

e-Learning from the point of view of methodology (Case study and conclusions on using Life-Tailored Learning in higher education)

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Life-Tailored Learning is a learning technology developed for cases, where the exclusive aim of learning is to reach the adult learner's own, measurable goals. Based on some simple axioms, this methodology we can get to important consequences on the proper training material, the learning process and courses. Authors analyze the educators' training at the Zrinyi Miklós National Defence University in 2007 and other courses on this topic. Widening use of equipment and the technical "cloud" opened the door to the new world of "Cloud Learning": the new possibilities can make the methodology of Life-Tailored Learning even more effective.

Introduction

Just one and a half decades ago sending worksheets and educator's instructions as postal matters was the current action in distance learning (ZRINSZKY, 1995, p. 173) – now e-learning has a huge amount of professional publications. Bookshops are full with materials for self-supported learning, and one can find a great number of training materials, training packages on the computer screen as well.

Methods and protocols for education material development, sample materials and even standards are available. Development process of tools is almost impossible to follow: inclusive hardware and software tools as well. But we can find a gap between the level of tools and their use: "the e-learning toolkit has foregone the knowledge and culture of (pedagogical, andragogical optimal) use by many years. At the same time the opposite situation can also occur (however not so often): when methodology is ahead of the toolkit that should serve it" (GERŐ, 2010).

This study is based on the educators' training at the Zrinyi Miklós National Defence University (ZMNDU) in 2007. Change of possibilities and perspectives (and therefore: methods) of e-learning will be shown by this case.

Received: September 20, 2010

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Antecedents

There have been e-learning experiments running at ZMNDU for many years (e.g. KENDE-SERES, 2005), and there is an e-learning course on “Basic Knowledge on National Defense” as well: this course can be attended by students of different universities: the course had 3,385 students in the last four years (VÖRÖS, 2009).

Pioneers were: some enthusiastic colleagues. But later growing use made necessary other lecturers to catch on to systematic e-learning development and utilization.

System of career courses made e-learning even more actual. This course had to be able to achieve also for officers on duties abroad (KENDE ET AL., 2010). It became urgent that course has to be performed flexibly, without being present.

This was the situation when (in 2007) the postgraduate course “Life-Tailored Learning” was realized for the lecturers of the Zrínyi Miklós National Defence University.

Training need

Speaking about e-learning, most of people are thinking of the “science” of tool using skills.¹ ZMNDU has recognized that using tools: that is nothing else but supporting the learning goal. Hence ZMNDU has established a “Center for Adult Training and Distance Learning”: this is a coordinating and service team supporting learning material development and learning-teaching process by an organizing, IT, multimedia etc. background.

Consequently there was no need of a course on tool using skills; rather a course, how the educator can increase efficiency by the help of the available tools – including the most “soft” tool: methodology as well.

So whole entirety of the process had to be reviewed: fixing the learning goals, creating training materials etc. until finishing the learning process successfully.

Why just Life-Tailored Learning?

One of the most excellent comprehensive works of the methodological literature (FINGER, 1989) reviews the main starting points, views and paradigms of adult-training theory and also reveals their roots. It is especially interesting, that (while the statement, children are not small adults, was a huge paradigm shift in pedagogy in its time that cannot be overestimated) now the author finds it necessary to declare: “adults are not evolved children”.

¹ Even courses for would-be multimedia developers are on using (hardware and software) tools.

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 each other'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 learner's 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 (in accordance with József Nagy, 2000) 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 "axioms" of Life-Tailored Learning

Fundamentally, the methodology is based on four working hypotheses:ⁱⁱ these together form the initial approach, values and "axioms" of the methodology.

- I. Learning is the student's activity.
- II. A mentally sound person can learn anything.
- III. The students' circumstances (opportunities, limits) can be different and can change during the learning process.
- IV. During the learning process balks, halts and dead-locks are unavoidable.

ⁱⁱ Instead of engaging in a debate about the valid circles of the learning-teaching processes of the four working hypotheses, we rather say: Life-Tailored Learning is the methodology that applies to cases that can be characterized with these four working hypotheses.

The consequences in approach of the working hypotheses

If a mentally sound person's learning ability is unlimited, then learning, by its nature, is successful (MAGYAR, 2002).

If balks, halts and dead-locks are unavoidable during the learning process, we have to prepare to overcome them and not to avoid them.

If learning is the student's activity, then teaching is the creation of the learning circumstances: from preparing the practical learning contents and learning environment to the assistance during the learning action.

The consequences concerning the learning process

If the exclusive aim of learning is reaching the learner's own, measurable learning goals then consequently the learning aim cannot be given up – unless the student himself/herself decides so – and everything else should be subordinated to that.

If the learner has his/her own learning aim then it means that he/she is motivated to reach that. In this case the aim is the conscious equivalent of the emotion that is a part of the motivation (NAGY, 1998). This motivation provokes a motivation that is related to the acquisition of the content of learning. If balks are unavoidable (so we have to prepare to overcome them, and not to avoid them), then (statistically) it is also unavoidable that this motivation comes to a standstill during the learning process. If everything must be subordinated to the learning aim then the (acquisition) motivation, related to the learning aim has to be maintained and if it is necessary reanimated during the whole learning process.

If it is possible to measure the student's imperfections in the ability to achieve the learning aims from the beginning of the learning process, and in its different stages, then it can be exactly specified what further learning contents the learner has to acquire. (This is called by the methodology "specialized material".)

If the specialized material can be specified precisely (what further learning contents has to be acquired to reach the learning aim), and if during the learning process the (acquisition) motivation related to the learning aim must be maintained and if it is necessary reanimated, then the learner has to get prepared learning contents and help during the learning process, in learning conditions, that maintains and if it is necessary reanimates the (acquisition) motivation related to the learning aim. (The prepared learning content is called by the methodology "teaching material".)

If learning is the student's activity, and teaching is the creation of the learning environment (from preparing the practical learning contents and learning circumstances

to the assistance during the learning action), then the only and irreplaceable function of keeping direct contact (for example: face-to-face or real-time virtual training, consultation) is providing immediate and personalized direct and indirect feedback.

In the methodology of Life-Tailored Learning the content and the method of learning are separated: the same content (specialized material) may appear in diverse curricula, and the learning process can be placed in diverse environment, supported by diverse support. The specialized material is deductible from the learning aim and the learner's given 'state'. In the point of the curriculum, learning environment and assistance the previously mentioned statement gives us direction. The learning aim cannot be given up, unless the student decides so. Everything else should be subordinated to this. Methods, locations and means may be chosen freely within the confines of the above mentioned. Independent learning (supported by diverse means) may also be chosen: in this case the learning process can be accomplished similarly except the personalized direct and indirect feedback.

The same specialized material may be realized in diverse teaching materials. The same teaching material may be utilized in different locations, with different means and learning methods.

If changes may occur in the student's situation (opportunities, limits) during the learning process, then the possibility to change the means and modes of the learning process should be assured. Assuming that the aim of the learning is fixed: it means that during the acquisition of the learning-content represented by the specialized material a possibility to change between the diverse methods, locations and devices should be assured.

According to this in the learning process there should be stages where the learner can change material, method, location and device.

It is advisable to have as many of these stages as possible.

Learning between these stages is also learning. It is only manageable with the methodology of Life-Tailored Learning if the above mentioned statements all apply: the student's competency-expansion oriented learning aim etc.

The level-change can only be placed, where

- the phase between the beginning of learning and the first turning point
- the phase between the end of learning and the last turning point and
- the phase between any two neighbor turning points can be characterized by the learner's own, measurable learning aim.

If it is advisable to have as many of these stages as possible then it is practical to divide the learning process into small phases that are in accordance with the above mentioned.

These phases are called “modules” by the methodology.ⁱⁱⁱ

The lessons (just as the whole learning process) can be determined with the help of the initial and the desired (input and output) competencies.

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.

It is evident: the courses on the methodology should follow these principles. On the one hand the participants get a pleasant experience about the methodology from the

ⁱⁱⁱ We arrived to the point where it is crucial to make some terminological remarks. First of all considering that the word ‘module’ occurs in diverse texts, for example in law, with different meanings we rather use the word ‘lesson’ that fits better into the conventional terminology of the learning process. As for the rest of the article: if the reader who is aware of the British “open and flexible learning” ideology feels that this structure is familiar, it is not by chance. Life-Tailored Learning is as a matter of fact the modernized, and quality-assured, improved version of the “open and flexible learning”. The originator of the methodology acquired the fundamentals in the Budapest Education Technology Center (FOK) in Budapest, in the trainings and educational trips supported by the British Know How Fund in the beginning of the 1990s. Since then the set of methods and procedures have developed into a consistent methodology due to the work of Péter Geró. The originator, in the diverse developmental states of the methodology, has taught it several times as a subject in higher education for would-be pedagogues, androgogues, cultural organizers and as a postgraduate course for pedagogues and distant-learning tutors. In the beginning it was only a method to frame theoretical considerations. By now it has become available in the Moodle system, with Google questionnaire, HotPotatoes and Quandary based (self)controlling possibilities.

students' position, on the other hand if we suggest that it is the methodology for efficient and effective adult training why should we use anything else?

The participants

The participants of the course were the tutors (and other colleagues who were directly connected with education) of the Zrínyi Miklós National Defence University (ZMNDU).

In the ZMNDU (as in general in higher education) the majority of teachers are excellent professionals, who obtained their teaching experience from practice. Hardly quarter of the participants of the course in question started their career with the acquisition of pedagogical qualification; the ones who did were language teachers at the university.

It can be generally said that they were professionals, some of them had 'conventional' pedagogical training and qualification, but the majority were very good in their profession and they learned the teacher's role as years passed.

The structure of the course

The course consists of some attendance and some independent learning phases. The attendance phases were meant to have approach forming effects. During the self-learning phases the participants acquired the practical knowledge by working out a chosen lesson.

The course lasted two semesters, with 6–6 attendance classes and 5–5 self-learning phases between them, during which the participants kept contact with the tutor of the course with the help of the Internet.

The topics of the attendance classes were the following:

class 0: The participants received a letter and a questionnaire from the tutor. The latter mentioned, among many other things, enquired about their learning aim.

semester 1 (spring, 2007.)

- basic notions (learning aim, competency)
- evaluation of the learner (final and entrance assessments, tests)
- the specialized material (the rules of specialized material creation)
- media, multimedia, interactivity (nature of the learning material)
- creation of a digital material (developmental frameworks)
- criteria of the adequate learning material (summarizing class)
- semester 2 (autumn, 2007.)
- learner in Life-Tailored Learning (motivational models)

- supporting roles (teacher, consultant, tutor, mentor)
- the organizational background of learning (touching upon the topic of trainings for the labor market)
- virtual education systems (their effect on the organization)
- learning strategies (applying multimedia in practice)
- summarizing, evaluation

The courses had to be adjusted to the participants' and also the invited lecturers' schedule. It represented clearly one of the working hypothesis of Life-Tailored Learning: changes may occur during the process...

As a result of this the order of classes has occasionally changed, but all topics were mentioned and the participants had the chance to go through all the steps of forming the teaching material.

What explains an overview of a course that took place 3 years ago?

A university course book on the methodology was published in 2008 by the ZMNDU (GERŐ, 2008), and a distance learning station was also established the same year: this includes a teacher's whole workplace with a projector and all the necessary equipments; on the other hand the student can also use it in his lap (the student version does not necessarily include a projector). Besides the student the syllabus and education organizer, the manager of the educational institution or any other participant of the learning process can use it in different selections and situations; the authorization related to the names registered forms an entirely safe access system. A single learning station can become the central computer of the training, this means that all conditions of a flexible, independent learning process are available with a local network without the necessity of the Internet.

Here we need to add some information about the technological background: the course used the Moodle education organizer system (LMS) and this was applied to a Lenovo notebook as the distance learning station as well along with an Ubuntu operation system (with Gnome desktop environment), a Vodafone modem and some additional software responsible for the user functions, all of which were free software (e.g. OpenOffice.org integrated office package).

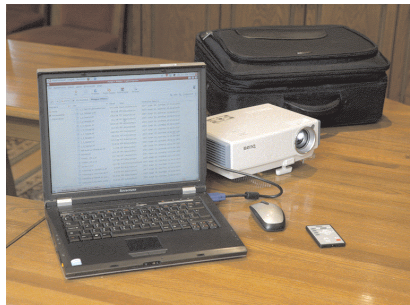
Back then the whole package was placed in a rolling suitcase, arranged in a way that the simple learning functions would be available – on journeys for example – by opening the smaller part of the suitcase (Fig. 1, photos from the reviewer brochure on the course book (GERŐ, 2008)).



(a)



(b)



(c)

Figure 1. (a) The closed suitcase is ready to be carried; (b) the upper compartment includes the notebook, a network modem stick, earphones, a microphone and a lamp with USB connection; (c) in the lower compartment we can find the projector, the remote control, the cables, the wireless mouse and the keyboard

Thus, not long ago it was a smaller suitcase (it also included a separate model with instructions about the cabling of the different parts). Nowadays the same system would fit into a comfortable briefcase with a light notebook computer (or possibly a net-book or touchscreen iPad) with a built-in modem, a USB connected LED projector and printer – probably for half the price of the previous model.

And what is priceless: today helping software and the “computer cloud surrounding them” offer very different possibilities than the software two years ago.

Therefore, the present study could easily have the following subtitle:

How could the same course be conducted today?

Considering not only technological development, but also methodology there are two options to think over. The first thing that occurs to us is how we can overcome, or at least lighten the technological barriers. We can also start on the other side: what would be the ideal condition and how can we approach it today. The latter one is the more difficult question to answer – however, it is worth bringing it up once in a while.

If we think in terms of the previously described axioms, the main question is how adult learning can become an as energetic, unstoppable, result-oriented and unequivocal activity as the way everybody learns how to talk or walk, (even those people can learn these skills who do not have the ability to do so, by compensating for the lack of some skills with the better acquisition of some others).^{iv} We are aware of the way a special educator-personality can create this situation and we could experience it in the lucky periods of our learning process. But have we reached the point where we can successfully accomplish this on a mass level?

We only get to answer this question towards the end of this study, till then we need to climb over a pile of additional information. Among the top 100 web pages 21 can be included in the device system of learning and teaching: 6 community pages (Social networks) (e.g. Facebook); 6 reference pages (e.g. Wikipedia); 2 picture-sharing pages (e.g. Picasa); 1 sound-sharing page (Skype); 3 video-sharing pages (e.g. Youtube); 3 blogs (e.g. Blogger). Moreover, out of the top 100 Megaupload file-sharing, and searching and relationship-counting pages (Google, MSN, Windows Live, Bing) can count as the background of the learning/teaching process too. (BBC, 2010) Apart from

^{iv} This study is unable to answer the question how this condition disappears at the beginning of school years. Instead, we would recommend a reference study: GERŐ PÉTER: Hová bújt az elsajátítási motiváltság? – study book of the first Education-IT Conference, Eötvös Loránd University, ELTE Eötvös Publisher, 2009, p. 24 (abstract); pp. 112–115 (whole lecture)

the top 100 there are thousands of other pages even more connected to learning: a good example for this is the Moodle Learning Management System mentioned above.

Typical elements of the device system

The authors of this study, who both experienced the first school television experiments (one of them even learned with the help of the school radio introduced because of war bombings) admit that they are touched by the new miracles of technology. In the following we intend to evaluate the possibilities that are available nowadays based on our experience in the spirit of the statement in the introduction of our study (GERŐ, 2010) and create a highly selected list.

In the following we present an overview of the learning/teaching-related pages we've tried out with links to the test pages of the authors, a short summary of the pages suggested in each category, and the Moodle pages of the team which gathered around the topic entitled "Rendszergazdátlanok klubja" (Club of SysAdminLess users).

Storage and share of documents

Storage and share of the most often-used curricula – documents – can be by a lot of service provider on the internet.

Most widespread are Google Docs^v and two hosting of Microsoft – the Windows Live Sky Drive,^{vi} and the Office Live.^{vii}

First one is able for individual and shared editing online and chat among editors.

Documents can be common edited and shared on the Microsoft hosting too, but offline with MS Office applications of editors only.

Storage and share of pictures and videos

Storage and share of audio-visual curricula – pictures and videos – is the oldest service of Cloud Computing after search providers.

Most popular ones are Picasa^{viii} and Youtube,^{ix} but Vimeo^x and Flickr^{xi} portals are used by a lot of users too.

^v <http://docs.drseres.com/>

^{vi} <https://cid-0009fa821aa3c4fa.groups.skydrive.live.com/browse.aspx/Documents>

^{vii} [http://workspace.office.live.com/#drseres/Workspace 1](http://workspace.office.live.com/#drseres/Workspace%201)

^{viii} <http://picasaweb.google.com/drseres00>

^{ix} <http://youtube.com/user/etanar1>

^x <http://vimeo.com/drseres/>

Storage and share of presentations

Presentations are the most used tools in all forms and level of education and knowledge management.

That's why a lot of service providers are specialized to storage and share of presentations.

By our experiences the authorSTREAM^{xii} portal warrants the most authentic able show of presentations like PowerPoint, but Slideshare^{xiii} and Scribd^{xiv} portals are popular in this service of Cloud Computing too.

Novel, interesting and scenic presentations can be created and stored online by a new portal Prezi^{xv} – which is bring into being by Hungarian developer.

Virtual classroom

Providers of storage presentations Google Docs^{xvi} and authorSTREAM^{xvii} 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^{xviii} and DimDim^{xix} 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^{xx} permit of broadcasting a lecture from our webcam.

The Ustream Producer mixing panel software allows varying multimedia materials in the course of broadcast.

Contact among lecturer and viewers can be parallel chat-room like Google Docs and authorSTREAM presentations.

^{xi} <http://www.flickr.com/photos/drseres/>

^{xii} <http://www.authorstream.com/tag/drseres>

^{xiii} <http://www.slideshare.net/drseres>

^{xiv} <http://www.scribd.com/drseres>

^{xv} http://prezi.com/ggotqqw6w5d_/

^{xvi} http://docs.google.com/a/drseres.com/present/view?id=dgdg6bm9_669fw43zwhb&invite=906859995

^{xvii} http://www.authorstream.com/presentlive/291884_633964445461711250

^{xviii} <http://www.wiziq.com/drseres>

^{xix} <http://my.dimdim.com/drseres>

^{xx} <http://www.ustream.tv/channel/drseres>

Blog

The most trendy service of Cloud Computing, blogging, can be used in education process too.

Teachers and students can keep a text or multimedia diary – blog – about their ideas, observation from curriculum, lectures, fellow students and teachers.

Posts on the most popular blog providers Blogger^{xxi} and Wordpress^{xxii} are text with pictures and links mostly.

The tumblr^{xxiii} portal is usable for embedding miscellaneous blog posts – text, picture and video.

Service of the Wallwisher^{xxiv} portal can be used as a bulletin board of a class, because its editing is very simple.

More of Learning Management Systems – like Moodle^{xxv} or Ilias – provides blogging for its users.

Social networking

Social contacts confirmed by community portals in Cloud Computing can be very useful for network based education.

The most widespread community portal twitter,^{xxvi} which is able to share short SMS-like text messages – chirping.

Facebook^{xxvii} and Hungarian iWiW^{xxviii} portal serve search of friends and keep of contacts among them.

LinkedIn^{xxix} portal advance make and keep of professional contacts in different trade activity.

Learning Management System

Learning Management Systems provide complex tools of e-learning in the world of Cloud Learning.

^{xxi} <http://drseres.blogspot.com/>

^{xxii} <http://drseres.wordpress.com/>

^{xxiii} <http://etanar.tumblr.com/>

^{xxiv} <http://www.wallwisher.com/wall/drseres>

^{xxv} <http://www.miskolczi.net/moodle/blog/index.php?filtertype=site&>

^{xxvi} <http://twitter.com/drseres>

^{xxvii} <http://facebook.com/drseres>

^{xxviii} <http://iwiw.hu/pages/user/userdata.jsp?userID=14773705>

^{xxix} <http://www.linkedin.com/in/drseres>

There are some free softwares 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.

Test, self test

More of provider of Cloud Learning offers tools for creating tests and self test.

Online questionnaires can be created with Google Docs,^{xxx} which are appreciable in common table after submitting.

More of virtual classroom services and LMS contain a lot of testing tools^{xxxi} too.

Effective, interesting and scenic tests can be created with special software – like free Hot Potatoes^{xxxii} and Quandary.^{xxxiii}

SysAdminLess 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 ZMNDU in 2007.

Because the 10 years old homepage was unable for interactive distance learning, a new Drupal engine based Web 2 portal has been created – named E-TEACHER.

A distance course has been called on the new portal.

The new portal has been discovered by great searching providers without any advertisement, and they refer many quests to the portal from all world.

Many people begun the course – and some of them performed it.

A six person’s team came into being as a result of outcome of the course – SysAdminLess Club.^{xxxiv}

We meet weekly in the Cloud.

A lot of individual and common publications, lectures at scientific conferences, applications and awards and four individual Moodle portals were born as a result our meetings.

Three members of Club are PhD students in doctoral school.

And we learn much from one another.

^{xxx} <http://spreadsheets.google.com/a/drseres.com/viewform?key=0Akgnf94P4BXVcEVpbDRSN1hRWEV5Y1ZPcXBvVVRpTUE&hl=hu>

^{xxxi} <http://www.geropeter.hu/moodle/mod/quiz/view.php?id=228>

^{xxxii} <http://drseres.com/elearning/tesztek/hotpot/index.htm>

^{xxxiii} <http://drseres.com/elearning/tesztek/quandary/index.htm>

^{xxxiv} <http://drseres.com/elearning>

The methods and culture of the use of devices

To sum up our knowledge about different devices we can conclude that devices of communication, feedback, control and self-control are available and are also able to transmit emotional effects via media elements. The operation of these devices is simple enough to be used confidently by the syllabus developers, study helpers, and the student while it does not divert the attention from the learning process.

The improvement rate of the mass effectiveness of studying with the help and mediation of devices is lower than the rate of device development.

We can't deny that one of the obstacles lies in the method and culture of device using. This isn't about the fact that the devices listed require different operation methods, work habits and way of thinking from the syllabus developers, study helpers and students, not only about the fact that these operations, habits and way of thinking differ from the way the listed participants were socialized in all their "previous" lives; rather we need to see in practice that it is not hard to outwit the rules of the device-based learning/teaching.

Presentation-sharing and video-sharing motivates the teachers to transmit their own lectures the same way. The effect on the other hand is very different: those who have seen the same film at home on television and in a multiplex cinema, have heard the same symphony on an mp3 player and in a concert hall do not need to be convinced. The transmitter can offer a number of additional options: repetition, ramification options, and links pointing out supplements. Nevertheless, numerous lectures (even university lectures) are made with the help of file-sharing pages and there are some, which give you even less, in fact, some only offer a handbook we can read on the screen.

It has evident signs in group sessions if the leader of the session is actually present or is only projected: perhaps it's enough to point out that the student in the latter case knows precisely whether he gets into the visual angle of the web camera and the range of the microphone or not and these facts can alter his behavior...

According to the authors these and other similar phenomena derive from a specific characteristic of our device using culture that is clearly shown in one of our rather unpleasant experiences.

In our teaching practices (and to be honest, also on the weekly virtual meetings of the group mentioned above) we experienced that communication through devices mostly or entirely lacks "prelude". The participant of a conference call turns on the Skype and waits for the call – in the meantime he/she reads his/her emails or hangs out the clothes to dry. (In a fortunate case he stops these activities during the time of the call but his/her phone starts ringing, we can hear the TV, grandmother or the dog in the

background.) As it is seen on the Skype or WiZiQ screen he/she sits down to the computer “the way he is” and he/she quickly starts searching for his/her documents and pens if necessary. Moreover, it is almost impossible to start in time. If a course begins at 10 o'clock nobody considers leaving home at 10, whereas the majority of the participants of an announced virtual meeting only turn on their computers at 10. ..then they find their notebooks, where they wrote the new password...then they convivial greet the others...

There are serious troubles behind the ironic voice: a participant reached by devices enters the learning process in another way and with a different attitude than participants of the 'normal', presence-based course. (It's important to add that unlike in case of the normal courses where teachers have their own experience and qualification they don't have settled methods and routine in handling disruption during a device-based course.)

However not only does attitude influence acceptance, but also perception. If a student who got used to traditional teaching methods expects something different and has a different attitude the signal that could touch him and could become a defining element in his learning process may not even reach him.

Thus, it seems that the services of devices have developed so much they can't be arranged lucidly anymore. While only our imagination and effort may be an obstacle in terms of their possible uses; while methodologies – although they tend to fall behind – are trying to follow the expansion of possibilities, the culture of their use makes it more and more difficult for the message to get to the receiver.

Conclusion

It does not surprise the reader familiar with the effect mechanism of pedagogy to find a 500-year-old quote by a “theatre expert” at the beginning of this study chapter: “When the actor reaches the highest level of art he does not dance anymore, but is made dance” (VEKERDY, 1974).

The period of learning/teaching where somebody transmits and another person receives the message, or more precisely the “studying material” is over. The important or seemingly important learning materials are available – even in bigger quantities than the amount students are able to take in. The learners (adults and students alike) get more communicative input day by day by walking in the city streets, than they get in a week of “institutional learning”; moreover, these messages reach them with suggestively formed in a much more professional way, than a language course, a mathematics class or the messages they receive on an accountancy workshop.

The student – since he is still a student – is not aware of how the system works, he is not able to see the places and roles of the newly acquired splinters of knowledge in the system.. He does not know which messages and materials he really needs and which are the ones he should ignore, therefore what he accepts or ignores is often accidental (and it often depends on carefully developed manipulating effects).

We who teach (therefore help learning) however are well aware of what different activities and fields are required and why; obviously we are also convinced about the necessity of these methods, otherwise we wouldn't have chosen that particular field as the object of our studies.

This is what we need to transmit: the feeling: “This is important!” and this stimulation: “You can do it!” We need to feel the importance, why that particular field and learning material is important for us. We also need to feel the confidence; the way we never doubted that our child would learn to walk and talk while using his abilities up to the maximum; we never doubted him, not even when we were smiling on the mistakes he made or were frightened when he fell. If we are able to feel the significance of this these feelings – according to master Zeami's advice – will make us dance, we will find the behavior able to “cross the communication line”.

As a conclusion we have to raise the question, how the same course could be completed today (namely the ZMNDU's further training course for educators that took place two and a half years ago). We stepped a great deal further, on the courses held since then (for university students and teachers taking part in further training) a higher and higher proportion of the training has been held in a system enabling independent learning and there are more and more possibilities for on-line (self) assessment. Still, we can only answer the question the following way: the devices for more flexible and effective solutions are available; the time has come when human factors need to catch up with them. This is the narrow cross-section and the next big breakthrough of e-learning is expected soon.

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