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Seres György - T. Fórika Krisztina - Miskolczi Ildikó - Sz. Lengyel Piroska - Gerő Péter - Pálinkás Yvette

drseres@drseres.com – krisztina@forika.hu – miskolczi.ildiko@gmail.com – l.piroska@t-online.hu – gp.project@gmail.com – palinkas.yvette@gek.szie.hu

A CLUB FOR E-LEARNING RESEARCHER - EDUCATORS IN THE CLOUDS SOME ASPECTS OF E-LEARNING

Absztrakt

Működik Magyarországon egy online e-Learning club oktatók számára. A klubtagok különböző felsőoktatási intézményekben oktatnak. Tapasztalataikat, eredményeiket több mint 3 éve osztják meg egymással. Az első írásban az egész életen át tartó és az egész életre kiterjedő tanulás formális és nem formális módjairól írnak a szerzők. A második cikk az élethelyzethez igazított tanuláselveiről és módszereiről szól. Harmadikként bemutatásra kerül, hogy hogyan vált az elektronika az oktatás tárgyából és eszközéből annak színterévé. A negyedik írásban az élménypedagógia kerül elemzésre. Az ötödik írásban a szoftverrobotok oktatásban történő alkalmazhatóságáról olvashatunk.

There is an online Club for e-Learning researcher-educators in Hungary. Members of the Club are lecturers in different Universities and Colleges. They research some aspects of e-Learning together since more than three years. First aspect is coherency of lifelong and life-wide learning – formal and/or informal sides of e-Learning. Second one is life-tailored learning – principles of the new methodology–, competence-oriented methods and culture using of technology and virtual classrooms. Third aspect is progress of technological environment of e-Learning – how did electronics turn from subject and tool of education to scene of education? Fourth topic is method of the experience pedagogy in e-Learning – motivation for learning, commitments, attitudes, personalities, interactive teaching materials and learning by enjoying. Last research line of members is application of software robots in e-Learning – searching robots, translating robots, text recognition robots, speech recognition robots, plagiarism-recognition robots, simulators, tutor robots.

Kulcsszavak: *felhőtanulás, egész életre kiterjedő tanulás, élethelyzethez igazított tanulás, élménypedagógia, szoftver robotok ~ cloud learning, lifelong learning, life-wide learning, life-tailored learning, experience pedagogy, software robots*

INTRODUCTION BY GYÖRGY SERES

There is an online SysAdminLess Club for e-Learning researcher-educators in Hungary. Permanent members of the Club are lecturers in different Hungarian Universities or Colleges. They are authors of this study.

We research some aspects of e-Learning since more than three years:

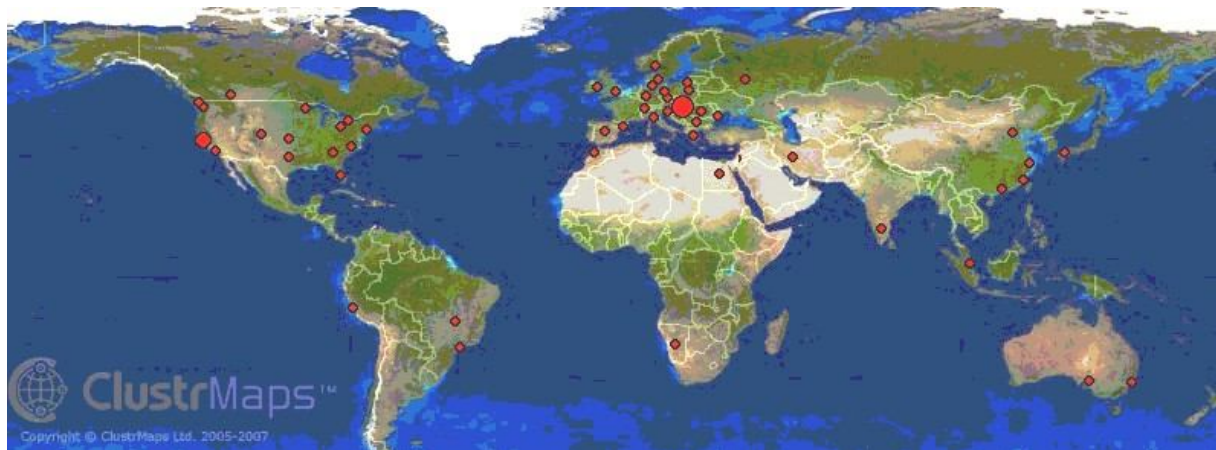
- progress of technological environment of e-Learning;
- method of the experience pedagogy in e-Learning;
- coherency of lifelong and life-wide learning;
- opportunity of application of software robots in e-Learning;
- life-tailored learning.

Short story of the Club

A doctoral topic – „*Use of e-Learning and distance learning in military higher education*” – and a curriculum – „*IT bases of interactive e-Learning and d-learning*” – has been called at PhD School on Military Technology of Zrinyi Miklos National Defence University (ZMNDU) in 2007 year.

Because the 10 years old personal homepage¹ was unable for interactive distance learning, that's why a new Drupal engine based Web 2.0 portal has been created – named E-TEACHER².

The new portal has been discovered by great searching providers without any advertisement, and many – more than 5000 – quests were directed by them to the portal from the entire world



1. figure. Visitors' map of our portal¹

A distance e-Learning course has been called on the new portal by called curriculum “*IT bases of interactive e-Learning and d-Learning*”. Many people begun the course – and some of them have successfully performed it. Four persons from them report for doctoral student at PhD School on Military Technology of ZMNDU successfully.

A six person's researcher team came into being as an outcome of the course. All of us are lecturers in different Hungarian Universities or Colleges. All of us have individual personal

¹ <http://drseres.com>

² <http://drseres.com/elearning>

homepage and professional educational portal without system administrators. That's why we established SysAdminLess Club and the portal was altered to blog form³.

Permanent members of the club meet weekly on Skype, on WiZiQ or other virtual classroom among the Clouds. A lot of individual and common publications, lectures at scientific conferences, applications and awards and four individual Moodle portals⁴ were born as a result of our meetings.

And we learn so much from one another.

Research topics

Members of the Club research some aspects of e-Learning since more than three years.

First aspect is coherency of *lifelong and life-wide learning* – formal and/or informal sides of e-Learning.

Second one is *life-tailored learning* – principles of the new competence-oriented methodology, methods and culture using of technology and virtual classrooms.

Third aspect is progress of *technological environment of e-Learning* – how did electronics turn from subject and tool of education to scene of education?

Fourth topic is methods of the *experience pedagogy in e-Learning* – motivation for learning, commitments, attitudes, personalities, interactive teaching by four levels of e-Learning curriculum and learning by enjoying.

Last research line of our members is *opportunity of application software robots in e-Learning* – searching robots, translating robots, text recognition robots, speech recognition robots, plagiarism-recognition robots, simulators, tutor robots.

What are our results in researched by us topics?

LIFE-WIDE LEARNING LIFELONG – BY ILDIKÓ MISKOLCZI

In the 21st century there is more and more knowledge. This is increasingly more difficult to make the process of reception and processing of the user. However, the knowledge becomes the very quickly obsolete, so the renewal time of the knowledge is less and less. We want to know more and more in less time. In a specific field of knowledge "up-to-date", complex way, however, many-to-know knowledge applied, which means the significantly increased the length of time in learning.

Change of factors of learning

Technical development

However strange it may seem, but if we research on the development and the appearance of distance learning, we have to search for its roots in the correspondence course. According to some researchers, the founder of the correspondent education was St. Paul, [1] who has made his clerks write his doctrines and made his messengers spread his teachings. The papyrus was massive product were so it could take the long-distance transport well. St. Paul "has also used a certain degree of interactive items" in his written messages to ensure that his words get into the thought of the followers. He put rhetorical questions in his texts (and even

³ <http://drseres.com/elearning>

⁴ <http://miskolczi.net/moodle> , <http://forika.hu/moodle> , <http://www.lengvelpiroska.hu/moodle> , <http://www.geropeter.hu/moodle>

he replied to them). So he has broken the monotonous tune of the written text. These questions-answers had claimed to continue the thinking of the raised thoughts.

Opinion and research result of authors about technical development of learning in 20th century see in chapter 3.

Changes in the needs of society

"In the second half of the 20th century, however, not only science, technology, but society, and the economy have also begun a fast development, and because of this, the knowledge that we obtain in the schools become obsolete in our active life many times, so that we have to start to learn again and again if we want to save our competitiveness on the labor market. At the end of the 20th century, it has been born the concept of 'lifelong learning'⁵ [2].

Development of info-communication technology (ICT) and significantly changing social needs have effected on the attitude of the people to the knowledge and learning in the third part of the last century.

Today, there is no doubt that the lifelong learning, more specifically, the extending of it to each part of our life is the necessary coefficient of our life. We have renewed our knowledge always to adapt to the evolving changing economic conditions and social expectations – it is essential in the sense in the globalised world. Beyond the individual, personal demands the constraint is often the reason for a continuous learning process as it is in the 21st century's accumulated knowledge that are produced by hyper-society – information has increased almost exponentially from hour to hour. However, a factual knowledge can very quickly become obsolete on any territory/special field of life.

Changes in the methodology of education

The eLearning

In the second half of the 21st century, at the end of the 1960s, the beginnings of eLearning were appeared. In the 1970th were already operating networks specifically for higher education (PLATO, TICCIT). The modern ICT supported education has been developed from the end of the 1980th – that formed eLearning, what can change the learning process and the methodology of teaching fundamentally.

"*The nice new world of e-Learning is virtuality just so it's only an opportunity, potential a reality ... It is the virtual reality of pedagogy.*"⁶ [3]. Today, probably he thinks himself otherwise these lines, a part of them. Today e-Learning is not only a possibility, not only virtuality. Here is an integral part of our everyday life. "*Virtual reality of the pedagogy*"-type Komenczi. So I would say: the virtual world of pedagogy is the reality.

The opportunities, giving by eLearning, make today's pedagogical practices wider and more colorful. More and more elements of it are displayed and continuously incorporated into the training attendance (joint learning, blended learning), as well as in a large part of the distance learning. In the regular training and in non-formal education systems both, the application of it spread quickly. Today's N-generation, or digital generation, who has already increased by up to life was not in a section, when you do not have a computer, internet, take for granted and require the application of modern techniques, technologies in the field of education too.

The dominance and spread of electronic devices in the education means that we won't talk about "*learning*" and "*eLearning*". The "*e*" prefix will disappear quickly from this form of

⁵ Translated by author.

⁶ Translated by author.

education, because the electronic education, e-Learning, as a form of learning will become usual, natural.

The networked learning

The networked learning as a technique is significant, because with the help of technically a specially developed electronic learning curriculum, the eLearning (necessarily), students don't go ahead in the curricula in a linear way, but also the construction of the digital curriculum allows that students explore the existing context independently.

However, the networked learning not only means the structure of the curriculum, but the possibility (and need) to advance knowledge can be reached, not only from the syllabus but with the using of additional resources (which are attached to it), and which are found somewhere in the virtual space. A virtual learning environment, closed, or the World Wide Web can be the stage or incarnate of this network.

The cloud-learning

The formation of a cloud-learning practice is over the past two years a revolutionary new opportunity for education-methodological issues. From education-technical point of view, I see the importance of it that can allow eliminating the space and time limits and the lack of the presence of personal trainers in the educational system. Virtual consultations, virtual conferences, can be created by the Internet service providers. Thus, the learning support will be not only modern, but also interactive. The services of the cloud support not only the learning of individual student, but it also give thumbs up the teacher and student exchanges. In addition to the individual learning, group learning can also be taking shape.

The networked Learning in a connectivity way

The fundamental principle of connectives means that we view the knowledge, as a network, the minimum elements of which are the nodes in our network. These could be the conceptual definitions, phrases, definitions, any elementary knowledge. The extremes among them are those relationships, with which we connect the nodes. In this sense, learning may mean two things:

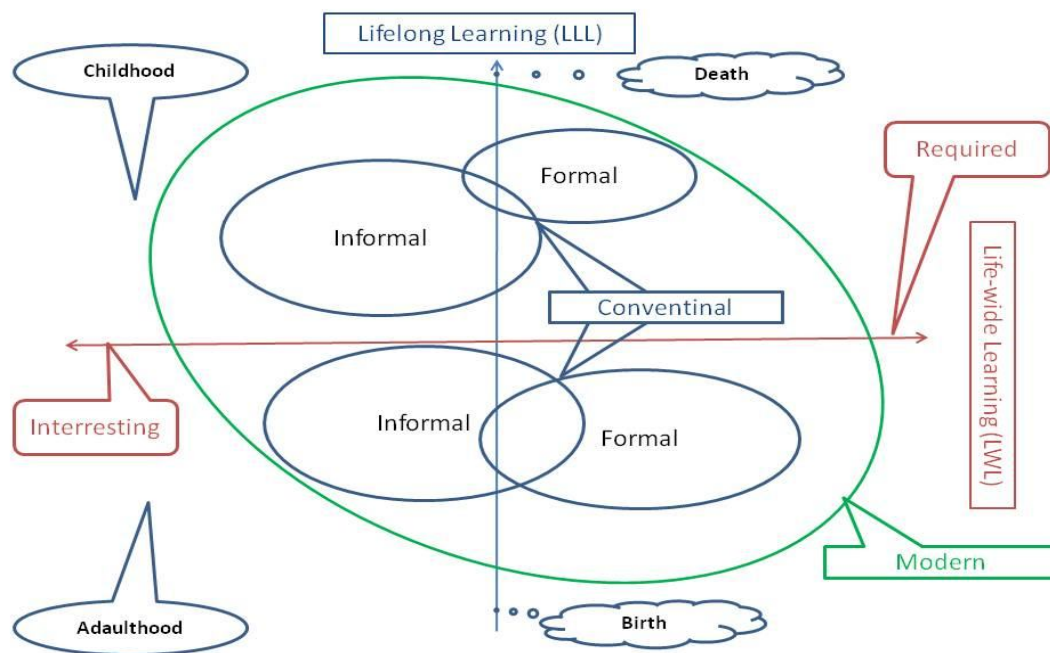
- - new nodes to be connected to the fabric
- - reordering the net connections.

The high-profile (connecting with many edges to other nodes) nodes determine our thinking. The connectivity view determines the learning process and its relevance in the opportunity of the construction of the knowledge network and its restructure on demand. Thus, our knowledge increases changes constantly through the established network connections. The network research deals with the examination of this new paradigm which is also a method and an approach. The network research, on a micro level, examines the relationships between things, and on a macro level, samples, that drawn by the connections [4].

Life-wide learning

Needs of the lifelong learning (LLL) is basic from view of point of economy and society in the 21st century. To become a good technician and potential worker is not enough to learn a job when we are young. All life we have to learn that can be professionally recognized. The economic and financial crisis in the world, the changes in societies are demand not to know only one thing, but we are able to stand other areas of life is our place. This is the concept of the whole of life learning, covering the all territory of life (life-wide learning, LWL). The

interpretation of KOMENCZI [5]: the LLL is at the same time, and the contents of the LWL are determined by the content of the thinking (life-wide learning) in the 21st century. We can see the contents of throughout the life-wide learning (LLL and LWL) context on the Figure 2.



2. figure. The whole life-wide learning model (by Ildikó Miskolczi)

In the 21st century there is more and more knowledge. This is increasingly more difficult to make the process of reception and processing of the user. However, the knowledge becomes the very quickly obsolete, so the renewal time of the knowledge is less and less. We want to know more and more in less time. In a specific field of knowledge "up-to-date", complex way, however, many-to-know knowledge applied, which means the significantly increased the length of time in learning.

LIFE-TAILORED LEARNING – BY PÉTER GERŐ

Life-Tailored Learning [6] is one of the educational methodologies available for adults to support their learning. It is a sequence of methods and instructions (a practical guideline) to help with planning, organizing, carrying out, evaluating as well as governing knowledge acquisition and its transfer. It is a learning-teaching technology, which describes the learning process step by step, starting by assessing the learning needs, identifying whether entrance requirements / criteria are met through developing the professional content, structuring the learning content into modules as well as defining the roles of the student, teacher, consultant, tutor, mentor, all leading up to the closing evaluation (exam).

Adult learners usually learn with a more specific goal in mind. Further characteristic is that there are big differences between certain learners' recognitions and circumstances. Besides the adult students' learning patterns are also different: they differ from one another's and from the patterns which can be observed in case of children. In other words: people with different existing knowledge and motivation, living in different circumstances have to achieve particular learning aims.

Life-Tailored Learning is a learning technology developed for cases, where the exclusive aim of learning is to reach the adult learners own, measurable goals.

The fundamental idea of the methodology is that by knowing the goal of learning it is possible to reveal the necessary studies for the given student (to expand his/her preliminary knowledge, studies, and existing competences). With the help of this information we can choose (considering the given student's situation, possibilities, schedule etc.), from the huge number of known means, methods and sources, the ones that are the most effective in case of a given learner. The student, guided by the adequate teacher, goes through the planned learning process.

The "learning with a more specific goal and expectation" is considered to be a learning in order to get new and expand existing competencies. From the various interpretations of competency we use the one that also includes the motive system that serves the given function beyond the ability to apply. Regarding to the final tests and assessments the question naturally arises whether legitimacy and entitlement should be included, but they are not strongly connected to pedagogy so in terms of the methodology we do not consider them as part of the concept definition.

The principles of the methodology and the course by the methodology of Life-Tailored Learning

The methodology of Life-Tailored Learning is a practical guideline proceeded from the above mentioned. Its structure is defined in the following way.

- The process should be divided into different steps that are connected to the individually defined parts of the learning aim.
- Entry and completion requirements should be defined to each step.
- The specialized material (the content of learning: the gap between the entrance and completion conditions of the given step) and the learning material (the specification of the learning devices and methods) should be separated.
- The development process should be divided into steps so that we do not advance to the next without having cleared the preconditions, and if we make a mistake we should only take one step backward. That is to say every step includes the supervision of the previous step (we should only be able to complete each step successfully, if we proved that we successfully finished the previous step).

Within this: the methodology chooses from the methods and devices from the point of view of practicality, leaving place to possible additions in the future.

Forms of Life-Tailored Learning

- university coursebook, and training for learning content development and learning assistance activities;
- learning content and learning assistance system to help attain the desired, envisaged competence;
- in mobile version: a workstation (in accordance with log-in there can be a student, teacher, author... and so forth workstations) [7];
- virtual classrooms in the clouds of internet .

There are various technological and methodological tools for a properly designed distance learning process or computer assisted learning in different life situation.

CLOUD LEARNING – BY KRISZTINA FÓRIKA

Tool of education last century – how did electronics turn from subject and tool of education to scene of education?

Start of Public Radio and TV broadcast made the electronics new important *subject* of education in 20th and 30th of the last century.

Spreading of schools' broadcast and the school televisions' made the electronics *tool of public education* in 40th, 50th and 60th.

Electronics became *tool of education in schools* when audio and video recorders' and PCs' price turned into one which can be reached in 70th and 80th.

But the wide-ranging application of the internet and the fast internet availability leads to a big breakthrough in the 90th and in the 1st decade of the new millennium. Any kind of curriculum became accessible for *anybody, anywhere and anytime under real time* with help of digital audio or video recording and broadband data transfer on the internet. [8]

So, the building of eLearning, the Internet has been built. There is the situation, when electronics turned from subject and tool of education to *scene of education*. The computers – the most modern desks – are ready to welcome students. All the imaginable and unthinkable forms of demonstration multimedia devices – as blackboards – and presentation software – as boxes of chalk – are available for teachers.

Clusters for e-Learning

Running of increasingly more complicated application programs, transfer and storage of increasingly more data files and more speed of data transfer or processing make ore hardware and software demand on users and providers. It is the recognition, which born service of Computing techniques like Cluster-, Grid-, and Cloud computing. These distributed environments should promote high cooperation and effective e-Learning. We can be aware that grid computing, cluster computing and cloud computing are all terms closely interrelated with each other. In order to give the most appropriate definition of cloud computing we have to start with looking at cluster computing. During the last three decades of the last century in the field of low-cost high-performance microprocessors, high-speed networks and distributed computing has inspired many researchers to diverge from expensive and specialized parallel supercomputers towards cheaper and general purpose clusters [9].

The cluster concept is, that the implementation of the programs picked in a parts which can perform at the same time with each other in a separate processor. Thus, the processing of programs on 'n' processors can also be up to 'n' times faster. In the cluster more, then one processor use the same memory and bus system within a single computer. The cluster interconnection network speed is dedicated, high-end with low latency and high bandwidth. The applications are associated with science, business, enterprise computing, based on data centres. In addition to the scientific cluster applications in 90's emerged clusters to support e-Learning. The e-Learning cluster in general has the goal of researching and advancing the state of the art in learning techniques on the application, and use, of semantic technologies with particular emphasis. Sometimes schools are establishing a collaborative and innovative learning community that engages learners in inquiry and cutting edge pedagogy through meaningful participation and contribution in their global community, like Eastern Block e-Learning cluster [10].

Grid computing in education

From the early 2000's the grid computing became a popular term, and the application has started in the e-Learning. This technology has been applied to computationally intensive scientific, mathematical, and academic problems through solving large-scale and data intensive computing applications. Grid computing is used in commercial enterprises for such diverse applications as molecular modelling for drug design, economic forecasting, seismic analysis, brain activity analysis, and high energy physics, and e-Learning. Learning grids provides the flexibility and opportunities to reach out to a much larger audience. Schools and institutions have been using it to complement their existing classroom lectures. e-Learning grid allows information and learning contents to be shared or retained as proprietary materials for the individual school. It allows all users to interact and grow with the learning community, sharing ideas and ways to manage learning and project work [11].

Special educational Cloud Computing – the Cloud Learning

In 2007 after floating “Blue Cloud computing” planes IBM expand its leading a joint research initiative of 13 European partners to develop technologies that help automate the fluctuating demand for IT resources in a cloud computing environment. In 2008 cloud computing started gaining popularity and became emerging approach to shared infrastructure in which large pools of systems are linked together to provide IT services. We must to get acquainted with a new concept at begin of the 10th of the new millennium – it is the Cloud Computing [12].

Modern interactive education in our time can be up-to-date and cost effective if it takes up special educational Cloud Computing services and Community portals.

Cloud computing services tested by SysAdminless Club

Cloud Learning is a side of Cloud Computing technology which includes services of learning software, platform or infrastructure free or pay for use between the didactic organizations and the attendees. Our SysAdminless Club is a Hungarian community, which goal is to use Cloud Learning technology to providing free services to students, which include email, contact lists, calendars, document storage, creation and sharing documents, presentations, virtual classrooms etc. and support the effective lifelong learning. There are various services like this, which are tested by our team.

- Storage and share of the most often-used curriculums – documents – can be realized by a lot of service provider on the internet.
 - Most widespread are Google Docs and the Windows Office Live of Microsoft. Both of them are able for individual and shared editing various documents online with chat among editors.
- Storage and share of audio-visual curriculums – pictures and videos – is the oldest service of Cloud Computing after search providers.
 - Most popular is Picasa and Youtube, but Vimeo and Flickr portals are used by a lot of users too.
- Presentations are the most used tools in all forms and level of education, knowledge management and business. That's why a lot of service providers are specialized to storage and share of presentations.

- By our experiences the authorSTREAM portal warrants the most authenticable show of presentations like PowerPoint, but Slideshare and Scribd portals are popular in this service of Cloud Computing too.
- Novel, interesting and scenic presentations can be created, stored and showing online by a new portal Prezi – which is bring into being by Hungarian developer. Providers of storage presentations Google Docs and authorSTREAM permit of public or private show with parallel chat among presenter and audience.
- Conference call by Skype or Windows Messenger can be used for talking in the time of presentation too.
- Special services of WiZiQ and DimDim portals provide more lifelike feasibility for lectures which meets condition of virtual classroom.
 - They confirm smart board service with voice and video contact beside show of pictures, videos and presentations.
 - These portals provide to meet each other teachers and students in a topic of education as an addition special online TV portal Ustream permit of broadcasting a lecture from our webcam.
- Blogging – the trendiest service of Cloud Computing – can be used in education process too. Teachers and students can to keep a text or multimedia diary – blog – about their ideas, observation from curriculums, lectures, fellow students and teachers.
 - Posts on the most popular blog providers Blogger and Wordpress are text with pictures and links mostly. The tumblr portal usable embedding miscellaneous blog posts – text, picture and video.
 - Service of the Wallwisher portal can be used as a bulletin board of a class, because its editing is very simple.
 - More of Learning Management Systems – like Moodle or Ilias – provides blogging for its users.
 - Social contacts confirmed by community portals in Cloud Computing can be very useful for network based education.
- Learning Management Systems provide complex tools of e-Learning in the world of Cloud Learning.
 - There is some free software beside buyable and rentable systems of great firm – like Microsoft, Oracle, Adobe etc.
 - The most popular free LMS Moodle and Ilias are used by many Hungarian educational, business or government organization and individual teachers.
- More of provider of Cloud Learning offers tools for creating tests and self test.
 - Online questionnaires can be created with Google Docs, which are appreciable in common table after submitting.
 - More of virtual classroom services and LMS contain a lot of testing tools too.
 - Effective, interesting and scenic tests can be created with special software – like free Hot Potatoes and Quandary.



3. figure. Cloud Learning (by György Seres)

We have tested these Cloud Learning services by creating individual sub-domains at above providers.

EXPERIENCE LEARNING – BY PIROSKA SZ. LENGYEL

Educating in the virtual environment may only be fruitful, if we create high quality learning curriculum, following the differences in the individual cognitive styles and learning habits of the students, when relying on such learning methods, which will keep the students' interest alive, will motivate them for learning.

Moreover, the teaching/learning process, itself, has to follow the pedagogic principle of forming personalities in an appropriate way and developing abilities in an adequate way. Thus, the process is to aim at providing a convertible knowledge, a problem solving way of thinking in addition to the quantity of knowledge to be gained [13].

A set of e-books (Accounting of Subsidies, Introduction to the Accountancy, General Accounting, Taxation) having been compiled on the basis of the above principle is available (in Hungarian language) on the Moodle-portal of the author's home page⁷.



4. figure. E-books compiled by the author⁸

⁷ <http://www.lengyelpiroska.hu/elkonyv.html>

The methodology of the e-books are being relied, on the one hand, on the appropriate aspects of the knowledge management, the learning management, and on the aim at assisting students in finding and developing their own learning style, in order to obtain real knowledge, through a self-relied learning activity.

The e-books, on the other hand, are to present how to increase the students' motivation for learning, to develop their commitments, their positive attitudes, and their personalities by using state-of-the-art interactive teaching curriculum, by acknowledging their results performed and by rewarding them.

Furthermore, the e-books are inducing the students to accomplish a self-organised learning, supported by the Internet; however they are obliged to follow a disciplined and linear progress in the learning material. Due to the specificities of the learning material, the students, for the sake of the successful accomplishment, have to respect the offered order of a four-level progress:

- Level one (TO READ TO PREPARE YOURSELF): learning on their own, using “The learning material” module, which is easily readable and rich in multimedia devices.
- Level two (TO DISCOVER THE ESSENCE OF THE ISSUES): deepening the acquired knowledge by using the “Lectures” module.
- Level three (TO DEBATE TO CHECK YOUR KNOWLEDGE) checking the knowledge by using the “Practices” module which offers practice-oriented examples with an opportunity to work in teams and to debate the different problem-solving approaches.
- Level four (TO PERFORME TO FEEL THE SUCCESS) the “Stage” module, as the “level of play/action”, serves for trying the practical application of the knowledge.

The e-curriculum, also, contain a set of practical works of different difficulty level. The opportunity of a random choice among them increases the probability of the successful problem solving, as well, which influences the competence sensation advantageously, while the successful solution of the works strengthens the self-confidence of the student/user, which is extremely important for both the intellectual health and the learning success, as well. A built-in program of the module evaluates the student/user's results promptly, thus the immediate feedback can contribute to confirm himself in his personality and to respect himself for his result achieved. From learning efficiency's point of view, it is exceptionally important for the student/user to release his own negative attitudes against himself, to have a healthy self-confidence and to realize, he is a valuable man.

Four levels of progress

Level one, i. e. the level of acquiring information, serves for a self-relied acquisition of the knowledge for the student, thus learning on his own. The module uses passive and active elements, supported by multimedia devices, for presenting the topics, illustrated by pictures, figures. The content, being split into information units, will form an organic entity, thus supporting the structuring of the acquired knowledge. The built-in guiding elements and feedbacks are encouraging the students/users for active learning and are, at the same time, directing, optimizing the learning process, adapting to the learning styles and mental standards of the students.

⁸ <http://www.lengyelpiroska.hu/elkonyv.html>

Level two of deepening the knowledge is for learning with interaction and learning with teacher's cooperation. The lectures presented are fundamentally being relied on an illustrative-explanatory method. The essence of this method lies in visually presenting, modeling the topic, even playing it, to the extent possible, and commenting and explaining it in a short text. The advantage of the method, that it presents the topic in one shot and in its context, at the same time, while directing the students/users' attention to the message. Notwithstanding, the very key element of all learning action is the perception, the cognition. The progress made on his own, the self-relied development, is able to multiply the efficiency of the learning process. The activity and progress his own is a real, natural learning action. It is being fed by the student's curiosity and manifested in increasing desire for learning (observing, appraising etc.). One's knowledge, acquired in this way, can be recalled even in many years later.

Level three, the "Practice" module, serves to measure the level of acquisition of the knowledge. Both the teacher and the student/user receive a feedback on how and to what extent the latter has managed to acquire the learning material. The module serves for strengthening self-confidence of the students/users. Every student/user may choose out of the works with different difficulty level of the Practices, in accordance with his own assessment regarding the level of knowledge acquired by him/her.

Level four, could also be called the Stage (the acting level) emphasizes the importance of "the acting school" [14] the view that the "acting" is inevitable both for developing the thinking and for maintaining the interest. It gives an opportunity to the students to try how they can apply their knowledge in practice. The students/users choose a case study out of the "Practices", they prepare its script, then they present it, they "play the story" and show its possible solution.

The assessment of the student/user teams' presentations will be carried out, under teacher's guidance, in the framework of "a stage debate", prepared in advance according to appropriate appraising points.

The Stage gives the experience of joyful learning, it raises the lower status students/users' interest, too and increases their autonomy sensation. Its atmosphere, being characterized by cooperation, enhances the inner motivation, the long lasting maintenance of which may only be fruitful in such a learning environment, where the single elements, the "players" are strengthening and presupposing each other.

Successes of author's home page

The individual home page of author (<http://www.lengyelpiroska.hu/elkonyv.html>) has been developed and used for the purposes of college and university education for the last three semesters. Despite the relatively short time elapsed, the number of visits exceeded 19 000. The overwhelming part of users is students of Zsigmond Király Főiskola (King Zsigmond College) in Budapest. The acknowledgments received from students/users have been proving the successes of the above presented four level interactive learning curriculum and distance learning method, which combines the state-of-the-art online teaching with the most valuable characters of the traditional education.

SOFTBOTS IN E-LEARNING – BY YVETTE PÁLINKÁS

The software robots can be any kind of programs which replace human activities. Repetitive tasks can be solved by such speed which can't be done by humans. The word robot or bot has a bit wider meaning on the internet. It means mostly a program which is looking for any information on the Web.

I would like to highlight a few examples for software robots which can be used in higher education.

- Searching robots – such as Google, Bing and Yahoo – can traverse the Web automatically to build a big searchable database. Already they are indispensable for network-generation in learning.
- Translator robots – such as Google Translate, Morphologic or Babylon – can translate web pages, mails or any texts. They are able to learn, if once they get an advice so that they can make better translation next time.
- Speech to text and text to speech robots for deaf or lightless students.
- Simulators for training in dangerous or expensive situations.
- Plagiarism-checking robots can compare texts and find the similarities between homework and coursebook.
- Chatting or talking robots with artificial intelligence for tutoring students 7 day a week and 24 hours a day.

e-Learning is the most democratic learning method of the world but there is a problem between the tutor and the students. e-Students need permanent consultations but tutor has limited working time for it. This is much bigger problem if they live in different time-zones. It can happen often in any e-Learning practice.

The robots used by e-Learning systems contain unique object program and this is the most modern type of education. The use of multimedia school-work, even teaching and the virtual lessons are managed by an interactive talking software robot aided by artificial intelligence. The knowledge base of the robot of course can be expanded by any topic. In multilevel test systems the bot can provide time limited assessment, control and communication.

- There is a virtual university in Hagen, Germany [15]. The system contains all functions of the university, including the curriculum and the administration, moreover a user-friendly and effective communication environment such as peer learning or group work, video conference, billboard and usage of the library.
- The Carnegie Learning program⁹ which was realized in the Carnegie Mellon University was made to help students in learning mathematics. The system is aided by artificial intelligence and help pupils to solve their personal problems and give instructions to solve their tasks. The system is able to notice if there is any difficulty and help if it is needed. This system is used in more than 1700 high school in mathematics education at the USA.
- Claude Frasson¹⁰ and his firm called uMind¹¹ integrated artificial intelligence in computer aided education system. uMind has already designed courses for such

⁹ <http://online.carnegielearning.com/>

¹⁰ <http://www.umindsoft.com/En/About/Frasson.html>

¹¹ <http://www.umindsoft.com/>

organizations as the Department of National Defence and the Montreal Transit Corporation.

- An experimental robot assistant Nela¹² helps students of subject “R&D in Military Technology” in ZMNDU [16].



5. figure. Robot assistant Nela¹³

Of course there are lots of other systems aided by artificial intelligence to help education so that we can write about this topic only without the claim to entirety. The virtual tutors have very important role in the future of education because they are independent from human activity, residence and time. They are very effective in education, learning, controlling and rating, too.

The intelligent tutoring systems are any kind of computer systems that can provide directly customized instructions or feedback to students, without any intervention of human beings, If the system can be available across internet in that case the system will be reachable apart from residence and time.ü

¹² <http://www.drseres.com/shahin/>

¹³ <http://www.drseres.com/shahin/index0.htm>

CONCLUSION

If you read all of chapter, you can ask: what is the research topic of authors? There are five different research profiles.

No, there is one topic only – it is the e-Learning.

We can flash this statement with a story:

‘Four lightless people met with an elephant in Zoo Park. They research it with their ear and hand, then they ask caretaker: “A what kind of animal is it?”

Caretaker said: “It is an elephant.”

In the evening they tell their friends: “We were in the Zoo where we met an elephant.”

Friends ask: “And what kind of animal is elephant?”

First answer: “Elephant is like that than a ship’s horn” – he heard only the elephant.

Second answer: “Elephant is like that than a garden hose” – he felt elephant’s trunk all over.

Third answer: “Elephant is like that than a hawser” – he got his share of the tail of the elephant.

Fourth answer: “Elephant is like that than a column of the church” – said who felt elephant’s foot.’

Story of our researches is like this. We all met e-Learning in the world of education.

One of us sees it so, that e-Learning is the best method of the life-wide learning lifelong.

Other one thinks so, that e-Learning can be more effective, if it is life-tailored.

A member of our Club observes accelerated progress of technological environment of the e-Learning in the last century.

Experience is the key of success of e-Learning process, by one of our researchers.

Software robots can provide an efficient support for learners and teachers in monotonous, expensive and dangerous e-Learning tasks – in opinion of our other colleague.

As a summary we can see that all of members of the SysAdminLess Club research different sides of the same topic – different aspects of the e-Learning.

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