devices in learning and teaching to students participating in educational programs incorporating network-based learning led to two benefits. Consequently, the answers given to the questionnaires revealed that students participating in M.A. level teacher training programs can obtain crucial skills for the teaching profession along with developing a more confident and secure attitude towards the use of said devices and options based upon a more profound technological prowess. One of the main conclusions is that we have to place a higher emphasis on familiarising the members of the older generation (Generation X) with the options provided by the Internet as they still not fully taking advantage of and not adequately well versed in the Web 2.0 services and thus they do not integrate such approaches into their didactic arsenal.

A greater role should be given to activity-based approaches in the instruction process as potential deficiencies can be remedied more effectively and brainstorming methods crucial to peer-based learning can be applied with greater efficiency as well,

.

The increasingly popular and easy to operate service options and the application of the relevant methodology can go a long way in narrowing the gap between digital immigrants and natives thereby facilitating digital equality of opportunity in the higher education sphere.

The primary objective of our empirical research project was the assessment of the efficiency of the heretofore delivered courses in light of the new learning options. Presently the respective research results are being processed and following a more sophisticated statistical analysis the information will be used as starting points for other scholarly inquiries. Our long term goals also include a comparison of the respective research results with similar scholarly programs performed in Hungary and in other countries as well.

Finally, we can conclude that the integration of the new methods into the methodological components of teacher training programs is expected to obtain a strategic

significance. The Eszterházy Károly College adopting such initiatives has proven to be a pioneer in this field as teaching programs supported by network-based learning are being continually offered and delivered in order to assure the highest possible standards and potential perfection of the respective teaching efforts.