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ARE UNIVERSITIES ABLE TO USE THE POTENTIAL OF STUDENTS – DIGITAL NATIVES?

The paper presents results of theoretical and empiric study based on experience and data from three different universities in Lithuania. The research idea was formulated while analysing why students (digital natives) are quite reluctant to leave the comfort zones of Facebook and similar social networks in order to explore learning possibilities embedded in other platforms, including the ones provided by a university. The aim of the study: to identify the perspective of students (specifically, not students of information sciences) on the ICT based tools and their application for studies. Methodologies of quantitative and qualitative research were used for empiric study. Conclusions are provided, among them – the statement that the role of a teacher, at least for some time now and into the future, remains important and significant in order to help students (digital natives) to meaningfully use ample opportunities provided by ICT based technologies for studies.

KEY WORDS: e-learning of university students, learning of Digital Natives, ICT based learning tools, Web 2.0 based learning tools.

1. Introduction

Contemporary students quite often are considered to represent the generation of Digital Natives (DN). On the other hand, as the university teachers' practice shows, students

are often reluctant to use available technologies for their studies, therefore e-learning is limited in many cases.

Problem question: Why students, who seem to be using ICT tools eagerly for everyday life, seem reluctant to use ICT tools for studies (for organizing their own learning)?

The aim of the paper is to present a study, including theoretical considerations and empirical data, on the paradox of the nature of studies of young students in higher education institutions with reference to e-learning.

The object of the study is the paradox of the nature of studies of young students in higher education with the reference to e-learning.

Objectives: the paper will present theoretical considerations on the contents of the concepts, including e-learning; the paradox related to DN learning; the paper will present the logics and design, also procedures of the empirical study based on the methodology of quantitative research, and finally some data from the study will be presented together with conclusions and some insights for the enhancements of educational practices in contemporary higher education, namely for fostering e-learning.

Methodologies of quantitative and qualitative research were used for the investigation of the paradox of the nature of studies at higher education when applying e-learning principles and technologies. This stage of study was designed as a pilot study, with the perspective to investigate further on the phenomenon of the paradox of the nature of studies (why while using ICT tools so eagerly in everyday life young people seem reluctant to do so when learning in studies; that is, why their e-learning seems quite limited). The method of a questionnaire (on-line tool) was used for a quantitative research with the goal to identify which specific ICT tools are used by young people for their leisure time, communication and studies. Furthermore, the method of written reflections was employed in order to identify subjective perspectives of students (18 – 23 years old) on the way they conceptualize, interpret and attribute practical implications to the employment of technologies in their studies.

2. ICT in daily life and ICT in university e-learning

As DN spend a very large part of their active life on the Internet, their preferred ICT tools are mainly related to the Internet, to cloud computing, and, mostly, to Web 2.0 technologies. The list of such tools is rather long, but we can point out that these tools are heavily and successfully making use of Web 2.0 features as formulated by Tim O'Reilly (O'Reilly 2006), starting from different aspects of collective intelligence and going further to dynamic data as the basis for web services, platform independence, etc. Therefore, we see DN heavily using such shared content systems and collaboration tools as YouTube, Wikipedia, Flickr, Instagram, Google Docs, Google Sheets etc., social networks and communication tools such as Facebook, Google Groups, Instagram, Twitter, Skype, etc. Therefore, it would be natural to use comparable tools in the learning process, hoping for students to reuse their everyday out-of-university experience in the electronic space.

Meanwhile, ICT tools used in ICT based learning process at universities are not always compliant to the latest achievements in ICT technology development. For example, many

universities in Lithuania are using the Moodle open source leaning platform allowing educators to create content-rich, dynamic online courses. The Moodle platform offers quite a lot of tools for collaboration, including tools for collectively creating a bank of records, a wiki of collaborative authoring of web documents, etc. Even more, the Moodle platform enables easy access to additional external tools supporting the LTI 2.0 (Learning Tools Interoperability) specification. However, teachers preparing online course material for the Moodle platform very seldom exploit these advanced possibilities. There are several reasons for that. First of all, teachers are not willing to learn how to master those advanced capabilities, in most cases limiting themselves to just uploading electronic documents and allowing students to upload their assignments. On the other hand, some of the collaboration tools offered in the Moodle environment are much less flexible and attractive compared to those everyday collaboration tools, though in many cases they address the same functionality. Moodle wiki for collaborative content design can be taken as an example. A difficult to use interface together with limitations in access management are the factors limiting the use of this tool by both teachers and students. Problems may be even bigger when considering proprietary e-learning systems implemented by some universities, as there is a great risk of lacking resources for appropriate development of such systems after their first installations.

Summarizing, the most frequent problems with ICT based learning tools in universities include: lack of dynamic content; tools with limited functionality; inconvenient user interfaces that do not resemble the interfaces of everyday services; teacher unwillingness to use advanced features of ICT tools; the overall shortage of tools typical to social networks. All this taken together prevents current university e-learning environments from developing into real educational social networks as students perceive them.

In addition, the reluctance of students to use different virtual social networking environments could also be the case. In this case, it would be relevant for the design of a virtual learning environment to rely on the integration of the existing widely-adopted social networking environments and tools (e.g. Google Plus) as much as possible.

However, are these features the only ones to blame for the lower-than expected efficiency of students' use of virtual study platforms and other ICT tools provided by the university?

3. Digital era and digital natives

Today the discourse of the so-called 'net generation' or 'digital natives' – youth born in 1980s and later, spending a large portion of their lifetime online, became wide-spread (Oblinger, Oblinger 2005, Brill, Park 2008, Bennett et al. 2008, Jones 2010). Modern web technologies enter daily life, their application goes far beyond the internal domestic environment and their user gradually becomes a multi-tasker (Talbot 2007). Therefore, it is reasonable to monitor their habits, their development and their impact on learning, and, specifically, on e-learning. Based on a survey data, approximately 50% of adolescents in the US have their blogs (McLoughlin, Lee 2008). According to a study completed in Lithuania (Žibėnienė, Brasienė 2013), middle-high and high school students use social networking tools inten-

sively: 95.3% of respondents had a profile in some Internet based social network; 77.1% participated in social networks in order to find new friends and to communicate; and as many as 60.7% respondents indicated that the motive for participating in social networks was boredom and lack of engagement into other kinds of activities.

Combes (2012) criticizes the definition of DN, submitting an analogy that not everybody born when bicycles and cars were widely used is able to operate these vehicles. The author supports these statements with official statistics reports: drivers of up to 25 years old are to blame for the largest share of car accidents. Drivers should not be able to manage vehicles mechanically, but should also learn the traffic rules.

Youngsters who were born when alphabets were already created did not learn to read and write automatically. Only communication skills, i.e. talking skills, are acquired by small children without any bigger efforts. Only some of them need special help for that. Meanwhile, an alphabet, or language recording according to specific rules, and reading – these can also be considered as kind of information technology used by mankind for thousands of years already. Younger generations are systematically learning this technology from their childhood. ICT is also created by humans; therefore, the younger generation should learn how to use it. Nowadays, a lot of software tools are designed covering different user needs. Social network access can be considered as one of the most widely-spread ICT technology, namely web technology, today. It is attractive for users, easy to master, however requires additional skills, such as: information search, information management, the Internet etiquette, electronic data security, etc. M. Fraser and S. Dutta (2010) distinguishes between five types of social networks: egocentric (MySpace, Facebook, platforms for creating virtual identities, as well as for developing individual creativity and artistic expression); communal (replicating real-world communities); opportunistic (e.g., LinkedIn, vertical portals for doctors, scientists, stockbrokers, etc.) with members joining for rational reasons – business or professional contacts; passion-oriented horizontal networks where members are brought together by common interests and hobbies; information-sharing portals (Youtube, Flickr) described not by membership, but by content.

"E-learning is not a panacea or an opportunity where everyone will benefit, just as not every student benefits from the traditional classroom" (Fainholc 2014, p. 85). Self-organizing environments not necessarily act as efficient learning environments. The wisdom of an uncontrolled crowd can easily turn into an inordinate, unstructured information flow barely suitable for learning. However, control applied in this case should not become a dictate. Therefore, the application of Web 2.0 technologies is a challenge for e-learning designers and users (teachers and students), as it is necessary to design systems, structures and processes that would be qualitative and professional in the pedagogical sense, and would form a virtual learning environment, implementing horizontal learning with the use of group knowledge construction (Dron 2007). DN students know how social networks operate, how to find information on the Internet, but teachers, librarians and parents have to teach them interpret the acquired information (Palfrey, Gasser 2010).

In summing up theoretical and empirical considerations of several authors, N. Tshuma (2015) posits that a great number of researchers still interpret advancements of ICT

technologies and their application for studies as challenges. Examples of success stories globally provide a picture of exceptions rather that a landscape of wide-spread realities and well-established or even mundane practices. Teachers apply ICT in study process, however, in many cases application is sporadic, "low-level", only rarely leading to establishing long-range and viable practices. In many cases, ICT application is a mere disguise for translating traditional (face-to-face) teaching and learning methods into the online environment. The choice of ICT to be used for studies is to a great extent determined by economic factors and the level of teacher competence rather than more in-depth educational considerations. Also, the culture of organizations and state orientation are among determining factors.

On the one hand, the digital technologies that contemporary DN like and use so much, were (at least up till now) developed by Digital Immigrants (DI), i.e., an older generation. On the other hand, in many cases these technologies are used for other purposes than they were originally intended; yet other technologies that had been considered perspective, became redundant, because DN users did not find them attractive. Davidson and Waddington (2010) state that technologies used in everyday life by a typical contemporary student and his/her experience are often in dissonance with learning platforms and virtual environment offered by the university. Gros *et al.* (2012) conducted a research showing that: "students perceive themselves as fairly competent in most areas (communication, creation, etc.), although the data does not indicate that these competences are necessarily reflected in the normal performance of academic tasks" (Gros *et al.* 2012, p. 207); elsewhere: <they> "create their own groups independent of the "official" communication spaces in the virtual campus" (Gros *et al.* 2012, p. 203).

Moreover, as B.Stachowiak (2013) presents the study of M. Jędrzejk (Poland), for the development of their final thesis, students use Wikipedia as the main source of information; furthermore, a number of such students increased in recent years: from 34 % in 2007 to 54 % in 2009. A. Margaryan and A. Littlejohn (2008) presents a research revealing "low level of use of and familiarity with collaborative knowledge creation tools, virtual worlds, personal web publishing, and other emergent social technologies" (Margaryan, Littlejohn 2008, p. 22).

The results of a research accomplished in UK (Margaryan, Littlejohn 2008) showed that students' attitude to learning is largely formed by the methods used by teachers. The research showed that for students who can be considered as DN traditional learning is still more attractive than ICT based learning, and that students tend to use a limited number of ICT based tools (most often institutional virtual learning environment, Google, Wikipedia, mobile phones, and, definitely social networks). The researchers found that younger students use ICT based tools more actively, but none of those age groups tend to use technologies for studies. Summarizing, it can be stated that young students, although able to use ICT based tools, tend to use teacher suggested methods for studies. Therefore, we can conclude that the role of the teacher (though we name him as a DI), as a leader, is very important in encouraging students to use ICT based tools for studies. This means that the teacher must learn how to use ICT based tools, because otherwise he will have nothing to offer students.

Studies in Australia (Carr, 2015) reveal the factors (external, individual and socio-material domains) for young teachers just starting their professional career in the first or second year for choosing ICT applications in order to enrich or transform the educational process. Studies revealed that in most cases young teachers (being DN themselves) tended to choose those ICT tools and applications that their older teachers preferred and used, moreover, they actually tended to mostly use well established, traditional practices, e.g. traditional lectures. According to N. Carr (2015), 15 years of trying to apply ICT in Australian schools are of "limited success", at best.

In summing up, we may confidently state that both students and young teachers in many cases (of course, we are not generalising as there also are many examples of innovative and courageous students and young teachers) tend to use and apply methods and tools that their older colleagues use and apply in their educational practices (Carr 2015, Tshuma 2015, Fainholc 2014). We may also confidently state that most recent studies identify application of ICT tools for studies as a complicated and controversial process. It would seem that next to an array of other factors and the interaction of those factors, dedication and competence of older, experienced teachers remains one of the key success factors in applying ICT for enriching the educational process.

4. Learning the habits of digital natives

Nowadays, the knowledge society is transforming into an interactive society or a society of two-way interaction (Milne 2007, Talbot 2007, Brill, Park 2008). Here a comment should be added concerning new challenges for software designers. As tools based on Web 1.0, Web 2.0, and even (the first signs are evident) 3.0, are more often used for studies, it is necessary to offer teachers and students new and easily maintained tools for monitoring, evaluation and assessment.

P. Anderson (2007) indicates 6 main ideas underpinning Web 2.0 tools: creation of individual contents and user-created content; collective knowledge (wisdom of crowds), global data review and analysis without geographical and even historical boundaries; participation is possible in data collection, analysis and generation; network effect and openness. For the purposes of our analysis, the following is important: those principles are productive for creating effective, encouraging, and user-friendly tools for learning environments: Wiki, RSS, even YouTube, Flickr, Slideshare, etc. People gather into virtual learning communities and social networks where contents is both 'used' and 'created', and may be creation is happening even more often (Dron 2007, Downes 2007). Learning in networks is based on the principle of semantics with the four main constituting elements: diversity, autonomy, interaction and openness (Downes 2007). The principle of technologies provided for learning are of reciprocal nature: they are both based on the principle of autonomy, and at the same time, they only work if the learner is autonomous. It would seem that learning in networks may decrease the degree of input that a formal education institution (in our case: university) has for an overall array of learning opportunities of a contemporary individual. That is true, because an individual, a student, has all the stakes in his/her hands (Dron 2007, Fraser, Dutta 2010, Davidson, Waddington 2010).

It would seem that e-learning using Web 2.0 tools may be characterized as a potentially creative, more democratic (in a way that it is really quite accessible once learners decide to engage in learning) learning, because non-traditional resources and environments may be used as sources for learning and contents is being created by employing the intellect of groups (large ones) of participants.

However, in the context of so many opportunities – why students in higher education do not employ those and other tools, specifically designed for learning, or tools designed maybe for other purposes but extremely useful for learning, to a degree that one may expect out of a DN?

Fainholc (2014), on the basis of multidimensional e-learning analysis, states that many current e-learning initiatives follow the "one-size-fits-all" approach. This approach provides a statistical, average solution to students. According to Fainholc (2014), "this approach is related to lack of knowledge of them as the audience in an e-learning project; that is overall and therefore fail to provide satisfactory outputs, or leadership, management issues, etc." (p. 99). Fainholc (2014) calls for multidimensional model of evaluating the quality of e-learning. The criteria/indicators could be: an appropriate educational technological approach; the instructional design (Liu *et al.* 2009); students' motivation towards a commitment to take an active role in the virtual environment by a self-directed e-learning; proactive attitudes towards a practice for a critical approach on the use of ICT beyond the students having technological literacy and competences to interact in a virtual educational program; achievement of deep knowledge; a multilingual and multicultural background of students, tutors, etc.; technical consulting possibilities; trained and well-paid tutors as e-moderators; social presence which is the predisposition of every component of an educational project mediated by ICT.

The authors posit three hypothetical answers, which, however, are not mutually exclusive; rather they may interact.

Firstly, students in higher education may simply not be aware of how to translate the tools they use for leisure, for getting to know peers, and even to find intimate friends into tools for studies and, preferably, learning.

Secondly, young people may not see the link between a physical building of a university and a virtual study-platform.

Thirdly, hypothesis stems from the theory of the limited resources each person has (McClusky 1974). With too many tasks and responsibilities, which describe well a contemporary situation of a 'multitasker', a person may just be overwhelmed with too many requirements and expectations. Even if a young person has more energy than an older one, even then the constant and a multi-layered influx of information may be just too much even for a young person. And, as he or she starts filtering, even unconsciously, the first layers that get filtered out are virtual study-platforms offered by a certain institution for studies and for learning, as they are least familiar to young people.

Surely, the hypotheses need further investigation, however, for the purpose of this study, it was decided to hold onto the main statements.

Firstly, each of the hypotheses may have some validity and some degree of input into understanding the phenomenon. Most probably, the interaction between all of them produces the effect that does not cease to surprise university teachers and, namely, a relative reluctance of students to use effectively a virtual study-platform available at certain organization.

Secondly, a multi-stage empiric study is needed in order to either substantiate claims, or reject them, and the qualitative approach might prove to be most productive.

5. Procedure and sample of the study

The results of the study where students were asked to reflect on tools that they use for learning in their studies are presented. The on-line questionnaire consisted of closed-type questions; in addition, two questions were open, that is, students were asked for their reflections on certain concepts and their own behaviors. Higher education students of the first year, as representing the generation of DN, were invited to participate. The study was carried out in three Lithuanian universities in the period from December 2014 to January 2015. The research sample consisted of 138 first year students: 71 (51.1%) university X, 38 (27.5%) university Y, 29 (21%) university Z. 48.5% of them were social science students, 39.1% medical students and 12.3% veterinary students. The study was specifically designed not to include students from technical or computer sciences, because it would be logical to expect that students from those fields would be more competent and self–assured in this respect. The age of the participating students varied from 19 to 26. Students' experience in working with computers was from 5 to 16 years (10.29 on average). Students' experience in using the Internet was from 4 to 15 years (8.48 on average).

6. Results of the study: students on their ICT competence and e-learning

Students were asked to assess their skills in using Internet tools. Students' self-assessment of their competence to use Internet is also somewhat moderate with slightly more than 30% considering themselves as competent users. Students were asked whether they thought that they used Interned based tools for studies to a sufficient extent during the last five months (that is, during their first semester). Approximately two thirds (65.22%) of the respondents said that they were doing that to a sufficient extent. The answers in three different universities are slightly different: from 60.5% (u-ty Y) to 75.9% (u-ty Z) of the respondents claimed sufficiently using ICT opportunities for learning.

The majority of students who took part in the study assess themselves as "independent users" (slightly more than one half, 71 students) and "well-mastered online tools users" (slightly more than one third, 42 students). Both groups include students who believe that their application of ICT in studies is sufficient, and also those who think that their application of ICT in studies is not sufficient.

The results show that even during studies, the emphasis for using ICT is on communication (more than 92%) in contrast to a seemingly logical choice to use (analyze, apply) materials published by teachers for the specific needs of the very students at focus (only 68%

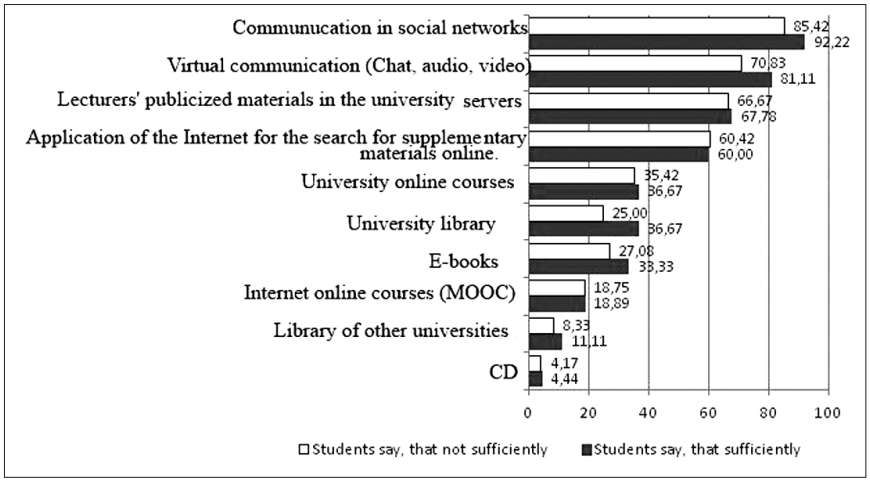


Fig. 1. **Students' opinion on the application of ICT in the study process (percentage of choices not of respondents)**

of choices indicated that task to be sufficiently performed), Fig. 1. Even for supplementary materials, students do not search that often (60% of choices indicate 'sufficiently'), not to mention university on-line courses or library.

Fig.1 illustrates that both groups of students (those who reported applying ICT opportunities for learning sufficiently) and students (those who reported applying ICT opportunities for learning not sufficiently) use ICT tools for learning during studies similarly.

Students were asked to reflect on where they look for help when having problems in using ICT tools. (Fig. 2). Eight out of ten (83.3%) consult with other students, their col-

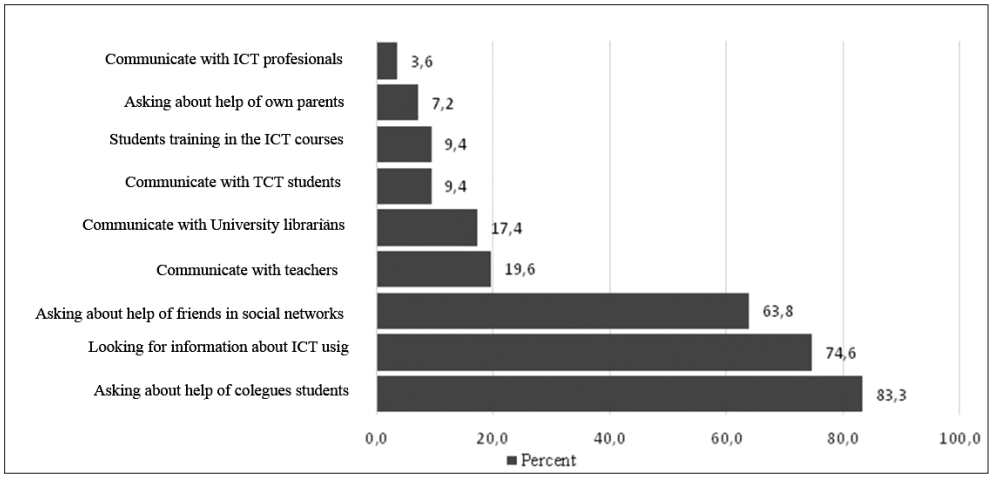
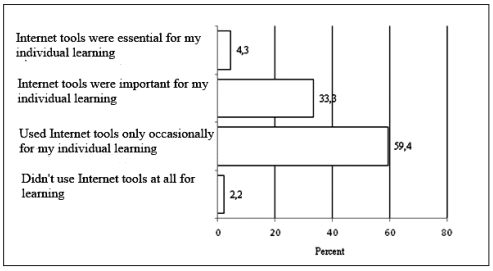


Fig.2. **Where do students look for help when they have problems in using ICT tools?**

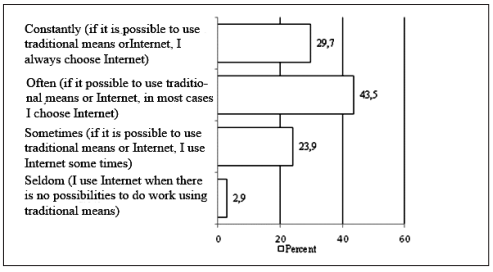
leagues; seven out of ten (74.6%) search for information on ICT by themselves; six out of ten (63.8%) communicate with their friends in social networks; two out of ten (19.8%) communicate with teachers or with university librarians (17.4%).

Students were asked to name what Web 2.0 tools they are using. The statistics on Internet tools used by students every day is the following: the first five positions represent communication tools. All students use social networks every day: nine out of ten (87.7%) are using Facebook; three out of ten (27.5%) are using Instagram, six out of ten (60.9 %) are using Gmail, five out of ten (50.7%) are using YouTube.

Students were asked whether they used Internet based (or ICT) tools for learning before they entered university (Fig. 3, A). The question was whether they used tools even without teachers' instruction. The study reveals that the use of Internet for studies is limited (just a bit more than 30% of the students reported it being important for their learning (Fig. 3, A). During the first part of the semester, a third of the students (29.7%) (Fig.3, B) noted that if they had an opportunity to choose (traditional or Internet based tools), they would choose Internet based tools. In this group of respondents, one third represents those who reported having used Internet based tools before entering the university, those were the ones for whom Internet tools were important for individual learning.



A. When considering individual learning before university studies, how would you characterize your individual use of Internet tools for learning?



B. How often did you use Internet for studies during the last 5 months (during your first semester)?

Fig. 3. **Students on using the Internet (and its tools) for learning during studies**

Students were asked two questions (Fig.4): 1) how do you rate your use of Internet tools? (Answers: not confident, gaining confidence, confident, very confident); 2) how do you feel about using Internet tools? (Answers: strongly dislike, dislike, like, very enjoyable). Students had to assess the following online activities: K1– Using Internet for studies; K2 – Communication with friends and family; K3 – Using e-banking and paying bills; K4 – Filling in tax declarations; K5 – Buying and selling books, clothes and other things; K6 – Knowledge management; K7 – Time planning: using online calendar; K8 – Entertainment online (movies, music, games and other) (Fig. 4).

Summarizing the information in Fig. 1 and Fig. 4, it can be observed that seven out of ten students (66.67% and 67.78%) are using electronic material published by teachers in the university servers, and six out of ten (60.42% and 60%) are searching for additional infor-

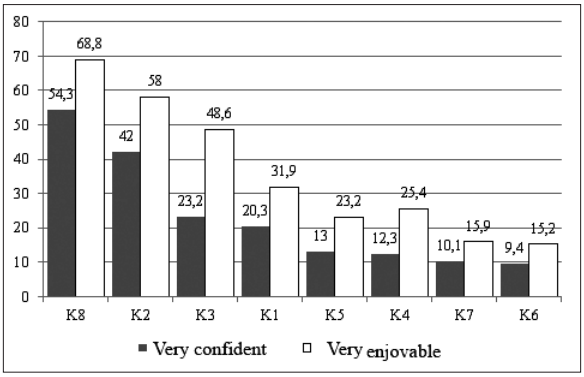


Fig. 4. **Students assess their abilities of accomplishing different activities online and indicate whether these activities are attractive for them**

mation on the Internet. However, it should be noted that learning from teacher-prepared textual materials cannot be considered as an active learning mode. This is traditional learning only using presentation in a digital form. Most students prefer learning from teacher-prepared material. Far fewer students are able to, or like to, learn using Internet resources (e.g., when tasks are given for students to find necessary data, analyze them and filter the necessary information). This is illustrated in Fig. 5, where we can observe that two out of ten students (20.3%) indicate that they are able to use the Internet for studies very efficiently, and three out of ten (31.9%) indicate that they are very enthusiastic to do so. Nearly six out of ten students (54.3%) are able to use online entertainment activities (movies, music, games, etc.) very well, and seven out of ten (68.8%) are very enthusiastic in doing so.

Therefore, it would seem that any of the three posited hypothesis may hide behind the data. Quantitative data expressed in percentage and cases substantiate the experience that the representatives from three different universities have on the situation. However, the reasons for the situation (which of the three hypotheses may be in force) remain to be clarified further on using another methodology.

6.1. Students on the reasons to use and not to use ICT tools for learning during studies

As it was indicated above, the study had two parts, with the qualitative part focusing on the identification of subjective perspectives. While analyzing students' written reflection, several categories were identified. The crudest categorization generated two categories of contributions: Obstacles (lack of competence for using virtual study-platform, inconvenient interface of virtual study-platform (T9 [1054-1263] "I realized that I was confusing the ability to find and switch on a computer game with the competence to find necessary information for my studies…"; weaknesses in administrating virtual study-platform of a university, as students do not recognize university intranet as an integral part of a given

university, its virtual subsidiary, technical problems) and Strengths (students conceptualize the concept of "informational literacy" (T13 [1844-2003] "…we discussed informational literacy even before this university, back in college. However, only here, at the university, I understood the meaning of this concept…"), the university intranet is used by both teachers and students, the university intranet publishes study materials). Students note more obstacles than they notice strengths in the system, which again re-iterates the concern of the authors of this paper, as well as of the researchers and authors of some other studies quoted here, on the fact that students have to be encouraged and supported (paradoxically so) by teachers in order to use ample and productive opportunities for learning during their studies.

Conclusions

1. The issue of DN students not using the opportunities of the Internet based (or ICT based) tools for their own learning during studies is if not universal, then, surely, wide spread. That it is evident from the studies both in the UK and in other countries and also from the experience of the authors of this paper and the results of an empirical study.
2. Probable explanations or, as it was formulated here, hypotheses seem to have credibility when analysis of the first data from an empiric study was completed. It would seem that students really sometimes fail to conceptualize ICT tools as being useful for learning (hypothesis 1), and they really do not conceptualize university as having a virtual subsidiary (virtual study-platform) as an integral part of a given university (hypothesis 2). The third hypothesis remains to be tested further on.
3. It is evident that the role of a teacher (DI) at least for some time now and into the future, contrary to a wide spread rhetoric, remains important and significant. Both theoretical and empiric findings reveal a necessity to encourage students to use the opportunities that are there, and use those opportunities in a responsible and productive way.

References

ANDERSON, P., 2007. *What is Web 2.0? Ideas, technologies and implications for education. JISC. Technology & Standards Watch*, 64. Available from: http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf (accesed on July 5, 2010).

BENNETT, S., MATON, K., KERVIN, L., 2008. The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775–786.

BRILL, J. M., PARK, Y., 2008. Facilitating Engaged Learning in the Interaction Age Taking a Pedagogically-Disciplined Approach to Innovation with Emergent Technologies. *International Journal of Teaching and Learning in Higher Education.* Volume 20, Number 1, 70–78. Available from: http://www.isetl.org/ijtlhe/pdf/IJTLHE474.pdf (accesed on January 20, 2010).

CARR, N., 2015. The wicked problem of integrating ict: more than teacher knowledge. *Proceedings of EDULEARN15. International Conference on Education and New Learning Technologies*. Ed. By L.Gomez Chova, A. Lopez Martinez, I. Candel Torres. 6th–8th July 2015, Barcelona, Spain. IATED Academy, 2711–2719.

COMBES, B. A., 2012. *Tech savvy or tech orientied? Information-seeking behavior and the Net Generation*. Ph.D. Curtin University, Deprtment of Media and information.

DAVIDSON, A. L., WADDINGTON, D., 2010. E-Learning in the university: When will it really happen? *eLearning Papers*. Nº 21. September 2010. Available from: http://www.elearningeuropa.info/files/media/media23710.pdf (accesed on January 20, 2011).

DOWNES, S., 2007. Learning networks in practice. *Emerging Technologies for Learning*. Volume 2. National Research Council of Canada. British Educational Communications and Technology Agency (Becta). Available from: http://partners.becta.org.uk/page_documents/research/emerging_technologies07_chapter2.pdf (accesed on March 20, 2010).

DRON, J., 2007. Designing the Undesignable: Social Software and Control. *Educational Technology & Society*, 10 (3), 60–71. Available from: http://www.ifets.info/journals/10_3/5.pdf (accesed on May 5, 2010).

FRASER, M., DUTTA, S., 2010. *Mano virtualieji aš. Kaip socialiniai tinklai keičia gyvenimą, darbą ir pasaulį.* Vilnius: Eugrima.

FAINHOLC, B., 2014. The Need of a Multidimensional Analysis for the Success of E-learning programs. *E-Learning as a Socio-Cultural System: A Multidimensional Analysis.* Editors: Vaiva Zuzevičiūtė, Edita Butrimė, Daiva Vitkutė-Adžgauskienė, Vladislav Vladimirovich Fomin, Kathy Kikis-Papadakis. Hershey, PA: Information Science Reference, 84–101.

GROS, B., GARCIA, I., ESCOFET, A., 2012. Beyond the Net Generation Debate: A Comparison of Digital Learners in Face-to-Face and Virtual Universities. *International Review of Research in Open & Distance Learning*, Vol. 13, Issue 4–1, 190–210.

JONES, C., 2010. Networked Learning, the Net Generation and Digital Natives. *Proceedings of the 7 th International Conference on Networked Learning 2010*. 3rd & 4th May, 2010. Aalborg, Denmark. Ed. By: Dirckinck – Holmferld L., Hodson V., Jones, C., de Laat M., McConnell D., Ryberg T. P. 617–618. Available from: http://www.lancs.ac.uk/fss/organisations/netlc/past/nlc2010/abstracts/PDFs/Jones.pdf (accesed on December 5, 2010).

LIU, S. H., LIAO, H. L., PRATT, J., 2009. An Impact of media richness and flow on e-learning technology acceptance. *Computers & Education*, 52, 599–607.

MARGARYAN, A., LITTLEJOHN, A., 2008. Are Digital Natives a myth or a reality?: Student's use of technologies for learning. Final draft December 11, 2008. Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.172.7940&rep=rep1&type=pdf (accesed on February 5, 2015).

MCCLUSKY, H. Y., 1974. Education and Aging: the Scope of the Filed and Perspectives for the Future. (eds. Grabowski S., Mason W. D.). *Learning for Aging*. Washington, DC, Adult Education Association of the USA.

MCLOUGHLIN, C., LEE, M. J., W., 2008. Future Learning Landscapes: Transforming Pedagogy through Social Software. *Innovate. Journal of Online Education.* Volume 4, Issue 5. Fischler School of Education and Human Services at Nova Southeastern University. Available from: http://innovateonline.info/pdf/vol4_issue5/Future_Learning_Landscapes-__Transforming_Pedagogy_through_Social_Software.pdf (accesed on July 5, 2010).

MILNE, A. J., 2007. Entering the interaction age: Implementing a future vision for campus learning spaces...today. *EDUCAUSE Review*, 42(1), 12–31. Available from: http://www.educause.edu/ero/article/entering-interaction-age-implementing-future-vision-campus-learning-spaces (accesed on June 5, 2015).

OBLINGER, D., OBLINGER, J., 2005. Is It Age or IT: First Steps Toward Understanding the Net Generation? *In:* D. G. OBLINGER, J. L. OBLINGER (Ed.). *Educating the Net Generation*, 12–31. Publisher: EDUCAUSE. Available from: www.educause.edu/educatingthenetgen/ (accesed on June 5, 2015).

O'REILLY, R. (creator). 2006. *Web 2.0 Principles and Best Practices (O'Reilly Radar).* O'Reilly Media, 101.

PALFREY, J., GASSER, U., 2010. *Born Digital: Understanding the First Generation of Digital Natives*. Basic Books. New York, USA.

STACHOWIAK, B., 2013. E-reading among students of the political studies and international relations faculty of the Nicolaus Copernicus University in Torun (Poland). *Education Journal*, 2(1), 7–12.

TALBOT, M., 2007. *Media Discourse: Representation and Interaction*, 198. Edinburgh University Press. Edinburgh. Available from: http://www.questia.com/PM.qst?a=o&d=116036499&CRID=nullCRnull&OFFID=onq_20100411j (accesed on June 25, 2010).

TSHUMA, N., 2015. What influences educational technology integration? A critical review of the literature. *Proceedings of EDULEARN15. International Conference on Education and New Learning Technologies.* Ed. By L. Gomez Chova, A. Lopez Martinez, I. Candel Torres. 6th-8th July 2015, Barcelona, Spain. IATED Academy, 3250–3257.

ŽIBĖNIENĖ, G., BRASIENĖ, D., 2013. Using the Internet, Online Social Networks and Potentially Incurred Risk: Student Opinions. *Social Technologies*, 3(1), 53–67.

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AR UNIVERSITETAI GALI IŠNAUDOTI STUDENTŲ – SKAITMENINIŲ ČIABUVIŲ – POTENCIALĄ?

Santrauka

Tyrimo idėja kilo analizuojant pirmo kurso studentų pasiekimus. Studentai vangiai bendravo universiteto intraneto erdvėje, atsiųsdavo atliktas užduotis ne ten, kur buvo nurodyta, nepastebėdavo kalendoriaus pranešimų, dėstytojų pranešimus pastebėdavo tik po kelių dienų. Empirinis tyrimas parodė, kad pirmo kurso studentai (skaitmeniniai čiabuviai) gana nenoriai palieka komforto zonas „Facebook“ ir panašiuose socialiniuose tinkluose, kad pasinaudotų specialių mokymuisi skirtų virtualių aplinkų galimybėmis, taip pat ir universiteto virtualias mokymosi aplinkas. Straipsnis parengtas remiantis mokslinės literatūros analize ir empiriniu tyrimu. Tyrimo duomenys surinkti trijuose universitetuose remiantis kokybinio ir kiekybinio tyrimo metodologija, tačiau, atsižvelgiant į apribojimus, straipsnyje pristatomas pilotinis tyrimas. Probleminis klausimas. Studentai – SČ – taiko savo kasdienėje (laisvalaikio) veikloje informacinėmis ir komunikacinėmis technologijomis (IKT) grindžiamus įrankius. Vadinasi, tai jiems patrauklu. Ar IKT grindžiami įrankiai, taikomi studijoms, yra patrauklūs studentams? Kaip jie vertina virtualią komunikavimo ir grupinio darbo aplinką universitete? Tyrimo tikslas atskleisti ne technologijos ir fizinių mokslų krypčių studijų studentų - SČ - požiūrį į interneto įrankius ir jų naudojimą studijoms. Išvados: studentai (SČ) vangiai naudoja internetu (arba IKT) grindžiamus įrankius skirtus mokymuisi studijose – dažniau studijoms jie

linkę naudoti socialinius tinklus; studentams kartais nepavyksta konceptualizuoti IKT grindžiamus įrankius, kaip tinkamus mokymuisi ir jie virtualios universiteto aplinkos nevertina kaip sudėtinės realaus universiteto dalies; patyrusio dėstytojo vaidmuo studijose išlieka svarbus ir reikšmingas bent tam tikrą laiką dabar ir ateityje ne tik studentams bet ir jauniems karjerą pradedantiems dėstytojams.

REIKŠMINIAI ŽODŽIAI: Universiteto studentų el. mokymasis, skaitmeninių čiabuvių mokymasis, IKT grindžiami mokymosi įrankiai, saityno 2.0 technologijomis grindžiami įrankiai.

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ARE UNIVERSITIES ABLE TO USE THE POTENTIAL OF STUDENTS – DIGITAL NATIVES?

Summary

The research idea was formulated when the learning achievements of first-year students were analyzed. An empirical study revealed that first-year students (Digital Natives (DN)) are quite reluctant to leave the comfort zones of Facebook and similar social networks in order to explore learning possibilities embedded in other platforms, including the ones provided by a university. This paper is based on theoretical and empirical research. Experience collected from three different universities raised concerns addressed in designing and carrying out the study based on qualitative and quantitative research methodology; however, due to limitations of this paper, only pilot study results are presented.

Problem questions are formulated in the context where students (DN) apply information and communication technology (ICT) based tools in their everyday (leisure) activities (hence, it is attractive to them). Why then are the ICT based tools used specifically for virtual learning environments not attractive? How students evaluate the environment for communication and group work at university? The aim of the study is to identify the perspective of students (specifically, not students of information sciences) on ICT based tools and their application for studies.

Conclusions: the issue of students (DN) not using the opportunities of the Internet (or ICT) based tools for their own learning during studies is, if not universal, then, surely, wide spread; students really sometimes fail to conceptualise ICT tools being useful for learning, and they really do not conceptualise university having a virtual subsidiary (virtual study-platform) as an integral part of a given university; the role of a teacher, at least for some time now and into the future, remains important and significant.

KEY WORDS: e-learning of university students, learning of Digital Natives, ICT based learning tools, Web 2.0 based learning tools.

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