POTENTIALS AND LIMITATIONS OF THE INTERNET USE IN THE LEARNING PROCESS

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Abstract. The main research objective of this paper is to point out potentials and limitations of the Internet in the process of learning in higher education, through review and analysis of literature. The results of this theoretical study emphasize positive aspects of the Internet use in the learning process of university students that arise from the Internet features such as high technical capabilities, power, speed, universality and accessibility, as well as high sensitivity of young people to the means of new media. The positive effects of the application of the Internet were pointed out in research studies that analysed the process of innovation in higher education, the changes in the culture of learning, or certain aspects of personality development of university students. In contrast, some studies pointed out the limitations that may occur when using the Internet in the learning process related primarily to the credibility of the information, light and entertaining content dominance, and dependence on technology. Accordingly, it is recommended to adopt the measures on a larger scale that will affect the greater use of the Internet in the process of acquiring knowledge, especially in the field of higher education.

Keywords: Internet, learning resources, potentials and limitations, higher education

Introduction

A frequent use of the Internet in the process of learning and teaching has instigated changes in all learning areas and at all levels of the education system, from pre-school institutions to universities. Changes are especially discernible in the field of higher education within which Internet technologies are an inevitable component of the process of education. In the modern world, the organisation of work on faculties is almost inconceivable without the use of Internet technologies, as evidenced by an increasing number of research studies (O'Flaherty & Phillips, 2015; Nguyen et al., 2015; Morris et al., 2016). In accordance with the expanding use of Internet technologies the processes of teaching and learning organisation are changing as well, which has aroused attention of a large number of researchers in the field of new technologies, but also in the field of education (Ciampa, 2014; Rennie & Morrison, 2013; Castaño-Muñoz et al., 2014). Researchers progressively attest to significant potentials of Internet technologies which modernise the process of learning, influence students´ motivation, offer opportunities for research and provide greater autonomy for students. One can postulate that the learning process and development of modern technologies are in a mutual interactive relationship, and that a rapid and intensive development of new Internet tools significantly influences the shaping and modernisation of the learning process at universities. The proliferating implementation of Internet technologies in the field of higher education creates a permanent need for a deeper research into potentials and limitations of this modern learning platform, both in terms of theoretical foundation and practical application.

Theoretical framework

A theoretical basis for learning via Internet technologies is provided by the well-known learning theories such as cognitivism, behaviourism, constructivism and connectivism (Siemens, 2005). Some of them are more and some are

less in compliance with the needs of electronic environment. It is interesting that the first three stated theories had been formulated more than twenty years prior to the emergence of the possibility of applying technologies in the teaching process, and their influence is noticeable even today. Behavioural strategies are primarily used in the study of facts, cognitive strategies are used in the study of processes and principles, and constructivist strategies are used to encourage advanced thinking in students which promotes personal meaning, situated and contextual learning (Gikas & Grant, 2013; Chang et al., 2013). However, it is connectivism that is nowadays increasingly acknowledged as a theory which explains learning through the web and social networks, by virtue of the 2.0 electronic learning technology (Bennett et al., 2013).

The introduction of the Internet in the process of learning causes numerous changes in the culture and manner of learning, primarily due to technical properties which make this tool universal, rapid and extremely powerful in comparison to other previously used teaching tools (Ryan et al., 2000; Forsyth, 2014). In our times, Internet technology has become available to all students. Thus, it is possible to learn at any time and at every place. The properties of the Internet enable one to efficiently and rapidly obtain information, which is a significant advantage in comparison to previous manners of knowledge acquisition.

Aside from objective factors, learning through new technologies also depends on other factors which comprise subjective learning conditions, as well as some elements relating primarily to the organisation of the environment in which the learning process takes place. The elements of the environment in which learning takes place play an important role. Thus, it is less important which content is being mastered and what programme is being used for that purpose. The focus is on the interaction which exists between teachers, students and the content. In that context, a significant role is played by the combination of electronic learning with some traditional forms of learning, such as communication with the teachers, reading some written materials or watching a video.

By combining traditional and electronic forms of learning a new model emerges, which is so-called integrated or hybrid learning, especially suitable for less developed areas inadequately equipped with computers. Hybrid learning combines high technical possibilities of the Internet with the traditional forms and methods, which creates a new learning environment often referred to as virtual environment (Alexander, Lynch, Rabinovich, Knutel, 2014; Osorio Gómez & Duart, 2012; Doering, 2007).

Methodological approach: research goals and hypothesis

The main goal of the research is to ascertain the potentials and limitations of the Internet in the process of learning in higher education by means of an overview and analysis of research studies. In accordance with the set goal the following hypotheses have been defined: (1) An overview of research papers which attest to the advantages of Internet technologies in the learning process; (2) An overview of research papers which indicate the limitations of the Internet in the process of learning of university students.

The authors of the paper resorted to the descriptive method and the method of meta-analysis for the purposes of ascertaining the advantages and limitations of the application of Internet technologies in the process of learning of university students. The sample of papers which have been used in this research had been chosen on the basis of their topic, i.e. the authors have selected the papers which explicitly indicate the benefits which students derive when they learn with the help of Internet technologies, or the limitations which can occur during the process of learning.

Results

In recent years, the interest of researchers in the issues relating to university students´ learning with the help of Internet technologies has increased. Bearing in mind the diversity of the issues, as well as the wider scope of topics

relating to the process of learning at the university level, research papers can be observed and analysed from at least two standpoints: papers which advocate the stance that Internet technologies support the process of learning of university students, and papers which point to potential problems which may occur during the process of learning. Positive effects of the application of the Internet are also emphasised by research studies which scrutinise innovations in the process of higher education, changes in the culture of learning and the promotion of mobile learning (Traxler & Kukulska-Hulme, 2015; Albăstroiu & Felea, 2016).

A significant number of research papers attest to the existence of considerable benefits in learning derived from the introduction of Internet technologies (Kirkwood & Price, 2014). Among those benefits one may distinguish the following: temporal and spatial flexibility, better interaction between students and teachers, team work of students on joint projects, interactivity and availability of the materials, practical work with different technologies, the possibility of adjusting content to individual students; rapid adjustment of students to this method of work, consistency of data, the possibility of measuring the efficiency of learning (Griffin et al., 2009; Kay & LeSage, 2009).

Similarly, research studies indicate that Internet technologies, as a part of university learning, open new possibilities for the modernisation of the traditional process of education. It is believed that the application of the Internet in the process of teaching increases one´s inner and outer motivation and teaching differentiation, as well as the possibility of a greater participation of students in the teaching process, which immensely contributes to the modernisation of the teaching process (Dogruer et al., 2011). Bearing in mind the potentials of the Internet as a modern didactic tool and a learning platform, one should be able to state the advantages of new technologies in the process of education in comparison with traditional forms of work: a faster advancement of students, an increased individualisation, a more permanent knowledge, increased motivation and thought mobilisation of students, the use of diverse and copious knowledge sources, a successful guidance of students through programmes, a better control

of the teaching process, a more efficient evaluation of students, development of students´ autonomy, relieving teachers of routine activities which enables them to dedicate more time to the organisation and management of the teaching process. The modernisation of the teaching process was considerably aided by multimedia programmes which offer the possibility of creating electronic textbooks with texts, images, sound animations and films, which enables the process of learning individualisation (Bowen, 2015). By innovating the learning process through Internet technologies one creates more favourable and stimulating conditions which allows for the possibility of the learning process to be organised through different forms resulting in individual learning. By applying modern Internet tools students can individually advance in mastering lessons, return to those contents which were ambiguous enough, obtain additional and feedback information in accordance with their possibilities and interests (Ellis & Goodyear, 2013). Similarly, other authors also emphasise high potentials of the Internet relating to students´ self-organisation and autonomy in the learning process: students have a real opportunity to participate in deciding what to learn, when to learn, in which manner and at what pace. It is considered that this can be beneficial for the motivation and increased sense of responsibility for the effects of learning. Namely, a student becomes responsible for his/her own learning process and assumes the position of a researcher, which contributes to the development of a positive attitude towards learning (Park et al., 2012).

Pedagogical implications indicate that the use of the Internet in the learning process develops new democratic forms of learning, establishes entirely new standards in the processes of learning, mastering and innovating teaching content, creates conditions for research in learning, i.e. learning for the purposes of engendering creativity and students´ original ideas, and arouses new professional expectations, while multimedia tools provide students with a new manner of accessing information (Prieto et al., 2013). Open access to information on the Internet offers an opportunity for networking and exchange, and thus enables learning through interactions with teachers, other students or experts in certain

fields. In that context, the Internet technologies in the constructivist sense change the manner of organising the learning process, promulgating a new learning culture instead, based on an individual construction of knowledge in co-operation with others, i.e. through collaboration (Zhan et al., 2015; Gewerc et al., 2014).

Some previous research indicates positive aspects of the Internet relating to learning, among which one could emphasise the influences connected with student motivation and learning effects (Mayer, 2014; Gabrielle, 2003). The results show a strong disposition of the young towards using the potentials of new technologies in the learning process. Learning through the Internet provides a support for developing a personal style of learning, for permanently obtaining new information and thus raising the level and quality of knowledge, as well as for the young to use the Internet to browse and download texts and transfer various kinds of data. The aforementioned advantages of the Internet in the teaching and learning processes are significant in the course of lectures on different subjects, whereby one should bear in mind that certain courses are specific and the Internet more or less comes to the fore (Isabwe et al., 2014).

In contrast to studies which confirm the positive aspects of using Internet technologies in teaching and learning, literature offers research studies in which their role is contested and which indicate the negative aspects of their application. The most common objections relate to the content offered by Internet technologies, primarily the credibility of information (Forsyth, 2014; Westerman et al., 2014). Namely, those who speak in favour of the Internet emphasise its positive characteristics such as speed, power and universality, and deal less with the issues of content. The Internet contents change rapidly and, aside from the correct information, one very often encounters unreliable and inaccurate information which may confuse students and lead them astray. Besides, the Internet abounds in carefree and entertaining contents, on the basis of which one may conclude that as such it cannot be used to teach students ethical values and develop a high level communication desirable in a virtual community (Friesen &

Lowe, 2012). The issue of content is particularly sensitive and worrisome, especially when bearing in mind that the young are very susceptible to the influence of Internet technologies and that very often, without any critical thinking, they tend to embrace contents and meassages published in the electronic media. Accordingly, it is necessary to educate the young, not only how to use new technologies, but primarily how to critically approach the contents offered by the media (Hargittai et al., 2010). In that respect, the young should be advised to carefully, objectively and critically adopt information, to always verify their sources and preserve criticle discernment, especially regarding information used in the process of teaching and learning. The issues of a suitable selection of information and of an adequate choice of content that the young resort to are the key issues for all those who deal with the university instruction, primarily for the teachers who are expected to become more engaged in the development of awareness and critical attitude towards the content of the most popular modern media.

By delving into the influence of the Internet over the young, the authors point to the increasing presence of the issues of addiction and pathological use of the Internet, which reflects negatively on the development, functioning, and academic achievements and behaviour of the users (Kuss et al., 2013). Regardless of the numerous possibilities and advantages, one should not neglect the negative consequences of the digital technology.

In essence, the Internet as a new medium requires a strategic introduction and organisation in the teaching process, as well as special approach and application by teachers and students alike, and all for the purposes of achieving positive effects. On the other hand, there are risks and dangers should one fail to introduce the Internet adequately into the teaching process or to use it according to the stated aims. In support of this assertion it is emphasised that it would be a major misconception should one believe that the purchase of expensive and modern technological devices would solve all teaching and learning issues.

They are indeed important and necessary in the teaching process, they can contribute to a better organisation and realisation of the teaching process, but they are neither exclusive nor crucial factor. The tools of new technologies, though technically immaculate, cannot by themselves change or modernise the teaching and learning processes. Like any other devices, they too depend on the application, i.e. on the manner in which they are used in the process of learning. Hence, the use of computers and the Internet is not the deciding factor which can automatically generate new methods of learning. The key role belongs to the human factor. In regard to academic learning, the key role belongs to teachers who influence the organisation of the learning process, and to students as subjects who acquire knowledge in the learning process. In essence, teachers´ initiative is of crucial importance, as well as their support, encourgement and conditions set out for learning through Internet technologies. The role of teachers is equally important in the process of teaching, in organised learning which takes place on the faculty, but also in informal learning, in learning outside the classrooms, which is also most frequently the result of a proper motivation and support by teachers.

Conclusion

On the basis of an overview and analysis of the selected research studies one can conclude that the main goal of the research, which was to ascertain the potentials and limitations of the Internet in the process of learning in higher education, has been accomplished. Namely, one can conclude that the Internet in the process of learning can be very useful and that it offers a lot of potentials which can change the process of learning by placing focus on students as central participants of the learning process. The research results show significant benefits derived from using the Internet at the university level, which confirms the first hypothesis. The Internet indubitably can ensure the development of new approaches to learning, activate the role of students in the construction of their

own knowledge, enable higher autonomy in work, and support changes in teachers´ roles. In accordance with the needs of modern education where the IT environment offers new learning sources the roles of teachers change as well. They are no longer merely lecturers, but co-ordinators and moderators of the learning process, which makes their role more complex and demanding.

The second research hypothesis, which relates to the limitations in the use of Internet technologies, has also been confirmed. Fewer papers show that learning through Internet technologies has its faults and deficiencies, primarily regarding the time necessary to produce the material, the problems of technical nature, students´ addiction and contents which can contain unverified information.

According to the obtained research results various issues impose themselves, especially with regards to the use of the Internet as a platform which offers various learning possibilities. Consequently, it is important to take systemic measures which would create conditions for the use of Internet technologies in the system of education, especially in the field of higher education.

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