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IT TOOLS IN A UNIVERSITY – E-LEARNING ENVIRONMENT: STUDENTS' OPINION SURVEY

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Abstract: *This article presents a diagnostic instrument and data analysis results within the European IRNet Project, Work Package 3. One of the aims of the survey was to analyze the benefits of a modern university e-learning environment, students' opinion about an e-learning environment and its IT tools. The data cannot only be the basis of determining the degree of students' activity in a university e-learning environment, but can also help to identify ways to improve a university electronic environment. The paper includes results of the research carried out at several partner universities - Herzen State Pedagogical University of Russia, St. Petersburg (HSPU), The University of Silesia in Katowice (US), Poland, Borys Grinchenko Kyiv University (BGKU) and Constantine the Philosopher University in Nitra (UKF), Slovakia.*

Keywords: e-learning environment, students, university, IT tools, survey

INTRODUCTION

One of the common features of modern education in different areas of training is the presence of positions that define the ability to apply e-learning and distance learning

technologies in the educational process (Gutierrez-Esteban, Alonso-Diaz, Smyrnova-Trybulska, Capay, Ogrodzka-Mazur, Pinto, Noskova, Gajdzica, Pavlova, Yakovleva, 2015). This is true not only when the problems are solved, related to the provision of educational services in the remote form and training of students with disabilities. An important aspect of a university graduate is the ability to work in a professional environment with a variety of available information resources and networking opportunities. Information and communication technologies are considered today as natural tools for education and professional activities; they quickly progress and are widely used by young generations in different areas of their activities (Morze, Spivak, Smyrnova-Trybulska, 2014).

Contemporary educational standards specify the goals and results of training, including a wide range of graduate and professional competence and objectives that a student should be ready to achieve (Kommers, Smyrnova-Trybulska, Morze, Noskova, Pavlova, Yakovleva, 2014). Regardless of the professional activities students are expected to implement, information and communication technologies have a high potential to achieve educational outcomes, improve the efficiency of network forms of educational process organization (Noskova, Pavlova, 2012). To realize this potential, it is necessary to form a system of targeted information and communication educational opportunities, taking into account the benefits of modern information environment.

It is important to analyze and systematize the main benefits of e-learning environment that can be used by students during training. Such benefits can be evaluated from different perspectives: improvement of educational services quality, formation and development of competencies for the knowledge society, formation of graduates' competitiveness. It is important that the achievement of educational outcomes should be possible on condition of the strategic use of IT tools by students in a university electronic environment.

1.   UNIVERSITY E-LEARNING ENVIRONMENT - THE MODERN REQUIREMENTS

An electronic environment of a modern university should create opportunities for the development of the 21st century competencies, for the implementation of a lifelong learning strategy. In this paper we analyze the data obtained at several universities – the participants of the IRNet project: Herzen State Pedagogical University of Russia, St. Petersburg (HSPU), The University of Silesia in Katowice (US), Borys Grinchenko Kyiv University (BGKU) and Constantine the Philosopher University in Nitra (UKF), Slovakia.

Each university provided at least 100 respondents – students of all stages education (bachelor degree students and master degree students).

In order to identify the ways students use IT tools in their universities' e-learning environments and to outline possible ways for improving educational interactions in a network learning community, the data, obtained in the framework of Work Package 3 of the IRNet project (http://www.irnet.us.edu.pl) was analyzed. One of the aims of the survey was to determine if students understand the opportunities and educational benefits of e-learning environment: expansion of space-time coordinates, personalization of educational activities, individual request, increase of the degree of educational openness. The data cannot be only the basis of determining the readiness of students for self-guided work and activity in e-learning environment, but can also help to identify ways to improve a university electronic environment.

It is important to mention that the WP3 of the IRNet project was dedicated to the analyses and evaluation of the ICT level, e-learning and intercultural developments in every participating country and to the elaboration of the conceptual framework for a joint research project based on lasting collaboration with the project participants. It was assumed that participants of e-learning environment (academic teachers, students, administration) are involved in activities with the following benefits:

- increase of scientific and educational process comfort, focus on lifelong learning goals;

- personalization of educational activities, individual request of e-learning;

- formation of new scientific and educational relations, cooperation, intercultural competence;

- empowerment and self-realization in educational and professional activities, support of initiatives;

- increase of the openness degree of scientific and educational environment, expanding the influence of the university to external cultural environment; positioning of the actors in the research and education community;

- enhancing self-organizational effects that support sustainable development of the educational environment of the university and its participants.

The whole vision of e-learning environment is presented in Figure 1.

In the rest of the paper, we will pay particular attention to the following benefits: increase of scientific and educational process comfort, focus on lifelong learning goals; personalization of educational activities, individual request of e-learning; increase of the openness degree of scientific and educational environment; expanding the influence of the university to external cultural environment.
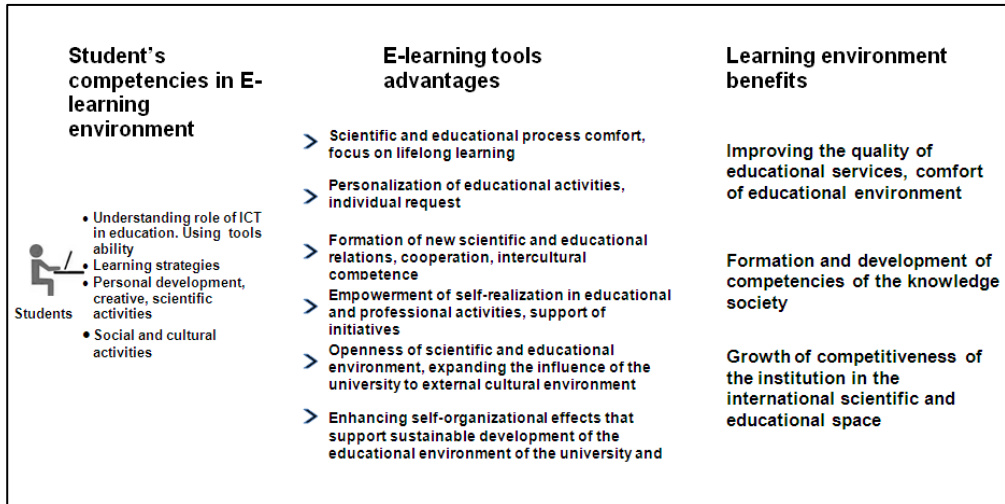
**Figure 1. E-learning environment: IT tools, students'
competences and learning benefits.**

Source: Own work

2. E-LEARNING ENVIRONMENT OF A UNIVERSITY AND TRAINING FOR THE 21ST CENTURY FROM THE STUDENTS' PERSPECTIVE

2.1. Benefit 1: increase of scientific and educational process comfort, focus on lifelong learning goals

Traditionally, one of the main benefits of IT tools and e-learning implementation in an educational institution is the expansion of space-time coordinates, increase of scientific and educational process comfort, and focus on lifelong learning goals. Nevertheless, in the aspect of the problem under discussion, it is important to emphasize that a variety of IT tools allow not only for learning in a comfortable mode and showing a greater extent of educational activity and independence. A new task of education is to focus on lifelong learning goals, which involve a possibility of fulfilling own potential for people of all ages, regardless of place and time, using all possible ways and means of interaction. To achieve this goal in a learning period, a student as a future specialist needs an understanding and willingness to take advantage of IT tools for educational solutions and further professional tasks with a focus on an individual information and communication request.

Table 1 shows how students understand the role of IT tools and use their opportunities when studying to expand space-time coordinates of learning.

Table 1.

Expansion of space-time coordinates of learning

For what purpose do you use the electronic environment of your University (electronic library, distance learning platform Moodle, e-courses, university website, scientific databases of university subscriptions, etc.)? (single choice)				
	HSPU	US	BGKU	UKF
I use it only if it is required by a teacher	49.2%	48%	59%	28.2%
I use it as it makes it easier to perform the tasks	43.5%	47%	36%	67.1%
I don't use it, as I don't understand the rules and its usefulness	0.8%	3%	7%	2.9%
I don't use it at all, as I find other alternative Internet resources (for example, Mass Open Online Courses, etc.)	6.5%	2%	9,4%	1.8%

Choose two main reasons for your using, more actively, the electronic environment of your University (electronic library, distance-learning platform Moodle, e-courses, the university website, scientific databases of university subscriptions, etc.) (multiple choice)				
	HSPU	US	BGKU	UKF
getting acquainted with the possibilities and usage rules	33.1%	19%	32.5%	21.5%
having an opportunity to perform tasks at own pace, anytime and anywhere	79%	23%	73.5%	83.5%
finding more diverse electronic resources	47.6%	51%	43.6%	72.6%

Choose the most important, from your point of view, indicators of comfort of the electronic environment of the University. (multiple choice)				
	HSPU	US (single choice question)	BGKU	UKF
Availability of Wi-Fi access points	79%	47%	88%	20.9%

Opportunity to use one's own gadgets	47.6%	10%	64.1%	17.9%
Availability of electronic educational resources in different formats (video, audio, hypertext, etc.),	31.5%	11%	30.8%	15.9%
University website with the relevant information for students and comfortable navigation,	42.7%	16%	47%	20.6%
Availability of distance support for disciplines (tasks in electronic form, electronic journal, discipline's website or Moodle)	44.4%	8%	52.1%	11.5%
Availability of a fast feedback from a teacher	49.2%	8%	51.3%	13.2%

Source: Own work

As far as the expansion of space-time coordinates of learning is concerned; firstly, it is important to understand the purpose of e-learning environment use and its IT tools. In particular, the use of environmental resources such as an e-library, a distance learning platform (e.g., Moodle), e-courses, university website, scientific database in university subscription. Students' degree of e-learning environment use is an indicator of their understanding of the possibilities and the role of such environment in their educational routes, as well as application possibilities in the teaching environment. There may be different levels of using IT tools of e-learning environment: use only on teachers' instructions (this may be typical for students of initial training courses), independent use due to the understanding that it facilitates the performance of tasks, as well as providing greater opportunities for self-education and the development of professional competencies. An important feature of e-learning environment is the access to its resources, the opportunity to perform tasks at own pace, anytime, anywhere. This fully corresponds to the modern information behavior of young people. We also have to mention that the level of using e-learning environment depends on the number of used environments at the university. It is common that at many universities multiple environments, tools and systems are used, so some users can easily get lost and thus they use only tools required by a teacher. There are also other problems that we have to mention. Many students use the e-learning environment just for downloading study materials (Costa, Alvelos, & Teixeira, 2012; Mozhaeva, Feshchenko, & Kulikov,

2014) and the education staff has low IT competencies (Barberan, Gutierrez, & León, 2013).

However, students might not use e-learning environment and its IT tools of their educational institution, as they do not understand the rules and the feasibility of its use. In this case, it is important to note the need to familiarize students with the possibilities, rules and resources. Therefore, teachers need to offer assignments that will motivate students to use these opportunities and to be acquainted with them. There is another option: students do not use e-learning environment of their educational institutions, as there are other alternative Internet resources (educational portals, websites, massive open online courses - MOOCs, etc.) (Smyrnova-Trybulska, Morze, Varchenko-Tritzenko, 2015). In this case, it can be assumed that the particular environment does not fully comply with students' information and educational needs (Yakovleva, 2013). Consequently, changes are required in the university e-learning environment.

What are the most important indicators of e-learning environment comfort and attractiveness for students? The most important indicators are the following: Wi-Fi access points; the possibility to use own gadgets; the availability of electronic educational resources in various formats (video, audio, hypertext, etc.); university website with relevant information for students and convenient navigation; the availability of remote learning support (tasks in electronic form, electronic score list, e-course on the Moodle platform) (Smyrnova-Trybulska, 2014); the possibility of a rapid feedback from teachers (Noskova T., Yakovleva O., Pavlova T., Morze N., Drlik M. 2014). It is obvious that the presence of these indicators makes the environment comfortable not only to solve educational problems, but also to meet the challenges of self-development, self-realization, research and scientific activities.

2.2.   Benefit 2: Personalization of educational activities, individual requests in e-learning

The second benefit of an e-learning environment and IT tools is the implementation of individual request and learner preferences, based on the characteristics of interests, social interactions, learning context and individual requirements. The primary means of achieving this advantage is the ability to select the types of information and educational activities, electronic resources, and participants for interactions. Accordingly, these possibilities should be considered when designing an e-learning environment. Among them, the use of adaptive hypermedia and interactive, formation of new and different scientific and educational ties and relations that address the educational task in cooperation in a corporate environment, and not limited to the scope of the university, and the improvement of cross-cultural competence (Smyrnova-Trybulska E, Ogrodzka-Mazur E., Gajdzica A., Noskova T., Pavlova T., Yakovleva O., Morze N., Kommers P., Sekret I., 2014:). Networking, distributed command work, which has become common type of professional activities in many areas require special aspects of

training. While studying in a university students have the opportunity to try themselves in different roles, typical for a promising professional activity, to understand their strengths and challenges. Such training becomes possible by means of IT tools and e-learning technologies. The data in Table 2 shows how students recognize the importance these opportunities for learning, self-development, self-realization, research and scientific activities.

Table 2.
Personalization of educational activities, individual request in e-learning.

Should teachers consider students' educational requests, their interests and needs while creating electronic resources in educational environment (presentations, websites, tests, video lectures, etc.)? (single choice)

	HSPU	US	BGKU	UKF
No, they should not - I can use the resources in accordance with my needs	42.7%	17%	29.9%	11.8%
Yes, they should provide resources, adapted to my individual needs	57.3%	83%	70.1%	88.2%

What additional electronic educational services would you like to receive at your university? (multiple choice)

	HSPU	US (single choice question).	BGKU	UKF
Studying foreign languages,	62.1%	44,00%	65%	57.9%
Acquiring an additional profession,	51.6%	36,00%	58.1%	49.7%
Learning about start-ups and own business	25.8%	20,00%	45.3%	30.6%
Other	3.2%	-	0.9%	4.7%

Source: Own work

Among "other" additional electronic educational services students named additional knowledge and skills for future profession, additional knowledge and skills according to personal interests.

There is a question that is difficult to answer unequivocally: to what extent should teachers take into account the information and educational needs of students, their interests, needs to create electronic educational resources (presentations, websites, tests, videos, lectures, etc.). On the one hand, students can use the proposed resources in accordance with their needs. On the other hand, teachers have to take into account the information and educational needs of students, their interests, and provide resources adapted to individual request, especially when it comes to inclusive education. It is important to note that the modern e-learning environment allows variation of electronic resources. Furthermore, additional electronic educational services can be provided in such environment. For example, the study of foreign languages, additional profession, business start-ups, etc. Obtaining additional educational services ensures the readiness of the graduates for professional careers in the dynamically changing conditions.

2.3.   Benefit 3: Increase of the openness degree of scientific and educational environment. Expanding the influence of the university to external cultural environment.

E-learning environment IT tools allow for enriching the educational process with visual representation of educational results, scientific, university artistic and sports activities and achievements of particular students. Thus, students have the opportunity to presentthemselves and their achievements to others: potential employers, teachers, students, prospective students, social partners of the educational institution. Because the presentation of achievements improves students' status, the circles of acquaintances and interactions are expanding. Possession of means and methods of the presentation of professional activity results today is an important competence for a representative of any professional field. By offering students, at the initial stages, assignments aimed at presentation of educational activity results in an e-learning environment, the preconditions for the formation of such competence are created.

Table 3 shows the opportunities for increasing the openness degree of scientific and educational environment and expanding the influence of the university to external cultural environment.

Table 3.
Increasing the openness degree of scientific and educational environment and expanding the influence of the university to external cultural environment

Choose what elements of the university electronic environment can influence your choice to study in it. (multiple choice)			
	HSPU	US (single choice question)	BGKU	UKF

Massive online courses, provided by the university	16.1%	22,00%	24.8%	43.2%
An attractive university website with a user-friendly interface and up-to-date information	38.7%	13,00%	56.4%	54.1%
Own university social network	23.4%	6,00%	21.4%	26.8%
A clear presentation of the university teachers' achievements on the web-site (awards, publications, etc.)	33.1%	9,00%	29.9%	30.6%
A clear presentation of students' achievements on the web-site (awards, publications, etc.)	18.5%	12,00%	17.9%	31.8%
Information about successful university graduates and their achievements	40.3%	16,00%	17.1%	37.9%
Collaboration of the university with schools, kindergartens, educational centers, etc.	28.2%	9,00%	27.4%	47.1%
Participation of the university in social activities and cultural life (volunteering, charity concerts, exhibitions, etc.)	54.8%	13,00%	47%	32.4%

Choose which informational resources you use most often when doing assignments, doing research, preparing reports, etc. (multiple choice)				
	HSPU	US	BGKU	UKF
Search engines (Google, Yandex, etc.) - Search by keywords	95.2%	45%	93.2%	90.0%
Printed publications (books, journals, guidelines, etc.)	51.6%	16%	50.4%	51.5%

Electronic scientific databases from your university library subscription (databases of electronic journals, full-text electronic resources, etc.)	23.4%	14%	32.5%	31.2%
Digital libraries in the Internet	48.4%	10%	69.2%	44.1%
Open storages of electronic educational resources (institutional repository, WIKI)	21.8%	5%	45.3%	35.3%
Video channels (YouTube)	24.2%	6%	35%	40.0%
File sharing, torrents	14.5%	4%	33.3%	15.6%
Webinars, podcasts	5.6%		10.3%	4.7%

Source: Own work

The findings show that students perceive as meaningful the following attributes of e-learning environment: massive online courses provided by university; attractive university website; university social network; presentation of teachers' and students' achievements (awards, grants, publications, etc.); information on successful university graduates and social partners (cooperation of a university of with schools and educational centers); university participation in social events and cultural life (volunteering, charity concerts, exhibitions, etc.). Students see these attributes as a potential opportunity for themselves to show their activity, attitudes and abilities. The data shows that students actively use external information resources and less actively are turning to university resources. This allows us to specifically recommend that students should be familiarized with these opportunities offered by each university participating in the IRNet project.

CONCLUSION

Students can effectively use the benefits of IT tools and e-learning environment, thereby achieving the purpose of improving the quality of education, formation and development of professional competencies, formation of competitiveness in the labor market. These benefits are fully compliant with the emerging knowledge society, the ideas of lifelong learning. For a more complex and comprehensive results, research in the WP3 "Analyses and evaluation of the level of ICT, e-learning and intercultural Developments in every Participating countries" also took place among academics and the results will be presented in subsequent publications.

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