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Change of Study, Training System, the Possibility of a Survey of Students XXI-st Century

Introduction

Compared to previous generations, the IT generation represents a completely different world. Today's youngsters grew up at a time when modern technology, informatics, and the on-line world reached adulthood. Living on-line became part of the personality of this group experiencing social relations both in the real and virtual world. These new digital natives are more daring, have a higher initiative and display more confidence in their abilities while not being taken aback by personal limitations.

Since they came of age with the digital era every day communication, experiencing and sharing the emotional and social aspects of their lives, creativity and playfulness via the Internet, mobile phone and other digital devices are almost automatic for them. Sound, picture and video recording by mobile phones, digital cameras, video, and web cameras provided new opportunities and functions for them as well.

Today's students growing up and functioning in a world dominated by the **homo informaticus**, the term used by Gábor Balogh to describe the typical human of the 21st century, face significant challenges. **What kind of methods and approaches should be used to help our students to fulfil the respective demands?**

Sound recordings, images, and videos prepared by mobile phones, digital cameras, and web cameras provided exciting new options. Digital technologies described by the term **web 2.0** are based on communities jointly producing new content and sharing information among the members. In a world where the digital competence and literacy of students is more sophisticated than that of the average adult or the given teacher, successfully reaching out to the student community becomes an issue of crucial importance. Apart from applying new educational methods and keeping pace with the latest developments the fulfilment of the abovementioned objectives requires the deployment of the **most modern ICT** and web **2.0** technologies.

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Within the framework of the research process we used an empirical survey test (questionnaire) to assess the learning habits of digital natives

The survey had three main objectives: exploring the criteria for effective teaching, the assessment of learning habits, and identifying the respective options for improving the effectiveness of learning from the point of view of students. The empirical research described in the present essay aimed to answer the following questions:

– The changes of student reading habits of electronic and traditional texts call for the production of new information sources and electronic educational materials. Which one would students prefer?
– What is the attitude of students to e-Texts, on-line materials, and electronic libraries?
– What is the impact of technological devices on the learning process and the respective methods?
– How did learning, instruction systems, and knowledge monitoring opportunities change?
– What is your view of on-line tests?
– What kind of new learning habits emerged as a result of new technologies?
– How do new technologies influence the role and instructional status of the teacher?

Sound recordings, images and videos prepared by mobile phones, digital cameras and web cameras provided exciting new options. Digital technologies generally described by the term web 2.0 are based on communities jointly producing new content and sharing information within the given community.

The objective of the survey: The exploration of the criteria for effective teaching, assessment of learning habits, and the identification of methods for the improvement of their effectiveness. The target group includes the instructors and students of MA and BA programs delivered both full time and part time at the Eszterházy Károly College. 128 instructors completed the on-line questionnaire out of which 106 answers can be processed, while out of the 268 student answers 258 can be used for testing.

As described below we wanted to find out whether the reading and learning habits of students and the use of the learning-support services differ according to age group, program enrolment, or type. Are technological innovations and options uniformly utilized or are there differences in use? We also focused on the i**nstructors'** habits of reading professional literature, that is, whether they read electronic or traditional texts on a daily basis.

The instructor answers revealed that 33% read traditional printed materials several times a week. The cross table analysis shows a result significance of $p = 0,000 < 0,050$; $\chi^2 = 115,106$ for 14,2% of the sample made up by associate professors. We can presume that 25,5% of instructors rely on electronic sources to learn about the latest research results. Data related to the frequency of study-

ing professional texts in electronic form with several times a week (37,4%), on a daily basis (25,5%) and monthly (21,7%) are even and prevalent. Only 3,74% marked „never", thus the demand for electronic surfaces is significant.

As far as students are concerned 40,7% study professional texts in a traditional form as compared to 30,2% preferring the electronic version Having compared the graphs below we can conclude that 21,6% of students study electronic professional texts many times a week, but 17,2% never study professional materials in analogue format.

Regarding the reading habits of instructors we found that professional texts are studied in a traditional format many times a week, especially in case of associate professors with a rate of 14,8% and a result significance of $\chi2 = 116,106$; p = 0,000.

Electronic professional texts (Chart 6) are read on a daily basis by 25,5% of the instructors with the following breakdown: college professor 6,6%, lecturer 5,7% while 27,4% turn to these information sources weekly and 10,4% of the given sample is made up by associate professors. The respective result significance was $\chi2 = 89,794$; p = 0,000.

We also found that 41% of students (Chart 7) use professional literature in traditional form on a monthly basis and the 18–23 age group is the most active in reading with 37,7%. The result significant is $\chi2 = 54,026$; p = 0,000.

31% of the students of the sample study electronic texts and 21,3% consult e-Learning materials more than once a week. The received values are closely significant: $\chi2 = 24,065$; p = 0,064.

During their higher education years students encounter several on-line surfaces promoting the effectiveness of learning. Instructors provide support by uploading essays, exercises, tests etc. The spider diagram below indicates the areas under examination:
– foreign language proficiency,
– more advanced ICT proficiency,
– familiarity with methodological competences,
– essays on the application of ICT devices,
– proficiency in pedagogical evaluation and assessment,
– proficiency in the use of available exercise database,
– automatic electronic evaluation of tests and exercises.

The spider diagram below provides a visual illustration of the high marks received in all categories as means of improving the efficiency of the teacher's pedagogical work.

The course materials placed on the Web led to revolutionary changes in learning since students are well-versed in handling the respective electronic surfaces.

In addition to the assessment or measuring of academic performance via on line tests, other parameters can be secured in electronic cyber space. Self-evaluation provides opportunity for the continuous monitoring of knowledge, the

testing of the effectiveness of learning styles and methods, attitude tests, socio-metric surveys, etc.
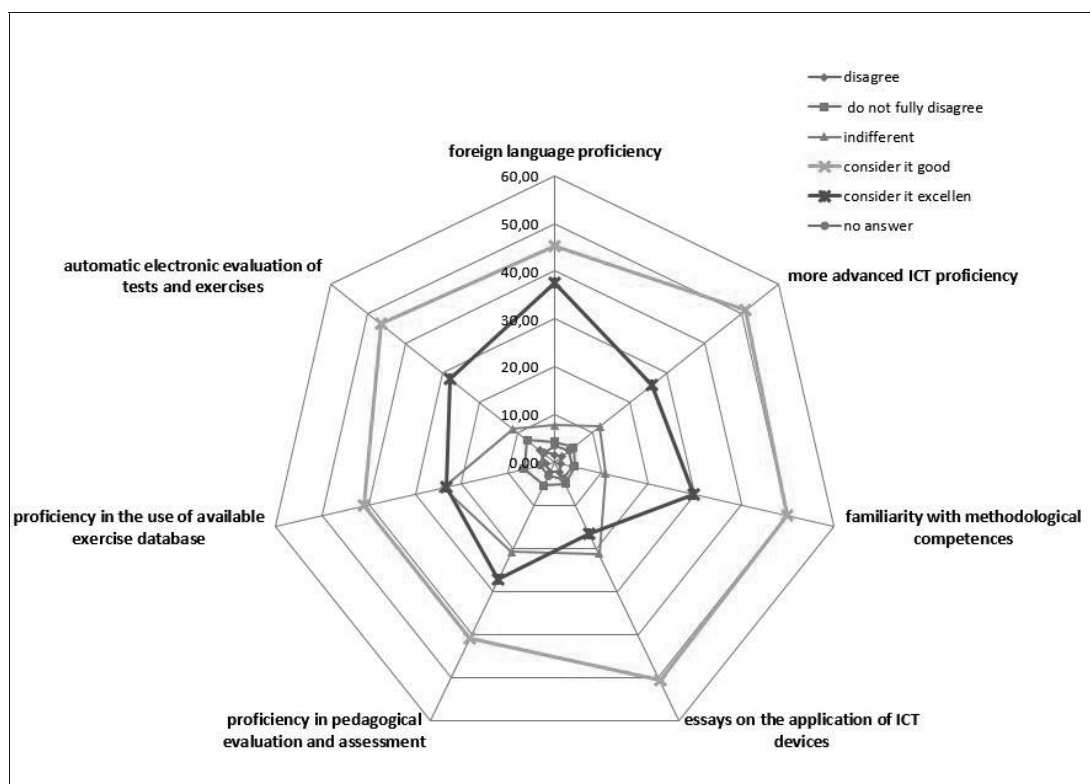

Fig. 1. Educational materials promoting the effectiveness of teaching

„Students acquire the respective material in a complex learning environment and solve the self-test and summarising test exercises. Learners are in direct connection with the simulation model thus they can become co-constructors or preliminary designers of experiments in addition to the registration and record-ing of input parameters and observation results". Consequently by additional interaction they can achieve excellent results in cooperative learning.

The effective application of on-line texts in instruction requires and takes advantage of the divergent thinking skills of students [Antal, Parázsó 2004: 106–111]. The ultimate goal is to enable the learner to break free from the control of algorithms and attempt to solve the given task on his own.

„The creativity of students implies an ability to re-arrange the acquired knowledge and relevant thoughts, in addition to searching for and elaborating new criteria and aspects" [Parázsó 2012: 37–38].

The survey summarises student views on the application of on-line texts ac-cording to the following aspects:

− Becoming familiar with and using on-line materials meant a new professional challenge for me;
− The accessibility to course materials and auxiliary texts is easier;

- On-line texts provide for the comprehensive professional orientation of students;
- The accessibility to course materials is unlimited;
- Instructors provide e-Texts to help my preparation;
- Course material accessibility is independent from classes and teacher availability;
- On-line texts allows the participants in the education process to solve the most specific problems freely from spatial and temporal restrictions;
- On-line texts contain the option of notifying teachers electronically in case of problems.

The answers provided by the students of the sample revealed widespread satisfaction with the abovementioned options that are naturally expected as well. The results are visually illustrated by the spider diagram below.
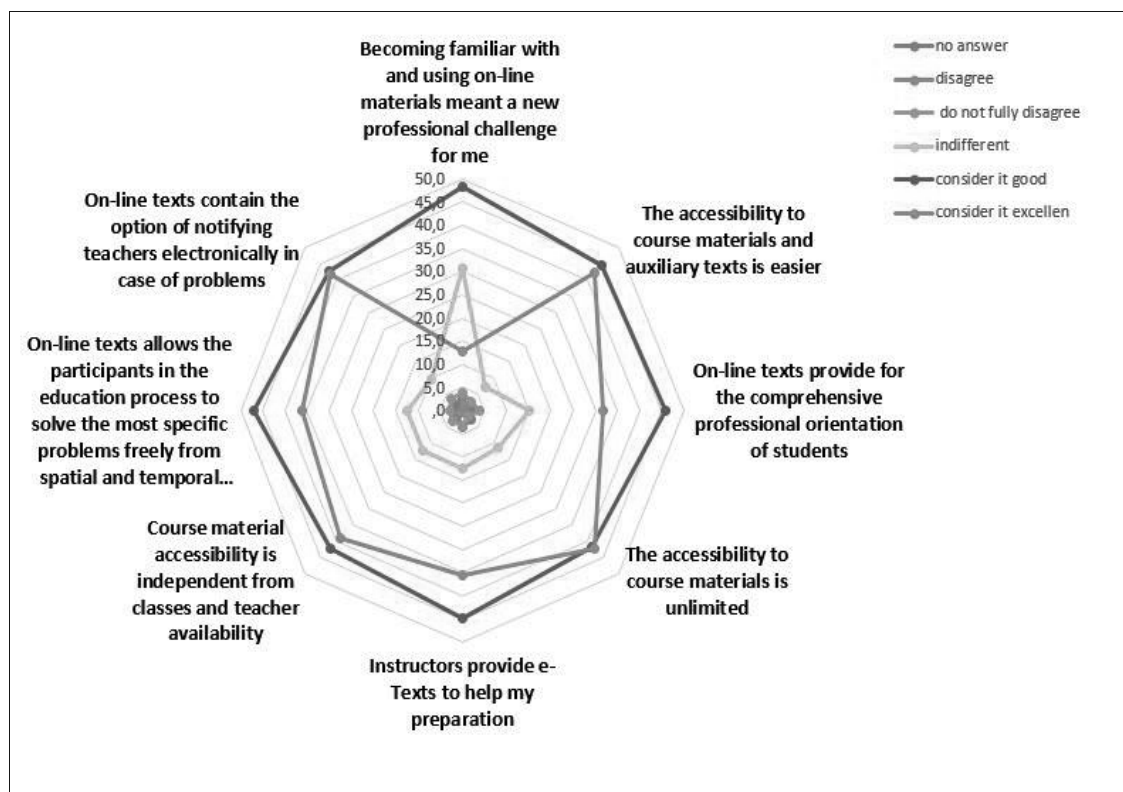

Fig. 2. Student views on the application of on-line materials

What conclusions can be made regarding the application of on-line texts if we contrast the two sets of opinions?

The professional preparation, attitude, and readiness for the given task are deemed excellent, and students are not only open to processing and working with the electronic materials, but, they demand them as well. The results are illustrated by the chart below:
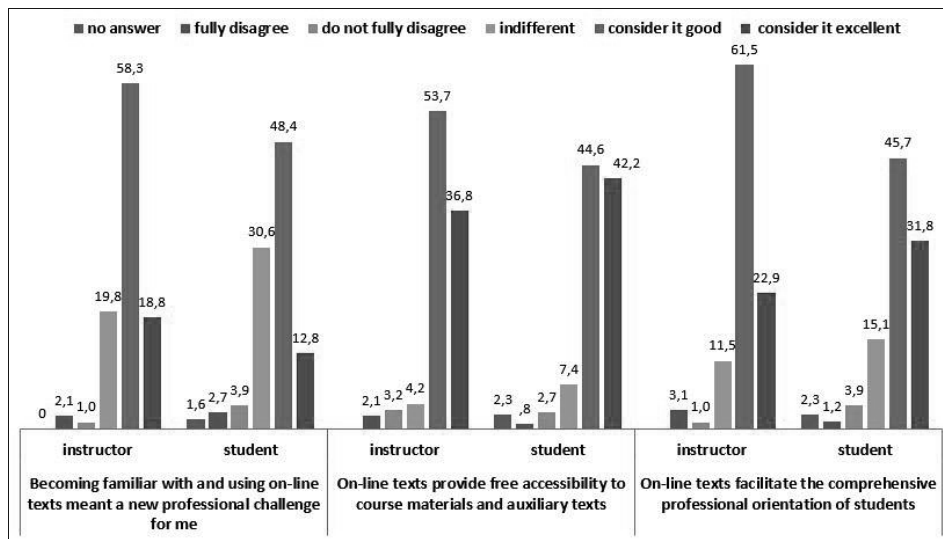
Fig. 3. Areas of application of on-line texts

Both students and instructors demand electronic materials and the chart below illustrates that the unlimited accessibility of the text and its role in student preparation further substantiates this need. In order to provide ready to use and up to date information and knowledge to students instructors have to make further developments.
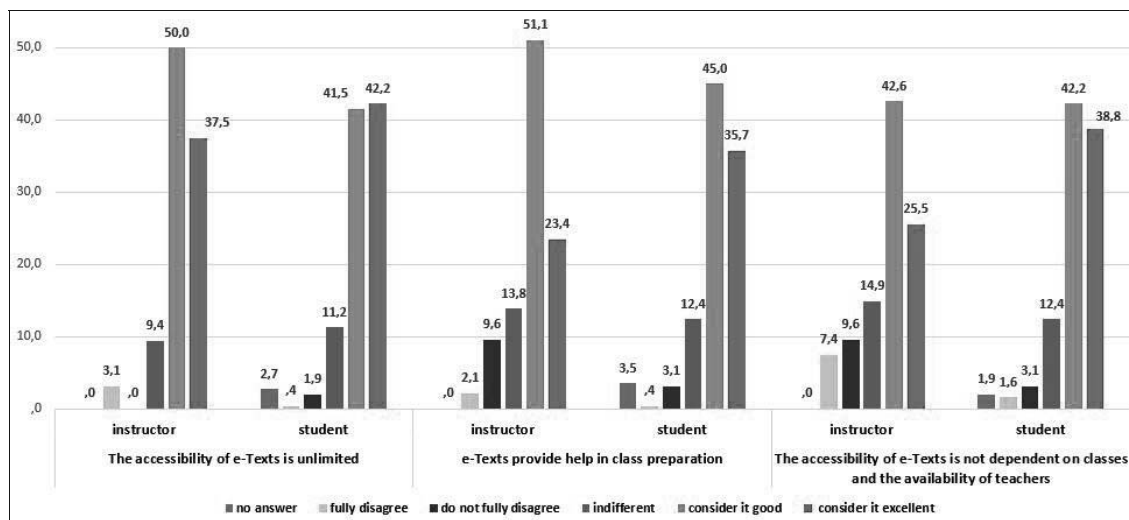

Fig. 4. The role of e-Texts in instruction

The processing of on-line texts implies that the teacher and student do not have to be in the same physical space. The student learns independently as he or she is continuously motivated by the program. e-Texts provide practice in solving tasks requiring proficiency and skills, and also facilitate self-test opportunities. In case of problems students can consult with the instructor via the direct and deferred response options provided by the instruction program [Kovács 2007].

The chart below proves that the continuous maintenance of connections and consultation options are important both for instructor and student. Students, impacted by the surrounding accelerated world, however express a greater need as their learning effort is coupled with the acquisition of practical experiences. The fulfilment of these multiple requirements is only possible by good time management.

The forthcoming chart summarizes instructor and student views on the problem solving options provided by on-line texts.
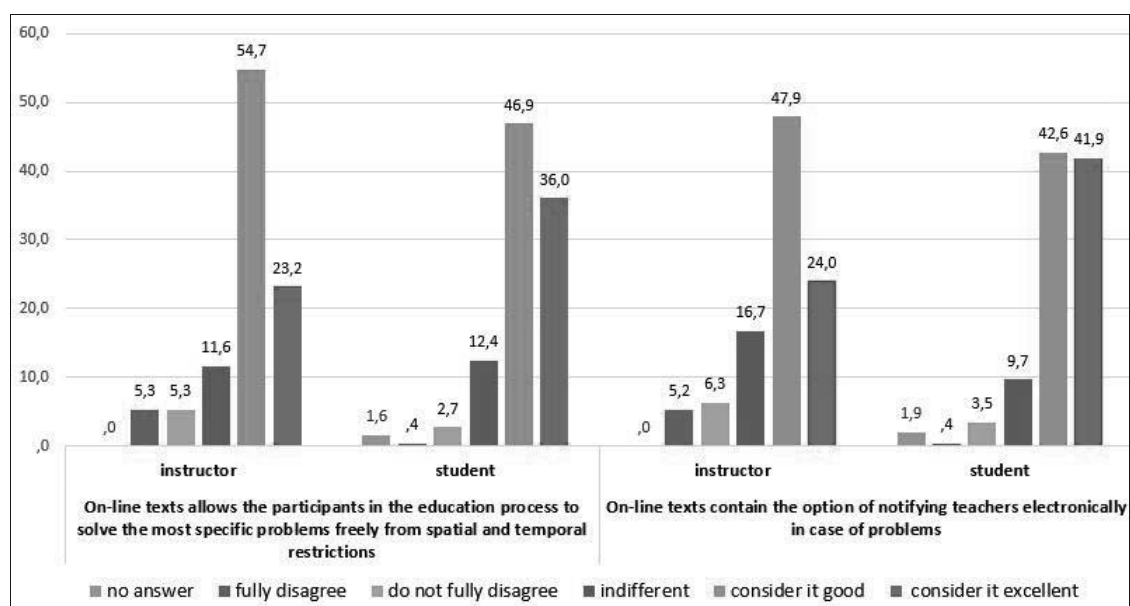

Fig. 5. The acquisition and practice of educational materials on an on-line basis

Students can acquire this skill if they can perform self-check functions in the various phases of the teaching and learning process. The most flexible method is the monitoring of knowledge on-line. In a digital evaluation environment one of the devices of knowledge assessment is testing. The preparation of test questions and the relevant point systems reflect the alternative units and the weighing options (the preparation of an assignment and task bank). The developed measurement unit has to be examined from the point of objectivity, reliability, and validity.

We have been involved in the exploration of on-line testing for several years with our partners [Parázsó 2004: 209–213]. The respective experiences, substantiating the particular theoretical base, underline that the given tests can be repeatedly checked by the student upon demand. This feature also allows the completion of missing or overlooked answers. While the time provided for completion is limited, the first version of test answers tends to be the correct one. This however, can raise questions concerning the impact of the complexity of the given task on the rate of the correct answers. The exploration of this issue, however, requires a separate research effort.

The improvement of institutional networks and the respective infrastructural developments provided new channels of information along with the option of participation on e-Conferences both for instructors and students. Based upon the obtained results both groups are open to the processing of educational materials, the searching for information, and the expression of opinion. The respective results are displayed on the chart below.
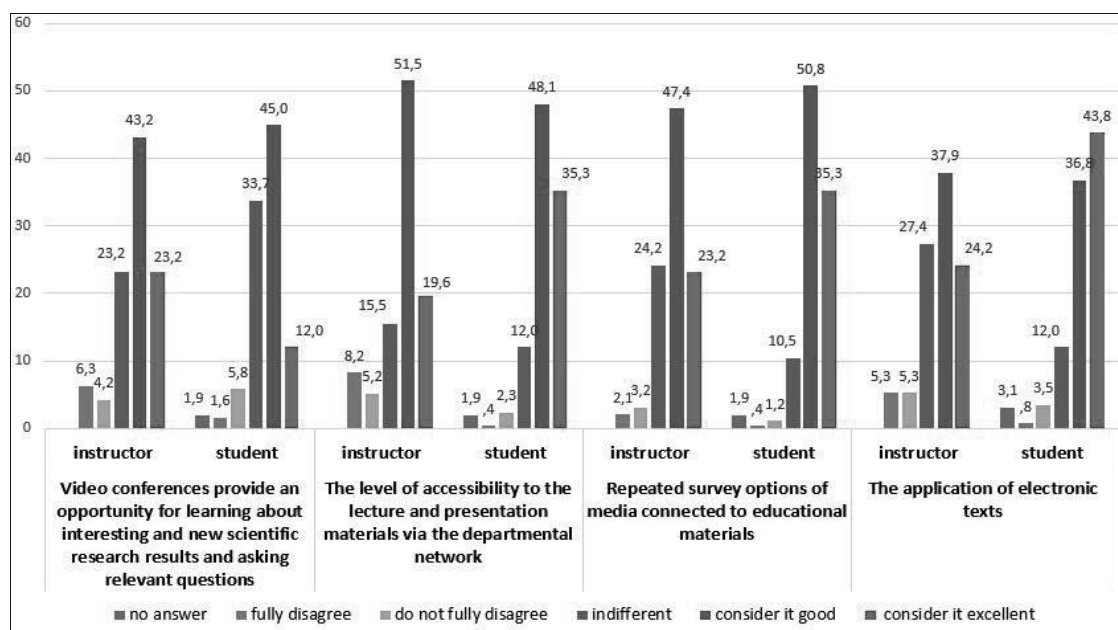

Fig. 6. The acquisition and practice of educational materials on an on-line basis

The development of educational materials must take student productivity and demands into consideration. The continual development leads to the expansion of learning areas and by extension, the effectiveness of the teaching-learning process. This is further substantiated by 21st century demands for the acquisition of new competences confronting both student and teacher.

Summary
- Traditional and future-oriented content should be presented in a complex manner.
- Teachers must consider possibilities of delivering traditional and future-oriented content in the language of the digital natives. The first means a broad sweeping conversion effort and methodology change, while the second implies *additional* new content and perspectives.

Experiences, conclusions

The conclusions related to the background of teaching are drawn from a research effort supported by the TÁMOP 422C project. The main objective of the survey is the exploration of the requirements of successful teaching, the assess-

ment of learning habits, and the testing of student views concerning efforts aimed at increasing the effectiveness of the learning process.

In the current educational climate where the digital competence of students far exceeds that of the average adult or teacher the most important issue is developing educational materials that can be processed and learned without significant difficulty. In addition to identifying the respective sources the latest ICT and web 2.0 solutions have to be used along with the modern educational methods.

− Student reading habits regarding both electronic and traditional volumes call for new sources of information and e-Texts.

− The survey revealed that students require both traditional and electronic texts.

− We also wanted to find out the reasons for the declining popularity of libraries and wished to identify services deemed attractive by students. It was confirmed that students continue to rely on libraries, but the traditional role of libraries has faded. Libraries are primarily seen as digital repositories of resources including scholarly articles both for students and instructors.

− The research program also explored student attitudes to e-Texts, on-line texts, and electronic libraries. Students require on-line or electronic materials whose compilation and provision is the responsibility of the instructor. The preparation of medialised or multimedia based e-Books or tests is still a challenge for most teachers.

− What is the impact of new technological devices on learning and its means? Today's educational leaders encourage the elaboration of new pedagogical methods utilizing the options provided by the informatics revolution.

− Learning, instruction, and testing have changed, as on-line tests are applied virtually on a daily basis. As the results of the survey have proved in addition to testing both oral and written expression have to be encouraged.

− The assessment of the learning habits and needs of students is indispensable to promoting the adaptation of teaching and its closely related areas to the changing needs of our times.

Publications, conference presentations and lectures related to the topic

Göncziné Kapros Katalin 2013 júliusi Könyvtáros Vándorgyűlésen az előadásában a kutatási eredményeket felhasználta. Magyar Könyvtárosok Egyesülete 45. Vándorgyűlése c. országos konferencia 2013. július 18–20. (2013.07.19.) Előadás címe: **A könyvtár megítélése hallgatói szemmel – egy felmérés tapasztalatai**. (The evaluation of the library from the point of view of students−conclusions of a survey)

2013. December 12–13-án került sor megrendezésre a Szentpétervári Állami Film és Videoechnikai Egyetemen (СПбГУКиТ) **„Yuriy Nikolayevich Gorokhovskiy Történelem és modernitás" nemzetközi konferencia** az Egyetem Médiatechnológia fakultáns szervezésében. Tóthné Parázsó Lenke a december 12-i plenáris előadáson az Oktatás modern információtechnológia kérdései témakörben (Современные Образовательные Информационные Технологии) tartott előadást oroszul.

T. Parázsó Lenke (társszerző) Современные Образовательные Информационные Технологии (Соит) В Интегрированной Медиакоммуникативной Интерактивной Информационной Среде. УДК 00(082), ББК 65.26, А 43 в Актуальные проблемы современной науки: сборник статей А43 Международная научно – практическая конференция. 13–14 декабря 2013 г.: в 4 ч. Ч.1/ отв. Ред. А.А. Скиасян. - Уфа: РИЦБашГУ, 2013.- 334 с. 31–43.

2014. április 23–25 között, a **Breszti Állami Műszaki Egyetemen** megrendezett nemzetközi konferencia T. Parázsó Lenke, főiskolai tanár a konferencia nyitónapján, plenáris előadás keretében beszélt az Információtechnológia 21. századbeli kérdéseiről oroszul.

Тотне Паражо Ленке, (társszerző/): Особенности использования интегрированных медиакоммуникативных интерактивных информационных сред в профессиональном техническом и экологическом образовании. УДК 00(082), ББК 65.26, А 43 в Актуальные проблемы современной науки: сборник статей А43 Международная научно – практическая конференция. 13–14 декабря 2013 г.: в 4 ч. Ч.1/ отв. Ред. А.А. Скиасян. - Уфа: РИЦБашГУ, 2013.- 334 с. 31 – 43.

Parázsó L.T. (társszerző): *Педагогический Опыт Применения On Line Тестирования Для Оценки Знаний Студентов.*

Parázsó L.T. (2012): *On-line értékelési módszerek* (*On-line evaluation methods*), Eger.

Parázsó L.T. (2004): *Анализ структуры и эффективности использования современных информационных технологий (СИТ) в учебном процессе. III. Система обучения на основе программной среды MATLAB* (társszerző), [w:] *Сборник научных трудов. Выпуск 17*, Санкт-Петербург.

Péter A., Parázsó L.T. (2004): *Az on line tananyagok szerepe a képességek készségek elsajátításában* (*The Role of On-Line Educational Materials in the Acquisition of Abilities and Skills*), „Agria Media”.

Agria Media 2014 Eger, előadások доклады

– A. Péter: *Mobile Computing and Pedagogy: The Contribution of the IPAD to Educational Innovation*

– G.K. Katalin: *Tanári munka eredményességét befolyásoló háttérfeltételek vizsgálata Гёнцине Капрош Каталин: Исследование предпосылок, влияющих на эффективность работы преподавателей*

Parázsó L.T., *Oktatók és hallgatók digitális kultúra elemei, eszközei felsőfokú oktatásban eredményes munka háttérfeltételei* (*The Components and Devices of the Digital Culture of Instructors and Students, Background to Effective Teaching in Higher Education*).

Abstract

As teachers we have to think about our capability of delivering both „Traditional” and „Future-oriented” content in the language of digital natives. The first requires broad sweeping material conversion and methodological change, while the second calls for *additional* new content and new thinking.

Nowadays, when the digital competence of students far exceeds that of the average adult or even of teachers the most important task is the development of

educational materials that are easy to process and work with. If we want to address our students successfully and keep pace with the times we have to rely on the latest information and communication technology and web 2.0 approaches. The forthcoming analysis of the learning styles of students and the information acquisition and teaching styles of instructors aims to increase the effectiveness of the teaching – learning process along with identifying the necessary background criteria.

Additional goals include the examination of the most frequently used platforms and methods and the respective correlations both from the vantage point of instructors and students.