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UNIVERSITY STUDENTS' READINESS FOR E-LEARNING: REPLACING OR SUPPLEMENTING FACE-TO-FACE CLASSROOM LEARNING

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Abstract

The main trend that influences much and newly-shapes contemporary education is the development of information technologies. The experience of implementing e-learning technology and on-line education shows that the use of e-learning in higher educational institutions will be soon widespread. To implement successfully e-learning technology in formal educational process, changes in organization should occur. Those who resist changes in educational process are teachers and students. To form correctly the change management strategy concerning e-learning implementation it is necessary to determine students' attitude and readiness. The current research is dedicated to the analysis of students' attitude towards e-learning technology, students' expectations, their readiness to study in electronic educational environment, their readiness to use their own mobile devices for formal education. More than 800 Russian students were surveyed. The information got from preliminary analysis of students' attitude towards e-learning implementation, can be used for smoothing the opposition in relation to changes. If taken into account, these changes can be controlled and the opposition can be effectively negotiated.

Keywords: Blended learning, e-learning, formal education, Higher education, m-learning, non-formal education.

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1. Introduction

The state of the modern world can be characterized as dynamic and rapidly changing. Drastic changes occur in all spheres of life and education is not an exception. The time came long ago for new models and methods of education to meet the requirements of the contemporary world. To do that education needs to be oriented towards future and the trends of world development.

1.1. Problems of modern education

According to the general report of the experts of the OECD Centre for Educational Research and Innovation (CERI) such global factors as globalization, population migration and mobility, urbanization, ecological problems, Internet and technology development, virtual reality, and others influence education (OECD, 2016). Actually, these factors cause problems that education currently faces. Here are some of them:

- the need to transfer knowledge and skills to make students competitive in the era of globalization;
- the need to enhance students' creativity to make them capable of innovations;
- the need to implement exchange programmes in order to increase the level of international culture and tolerance;
- the need to think green;
- the need to bring up individuals capable to live in the information flow.

These problems need to be solved by newly-shaped models of education and appropriate methods of it.

1.2. Information technologies in education

Obviously, one of the main trends that influences much and newly-shapes contemporary education is the development of information technologies and telecommunication systems. Eisner (2004) states that we must embody technology into all of our pedagogy to keep up with the modern society A number of researchers mention that technology is steadily present in the classroom (Huffman & Huffman, 2012; Martin, Diaz, Sancristobal, Gil, Castro, & Peire, 2011), it can enhance educational effects (Sung, Chang, & Liu, 2016). It changes the way we think and perceive information, in other words, it changes the methods by which we store, pass and create knowledge. In all branches of knowledge information technologies accomplish two functions: they work as tools and as objects of knowledge. Consequently, novelties represented by information technologies not only provide a revolutionary development in different branches of knowledge, but also have a direct impact on the scientific and technological progress in all areas of society (Bilyalova, 2017). Indeed, many of the technologies influence the way we teach and learn. For example, mobile devices (smartphones or tablets) engage students in indoor and outdoor activities; social networks and web 2.0 tools give students an opportunity to be more active in their own education, allowing them to become educational "prosumers" that is to say to be both producers and consumers (Martin et al., 2011). New technologies make it possible to individualize the learning process, which directly affects students' learning motivation giving an opportunity to succeed to every student, causing positive emotions. The roles of a teacher and a student differ as compared to conventional techniques: while using interactive

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forms in educational process a student becomes the main acting figure and the teacher acts as an active assistant, whose function is to organize and help on educational process (Bilyalova, 2017).

2. Problem Statement

In order to get the maximum effect of information technology in education it is necessary to overcome a number of problems. There is a need to develop an organization change management strategy, to use efficacious methods of overcoming resistance to changes from the part of teachers as well as from the part of students. Teachers being so-called digital immigrants feel confused and insecure in the situation of e-learning technology implementation. Students being so-called digital natives still do not have significant experience in formal education in electronic educational environment, on public platforms MOOC, in targeted use of private mobile devices in education, etc. To develop effective change management strategy in e-leaning implementation into educational process, firstly, it is necessary to study attitude of the key actors of educational process towards that implementing technology, to analyze educational needs, personal needs, objective and subjective characteristics.

Obviously, to implement successfully e-learning technology in formal educational process, changes in organization should occur. Traditionally, more than half of implemented organizational changes fail, and the main reason is human factor because it is more difficult to change mind and behavior of employees than technology, equipment or organizational structure (Mkrtychyan & Vojlokova, 2013). And the resistance to changes is one of the main problems of developing organization. Those who resist changes in educational process are teachers and students. Higher institutions are rather conservative organizations from the point of view of flexibility of organizational structures as well as organizational behavior which can be characterized as cautious, sometimes hostile on the part of teachers towards implementation of modern methods and technologies enhancing educational process. The main reasons of resistance to changes are the lack of knowledge in the extent of changes, uncertainty in the results of changes, fear of innovation, fear of unknown, fear of the competency lack. Realizing e-learning technologies students become active agents of educational process which means the change in traditional roles. To form correctly the change management strategy concerning e-learning implementation it is necessary to determine students' attitude towards this technology, to understand their expectations, their readiness to study in electronic educational environment, their readiness to use their own mobile devices for formal education, etc.

2.1. Digital natives and digital immigrants

Prensky (2001) was the first to propose two concepts: digital immigrants and digital natives. He divided all the people into two groups: the first group consists of people born before 1980; the second consists of people who were born after 1980. He considered the second group as a new generation of so-called digital natives – people who get used to gain information through digital channels. But in terms of Russia the year of digitalization should be concerned as 2000 because the Internet became widespread and widely available in that period of time. Digital immigrants and digital natives differ in the way they work with information. Digital natives, being surrounded by digital devices all their life, get used to switch from one source of information over to another one quite rapidly that is why they work with short texts rather than with long ones; gain information from various sources often simultaneously using different devices – a computer, a tablet and a mobile phone; they use different forms of information besides textual – video,

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audio, graphics, infographics, etc. (Aladyshkin, Kulik, Michurin, & Anosova, 2017; Bylieva, Lobatyuk, & Rubtsova, 2017).

Conventionally speaking contemporary students (born in 2000) refer to generation of digital natives. That means that the process of education of such people should be organized due to their peculiarities of psycho-physiological and social character and due to means they use working with information, interrelating with each other, etc. (Gashkova, Berezovskaya, & Shipunova, 2017; Bylieva, Lobatyuk, & Rubtsova, 2018). That is why nowadays e-learning technology and on-line education are of growing importance in local (in Russia) as well as in global educational areas. The experience of implementing e-learning technology and on-line education shows that the use of e-learning in higher educational institutions will be soon widespread.

2.2. Formal and non-formal learning

Today multiple educational websites, virtual educational communities and social services, as well as becoming very popular currently mass open online courses (MOOC) foster mass non-formal learning, which does not correlate with the work of schools, vocational education institutions and universities, being formal educational systems. Such educational systems exist to promote *formal learning*, which occurs in an organized and structured environment and is fully apprehended as learning (Cedefop, 2014). It normally follows a syllabus and is intentional in the sense that learning is the goal of all the activities learners engage in. Non-formal learning takes place outside formal learning environments. Being implanted in scheduled activities it is not entirely apprehended as learning – regarding learning time distribution, learning support and learning goals (Cedefop, 2014). It arises from the learner's conscious decision to master a particular activity, skill or area of knowledge and is thus the result of the learner's intentional effort.

Non-formal learning activities are characterised by minimum organization of learning process or full absence of guidance on the part of instructors. But, what is most critical, in the course of self-education a person decides on his own to what extent to combine his personal preferences with demands and capabilities of educational medium and environment, long-term interests with contextual. It correlates with modern tendencies in education where the main objectives are creating conditions for fullest fulfilling personal potential of every student, developing of personal flexibility, skills of self-education, ability to make responsible decisions (Opryshko, Bondrev, & Bondareva, 2014). In this context the perspectives of implementation of electronic learning systems into the formal learning process are doubtless: for organisation, maintenance, optimization and didactic component widening. That's to say it's necessary to employ the advantages of non-formal education in formal education, taking into account positive experience of the former.

2.3. E-learning

Let us consider the characteristics of e-learning in detail. Electronic learning or e-Learning is a widespread in the modern world technology of teaching, based on using multimedia and interactive learning resources, organized in such a way that participants have immediate access to resources and services, exchange them and interact efficiently both with each other and with the instructor. The term *e-learning* was used for the first time in 1999 during a CBT Systems seminar in Los Angeles to qualify a method of

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learning where new technologies are used enabling individualized online training through the Internet to develop skills anywhere anytime (Karmakar & Nath, 2014). However, there is no unified definition of e-learning yet, that would be accepted by the majority of specialists. As for Russia, such a situation is fraught with the concept of *distance education* which has been used for 20 years and is often regarded as an equivalent of e-learning, where distance learning is a wider or a narrower concept.

The Federal Law on Education in the Russian Federation (Federal Law on Education of 2012, 2012) became the foundation for formatting the reformed education legislation in conformity with the social and economic environment of the XXI century, and the obligations assumed by Russia in the process of integrating into the European educational space, particularly by joining the Bologna process.

According to the Law, for implementing educational programs it is permissible to use distance learning and e-learning, as well as online networking of educational organizations (persons acquiring education may assimilate educational curricula with the use of resources of several educational organizations). Article 16 defines the concepts of *Electronic learning (e-learning)* and *Distance learning techniques* and grants educational organizations the right to use these methods while providing education. E-Learning is understood to mean arranging educational activity with the use of information contained in databases and used while realizing educational programs and also informational technologies guaranteeing its processing, technical means and data telecommunications networks, transferring the indicated information along communication lines, interaction of students and instructors. Distance learning techniques are learning techniques implemented mainly with the use of information and telecommunication nets under indirect interaction of students and instructors (Federal Law on Education of 2012, 2012).

Considerable experience of worldwide *e-learning* implementation practices as well as the cases of a number of universities in Russia, such as Russian State University for the Humanities, Moscow Institute for Physics and Technology, The Higher School of economics, etc. allow to claim that e-learning implementation and promotion contributes to improving the quality of education and its accessibility. The following advantages e-Learning are also practically assured: automation of learning process; permanent access to learning materials and statistics; constant monitoring of the progress and learning outcomes; asynchronous learning; optimization of time and physical expenses of the participants of teaching/learning process, higher performance of education; the access to higher education for people who are not able to attend traditional classes, such as disabled people, new mothers, professionals who need to improve their professional skills or form new competences at workplaces (Bondarev et al., 2014).

2.4. Blended learning and mobile learning

According to our experience, the most popular varieties of e-learning implementation in modern higher education environment are blended learning and mobile learning. Blended learning is the process of learning where students gain knowledge partially in an administrated educational institution and partially online with some proportion of supervision over their rate and learning path (Staker & Horn, 2013). Mobile learning (m-learning) is defined as learning across context by means of mobile technology. It allows people to learn using portable devices without restriction of location (Lam, Yau, & Cheung, 2010).

Mobile learning is considered to be a logical extension of e-learning which has the potential to outspread onwards and enable learning to be available everywhere in any time convenient for a learner

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(Winters, 2007). Apart from this, e-learning/blended learning implementation using mobile technology has a variety of advantages such as:

- a quick access to the learning content, a possibility to participate in the learning process 24/7, the use of familiar by experience everyday electronic devices and virtual environment – the factors that help sustain students' motivation;
- the cost effectiveness of education concerning the fact that there is no need for desktop computers and software, expensive interactive equipment as well as textbooks and other printed materials due to BYOD (bring your own device) policy where students are allowed and encouraged to use their personal mobile devices such as smartphones, tablets, and laptops to access education data and systems;
- a variety of technological solutions of classroom management (wireless communication technologies: 3G, LTE, Bluetooth, Wi-Fi; cloud-based applications and services, educational social networks, adaptive learning extensions, etc.).

For the last decade, the implementation of an e-learning strategy at higher education institutions has been a common practice in the Russian Federation. Moreover, a number of federal projects by the Ministry of Education and Science such as *Modern digital educational environment in the Russian Federation* have been launched.

Following this trend, an ESP (English for Specific Purposes) blended learning practice using BYOD and m-learning elements has been successfully adopted at Southern Federal University. The effectiveness of the suggested solution is ensured by using a Flipped Classroom model (Staker & Horn, 2013) in which within a given course, students having a fixed schedule are able to interact face-to-face with a teacher at university and gain material and instructions of the same subject online as well. In our case, the online content delivery and interaction is carried out on the basis of a Smart Coursebook (Bakulev, Bondarev, Zablotskaya, & Opryshko, 2016). The Smart Coursebook can be represented as a set of virtual class/group services on the basis of edmodo.com or another platform (classroom.google.com, teams.microsoft.com, etc.) including training modules embedded with authentic multimodal factual materials (as external resources) and a system of exercises. In addition, the Smart Coursebook integrates social media, useful services and applications, such as online word processor/spreadsheet applications and presentation tools (Microsoft Office 365, Google docs/sheets/forms, present.me, www.prezi.com, etc.), online video conferencing tools (Skype, Google hangouts, etc.), video and audio extensions and services (YouTube, Periscope, Apple and Google podcasts, etc.). Such a coursebook makes it possible to work with the most relevant and up-to-date content including the one uploaded by students, to provide online consultations on demand, hands-on exercises, project work, peer assessment, quizzes and tests.

Experience has proven that the ESP blended learning course using m-learning elements within a BYOD environment based on the Smart Coursebook favours self-study and effective development of students' English language proficiency including listening, speaking, reading and writing skills.

3. Research Questions

- What is the place of e-learning in modern education and what are the main opportunities of it?
- Do students need special skills to gain knowledge efficiently by means of e-learning?

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- What conditions and devices should be provided to implement e-learning in the process of education?

4. Purpose of the Study

The purpose of the study is to analyze the viewpoints of students attending institutions of higher education at e-learning and their readiness to take part in it; to study the current situation in the sphere of e-learning, and to define its place in the modern education from the point of view of students.

5. Research Methods

In the process of study we analyzed world teaching experience in formal and non-formal education, e-learning and blended-learning; systemized; surveyed Russian students' subjective points of view on the use of modern information technologies in their educational process. We have conducted the questionnaire among Russian students to find out their attitude towards e-learning. Upward of 800 students from 17 Universities of Russian Federation took the survey.

6. Findings

6.1. E-learning in modern education: its place and opportunities

More than half of students surveyed find e-learning promising and future-oriented. The reasons are different: 83% of respondents prioritize the possibility to choose individually the appropriate time for learning over other advantages of e-learning, 68% put first the possibility to study outside the walls of university, 57% value the opportunity to get additional education, and 41% appreciate the chance to expand knowledge sources (Figure 01). Also, 80% of respondents consider the specific character of the discipline "Foreign language / Foreign Language for specific purposes" (necessity of listening to audio, watching video, reading actual text materials etc.) an adequate basis for using e-learning while realizing the course. Moreover, 33% of students think that 40-50% of time of educational process should be in electronic form and 23% of respondents consider more than 50% of time necessary for e-learning.

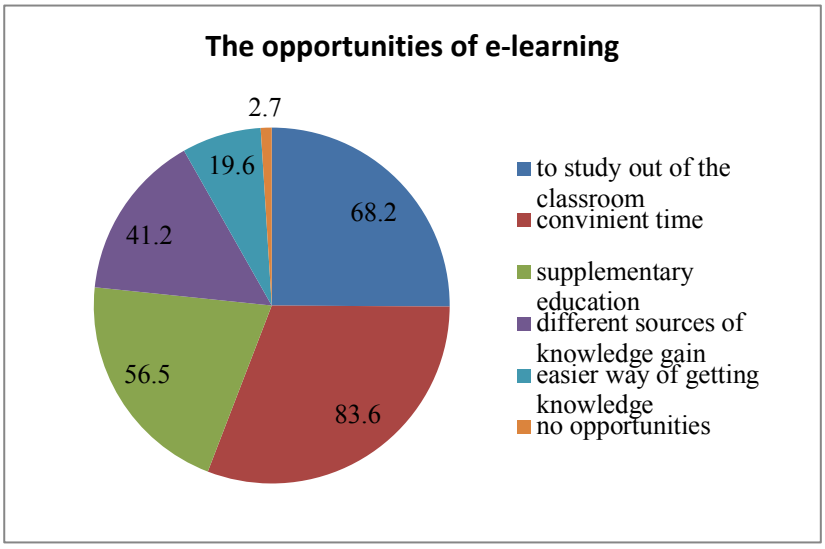

Figure 01. E-learning opportunities

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6.2. Do students need special skills to gain knowledge efficiently by means of e-learning?

Almost 60% of students consider it necessary to gain special skills while taking part in educational process by means of e-learning (Figure 02).

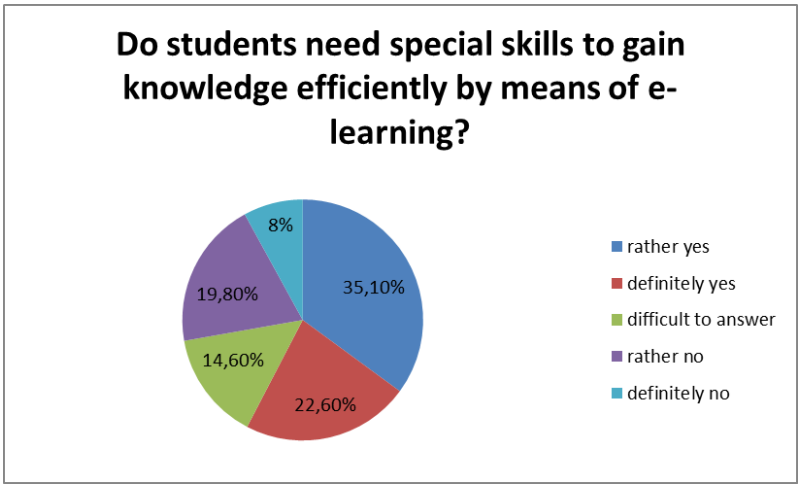

Figure 02. Necessity of special skills for e-learning

6.3. Conditions and devices necessary to implement e-learning in the process of education

75% of the surveyed would prefer to use their own portable devices instead of university's desktop computers, as long as regular broadband Internet is provided throughout the entire territory (Figure 03). Along with that students mark some other indispensable conditions of successful implementation of e-learning at university: accessibility of course content 24/7 (69%); opportunity to form a personal trajectory of studying (43%); cross-platform access to course content with the help of devices functioning on various operating systems: Windows, MacOs, Android, iOS etc., and cross-browser access to course content with the help of different browsers: Edge, Chrome, Safari, Mozilla Firefox etc. (58%); use of actual course content of various modality – video, audio, text, infographics etc. (60%).

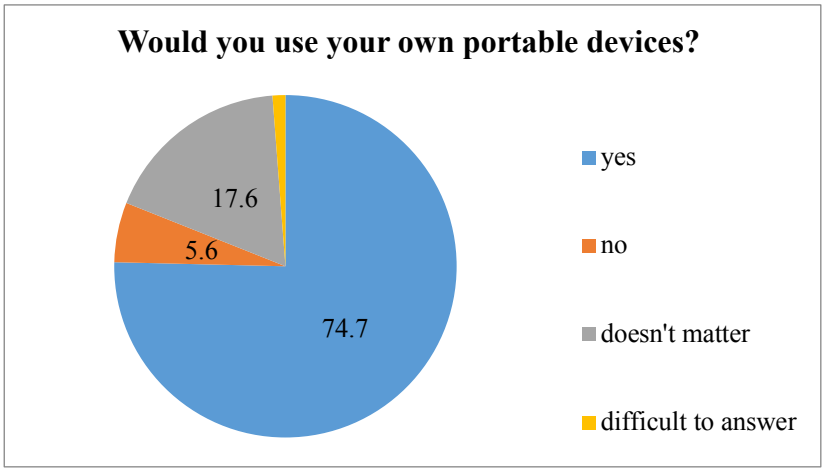

Figure 03. Usage of students' own portable devices

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7. Conclusion

On the ground of the survey result analysis the following conclusions could be made. Effective implementation of all-round e-learning will be possible on condition that students' opposition is reduced which is possible in case of well-structured education. It is essential to take into account needs and peculiarities of students belonging to digital natives' generation. Despite the fact that most students are ready for e-learning and appreciate its multiple advantages there still exists the need – as is clear from our survey – of precursory forming of special skills.

Most students would prefer to use their own portative devices for studying – it corresponds with the concept BYOD. To implement this, it is necessary to provide permanent technical support (regular broadband Internet, cross-platform and cross-browser access) and also good methodical support.

We are positive that the information got from preliminary analysis of basic members' of education operations attitude towards supposed changes, connected with e-learning implementation, can be used for smoothing the opposition in relation to changes. If taken into account, these changes can be controlled and the opposition can be effectively negotiated.

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