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STUDY OF KHERSON STATE UNIVERSITY STUDENTS AND TEACHERS' ATTITUDES TO THE USING OF ICT

Abstract. The article aims to explore lecturers and students' requirements towards the ICT use in higher education institutions, to identify their problems in the ICT use in teaching, communication and research. Using a questionnaire we investigate the reliability of electronic educational sources, the kind of access to course learning materials, the ICT use in lectures, practical classes, individual work, consultations and control. The results of the survey showed that there is a mismatch between students' need to have blended learning and lecturers' ability to satisfy it. The lecturers and students assessed the overall ICT impact on the learning process. We found out that the lecturers believe that the educational process with ICT facilities becomes more complicated. For them it requires more digital skills, much time to create and maintain the blended courses. But students believe that ICT enhances learning, making it easy and more interesting. Thus involving students in education is considered now as providing them with convenient open access to learning materials. Their learning should easily combine traditional and digital technologies. The main problems of the ICT use in teaching are reviewed and ranged. The most common barriers are related to the lack of technical skills, lack of time, and perceived risks (intellectual property, loss of privacy, plagiarism). But besides personal barriers there are organizational and infrastructure ones. Education is changed greatly with the ICT use both in teaching and learning. To provide a new educational environment, university teachers should master necessary digital skills, establish international scientific and educational collaboration, combine face-to-face learning with e-learning (create blended courses, interactive learning systems etc.).

Keywords: blended learning; ICTs use in teaching; barriers for using ICTs.

1. INTRODUCTION

The problem setting. Each side of society's life commonly changes and the speed of these changes has increased rapidly with wide use of information and communication technologies. But what is happening to education? It is understood to be the basis for society development. Thus, within today's impetuous changes in society, the education is organized to provide necessary key competences. The European reference framework of key competences for lifelong learning defined eight key competences, they are:
- ✓ Communication in the mother tongue;
- ✓ Communication in foreign languages;
- ✓ Mathematical competence and basic competences in science and technology;
- ✓ Digital competence;
- ✓ Learning to learn;
- ✓ Social and civic competences;

✓ Sense of initiative and entrepreneurship; and

✓ •Cultural awareness and expression [5].

Therefore, Ukrainian higher education has moved with the international trend towards the formation and development of students' key competencies. In this difficult process ICT are helpful because of their positive influence on the students' learning results as well as on the teaching methods and techniques. Moreover they are both the aim (digital competence) and the tool. This fact gave impetus to the search for new priorities in education with ICT.

Increasing their impact on education ICT become an agent of changes in conceptual, structural and organizational framework of education. Therefore the need to improve the quality of higher education requires the development of new teaching strategies and tactics in universities.

The transformation of the educational process requires the review of approaches to lecturers' work because they provide this process. But first of all we should overcome a common simplified notion of teaching as a skill to provide educational activities. The neglect of the research component in the structure of lecturer's professional activity leads to sharp decrease in teaching efficiency.

The teachers' main functional responsibility is to provide qualitative education within his or her scientific and educational work. A modern lecturer is required to establish an effective information support for students' learning.

The analysis of recent studies and publications. According to scientific literature review, ICT can empower lecturers and students, providing the special learning environment that addresses different learning styles and optimizes key skills development. We totally agree with J. Spurlin that "...technology interacts with many variables: student preparation and motivation, how the student or instructor uses technology, and how well the environment supports learning....Instead of asking what impact technology has on student learning, ask how you can incorporate the best-known principles about teaching and learning, using technology as a tool for innovation" [10]. According to the studies of the ICT impact on education, they should not be seen as the focus of the learning process [4; 8] and pedagogy must be put ahead of ICTs [2; 7].

One of the main problems indicated by A. Balanskat is that "factors that impede the successful implementation of ICT in teaching [include] … teachers' poor ICT competence, low motivation and lack of confidence in using new technologies in teaching [which] are significant determinants of their levels of engagement in ICT [and reveal that such] teachers' practice is not changing much when they use ICT" [4]. It relates to university lecturers too.

In Ukraine the study conducted by A. Spivakovsky et al. [9] stated the transformation of the modern didactic model into three-subject one (Student - Teacher - Information and communication pedagogical environment). Within such a new model the learning process is being improved in accordance with students' educational needs through the integration of traditional teaching forms, open educational resources and e-learning.

The combination of traditional and e-learning is termed as "Blended learning". It is considered as classroom learning that is supplemented with the use of ICTs such as web-based courses and other online technologies. According to J. Underwood "classes with online learning, whether completely online or blended, on average produce stronger learning outcomes than learning face-to-face alone" [11].

But providing blended learning means transforming lecturer's teaching and emphasizing the importance of his or her professional development in online teaching [6]. Furthermore, the transformation of traditional courses into blended ones requires more time and digital skills than developing traditional teaching because of the necessity of redesigning the course with ICT [1].

We can conclude that the ICT use in education is necessary and requires lecturers'

professional development for making information always available online, developing digital content and moderating blended learning.

The **aim of the article** is to investigate lecturers and students' attitudes to the ICT use in higher education institutions.

2. RESEARCH METHODS

This study aims to explore Ukrainian lecturers and students' attitudes to the ICT use in education, to identify the problems of the ICT use in teaching, communication and research. We used theoretical and qualitative methods to facilitate the exploration of the problem. Theoretical methods are critical analysis of scientific literature, the synthesis of scientific data. Qualitative methods are observation, conversation and questionnaires.

The main research questions of this study are:

1. What are lecturers and students' attitudes to the ICT use in education?

2. How is the educational process changing with ICT facilities?

3. What are the barriers that prevent lecturers from using ICT?

The participants of the research are 124 students and 52 lecturers of Kherson State University.

3. THE RESULTS AND DISCUSSION

To find out lecturers and students' attitudes to the ICT use in education we used a questionnaire that consisted of 6 questions. It helped us to investigate the reliability of electronic sources, the kind of access to course learning materials, the ICT use in lectures, practical classes, individual work, consultations and control.

The results of the study showed that 28% of the lecturers consider electronic sources to be unreliable and only 7% of the students agree with them, 62% of the lecturers and 42% of the students believe them to be partially reliable. Only 10% of the lecturers and 51% of the students think that open electronic sources are fully reliable and scientifically proven. The results of the survey are presented in Figure 1.
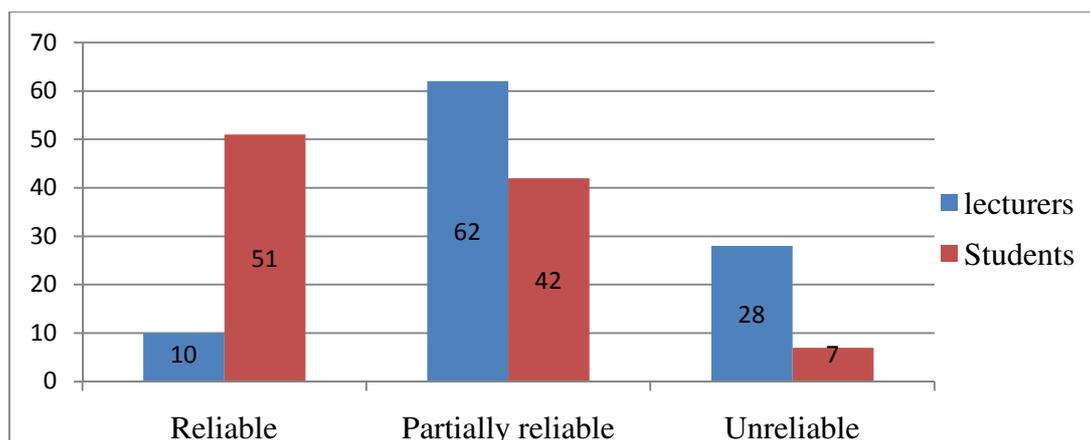

Figure 1. The reliability of open learning sources

The analysis of the lecturers and students' responses showed that they actively use open learning sources. Most lecturers believe that only famous scientists' reports or digital copies of printed materials are reliable. A significant number of the students (51%) completely trust electronic sources, and others are more critical to such information. Therefore, to attract students to use open learning sources a lecturer should provide them with the

recommendations on processing this type of information and special tasks for developing their critical and analytical thinking.

Lecturers' responses showed that 68% of them prefer printed materials, and 32% provide permanent public access to learning materials on the Internet. On the contrary 26% of the students prefer paper publications, and the majority – 74% – need free access to the Internet. The overall results are presented in Figure 2.
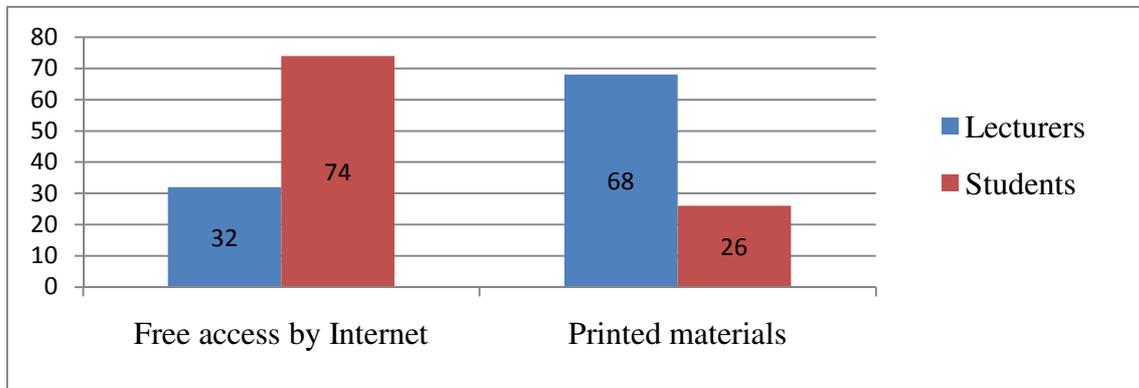

Figure 2. The access to course learning materials

The obtained results made us sure that both the lecturers and the students are interested in ensuring public access to the course guideline materials. However the majority of the lecturers (68%) provide access through printed materials, explaining it by the lack of appropriate digital skills, whereas 74% of the students prefer electronic access as more convenient. Therefore, a modern university lecturer should provide the most convenient access to learning materials on the Internet.

The information support of lectures was assessed in terms of students' access to lecture materials (full text, slides or lecture subject and plan). According to the survey, 3% of university teachers provide free access to lectures, 18% –to slides, and 79% of them give only the subject and plan. The students expressed their desire to have access to lecture materials: 23% - to the lecture subject and plan, 26%- to full text, and 51% - to slides (Figure 3).
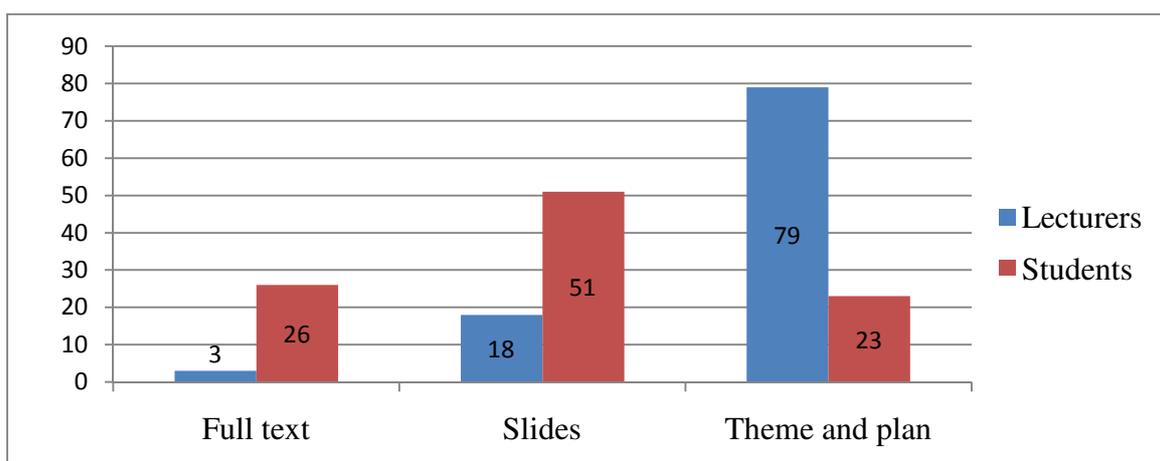

Figure 3. Information support of lectures

According to the obtained results, 51% of the students are interested in getting access to the lecture slides that help them to generalize and systematize the theoretical material. But the majority of the lecturers (79%) provide students only with the lecture subject and the plan.

Unfortunately only 18% of the lecturers use slides and provide free Internet access to them.

The information support of practical classes was studied according to the performance of practical tasks by means of ICT, provision of free Internet access to the tasks. Based on lecturers' answers, 21% of them create such practical tasks for students that make them use ICT, 32 % of them provide free Internet access to the tasks. 47% of lecturers continue to use traditional methods and techniques for practical training organization with only printed materials. However, 8% of students are satisfied with the traditional methods for practice, 38% of them express their need to receive free Internet access to the tasks, and 54% of students are interested in using the ICT tools in practical tasks (Figure 4).
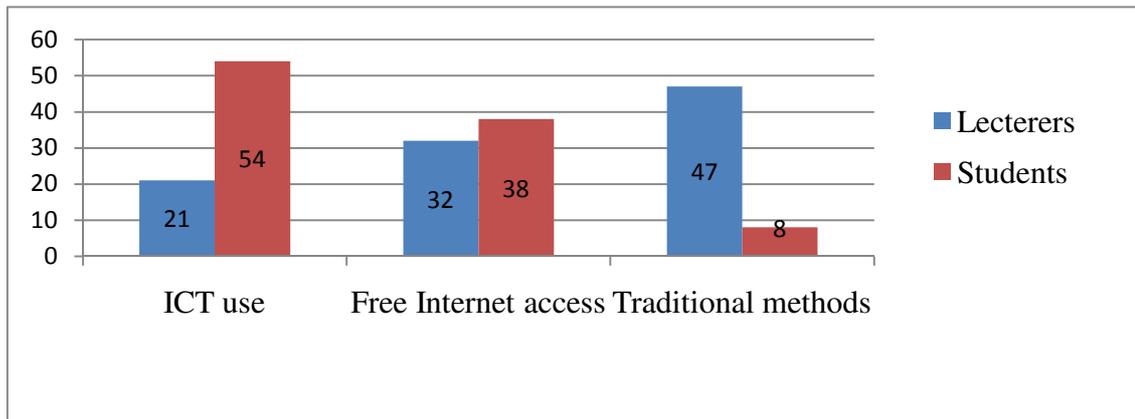

Figure 4. Information support of practical classes

The results of the survey show that a significant number of the lecturers (47%) organize and conduct practical classes using traditional methods and only 8% of the students consider it to be appropriate; the others are interested in free Internet access to practical tasks and using ICT in practice. 53% of the lecturers meet the students' specific needs.

The degree of the ICT use in ensuring students' individual work and consultations was defined in accordance with the following indicators: the use of online consultations, the obligatory ICT use within individual work, and the proportion of traditional methods. The lecturers' responses showed that 12% of them encourage the students to use ICT and networks within the consultations, 32% of them involve the ICT use in organization of students' individual work, and 56% of them still use traditional forms and methods in these types of learning activities. Consequently 47% of the students are interested in using the ICT within individual work, 32% of them want to have online consultations, and only 11% of the students do not require changes for traditional forms and methods in individual work and consultations (Figure 5).
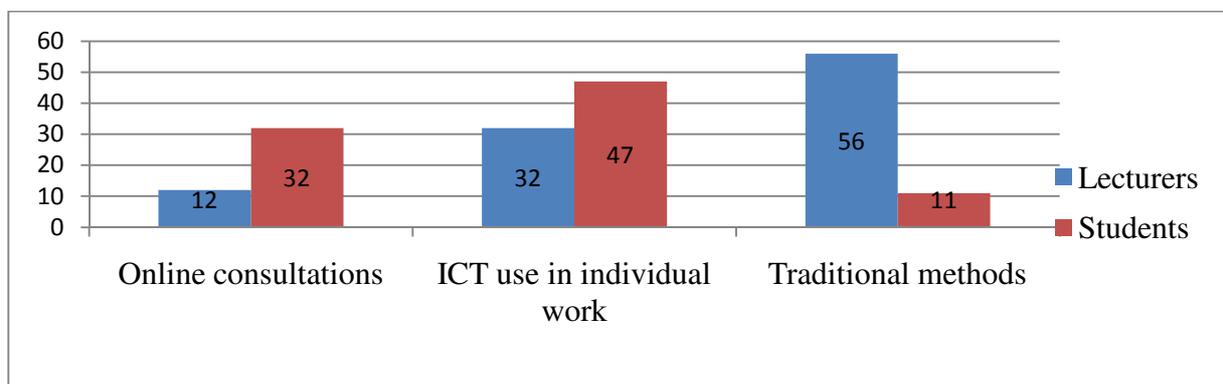

Figure 5. ICT in individual work and consultations

According to the obtained results in students' individual work and consultations organization, the majority of the lecturers (56%) use traditional methods and forms, 32% of the teachers attract students to ICT use in individual work, 12% of the teachers provide distant (not face-to-face) consultations via e-mail and other network communication tools (forum, chat etc.). 47% of the students are interested in online consultations, and 42%–in the ICT use in individual work.

According to the survey concerning evaluation of the control, the following data were received: 61% of lecturers use traditional control forms and methods, 32% of them provide free access to the tasks or questions; 7% of the students use computer test control; 16% of the students consider it appropriate to use traditional control, and 39% of them are interested in computer test control, 45% of them need to have access to control questions and tasks (Figure 6).
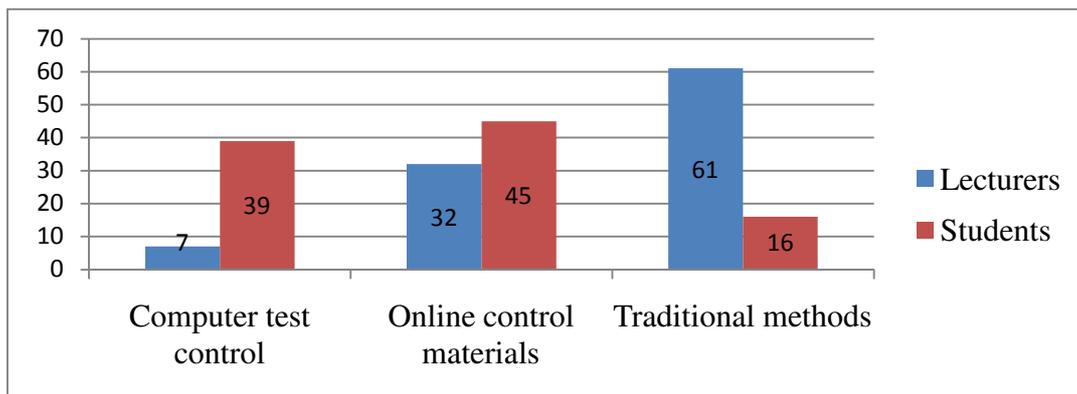

Figure 6. ICT support of the control

Analysing the survey results we saw a mismatch between students' need to have free Internet access to control materials, computer test control (84%) and lecturers' ability to provide it (39%). To our mind the best way to solve the problem could be the use of combined control form which mixes both traditional and digital methods.

In general we can conclude that lecturers' and students' attitudes to the ICT use in education are rather different. That is why involving students in education is considered now as providing them with convenient free access to learning materials and qualitative learning that easily combines traditional and digital technologies.

To study how the educational process is changing with ICT facilities we asked the lecturers and students to evaluate the overall ICT impact on learning. The results of the survey (Fig. 7) show that 64% of the lecturers and 21% of the students believe that it becomes more complicated. For lecturers it requires more digital skills, much time to create and maintain the blended courses. For the students the difficulties are low technical support and lack of digital skills. On the contrary, 13% of the lecturers and 67% of the students believe that ICT have enhanced learning, making it easy and more interesting. 23% of the teachers and 12% of the students believe that there is the transformation of traditional educational forms and methods into new ones that are merged with ICT.
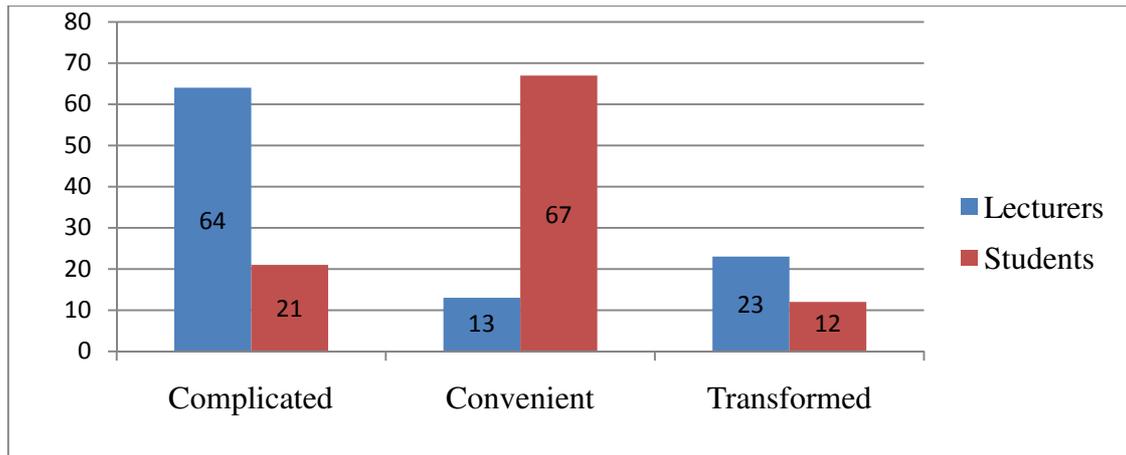
Figure 7. Learning process with ICT

As we have mentioned above in the process of making convenient and modern education the lecturers are like "moderators" among students' interactions with new learning environment. We paid attention to the lecturers' very low usage of ICT and their lack of readiness to provide blended courses. So, we aimed to study their barriers for the ICT use. Based on the results of a large scale research project conducted in Saudi Arabia [3], which investigates the barriers to Internet usage by lecturers, we asked Ukrainian university teachers to tick and range the main problems preventing them from using ICT in teaching, communication and research. The results are illustrated in Table 1.

Table 1

Lecturers' barriers for the ICT use

Level	Barrier	Rating
Individual	Language barriers	6
	Lack of technical skills	1
	Inadequate instructional design skills to effectively integrate Internet technologies in the curriculum	4
	Lack of time	2
	Perceived risks (intellectual property, loss of privacy, plagiarism)	3
Infrastructure	Connectivity, Availability of PCs/basic technology	5
	Filtering and blocking websites	7

The most common barriers are related to lack of technical skills, lack of time, and perceived risks (intellectual property, loss of privacy, plagiarism). There are some organizational factors, influencing the ICT use in teaching. They are reward and recognition, support in terms of training and fostering innovative environment, subscribing to academic research dbases, policies and planning, student connectivity and skills/training, technical support. We think that reward and recognition, technical support on organizational level could help to solve some problems on individual level.

4. Conclusions and prospects for further research

Students have the right to get convenient and qualitative education. To provide new educational environment, lecturers should master necessary digital skills, establish international scientific and educational collaboration, combined face-to-face learning with e-learning (create blended courses, interactive learning systems etc.).

The results of our study showed that there is a gap between students' need to have blended learning and lecturers' ability to satisfy it. The main problems of ICT acceptance by

lecturers are lack of technical skills, lack of time, and perceived risks (intellectual property, loss of privacy, plagiarism). But besides personal barriers there are organizational and infrastructure ones. Some of them are common in different countries. That is why international collaboration could help to find the best ways to solve these problems. We believe that Ukraine has prospects to reach the level of developed countries in the ICT use in universities.

The prospects for further research can be the main conditions for blended learning acceptance. They are the creation of powerful electronic information resources for educational and scientific purposes, raising the level of students' and lecturers' digital competence, improving organizational framework to integrate Internet technologies in the curriculum, providing security for intellectual property and copyright protection, adopting foreign positive practical experience.

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ДОСЛІДЖЕННЯ СТАВЛЕННЯ СТУДЕНТІВ І ВИКЛАДАЧІВ ХЕРСОНСЬКОГО ДЕРЖАВНОГО УНІВЕРСИТЕТУ ДО ЗАСТОСУВАННЯ ІКТ

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Анотація. У статті визначено ставлення викладачів та студентів до використання ІКТ у закладах вищої освіти, узагальнено проблеми використання ІКТ викладачами під час викладання, комунікації й наукового дослідження. За допомогою анкетування отримані результати щодо надійності електронних ресурсів навчання, доступу до матеріалів курсів, застосування ІКТ під час лекцій, практичних занять, індивідуальної роботи, консультацій і контролю. Результати дослідження довели наявність неузгодженості між потребою студентів у змішаному навчанні та готовністю викладачів до її задоволення. Крім того викладачі та студенти оцінили загальний вплив ІКТ на навчальний процес. Це дозволило нам з'ясувати, що викладачі вважають освітній процес з ІКТ складнішим, бо це вимагає додаткових інформаційних навичок, часу для створення та супроводу змішаних курсів. На думку студентів, ІКТ удосконалює навчання, полегшує його і робить цікавішим. Отже, аби залучити студентів до навчання, необхідно забезпечити їх зручним відкритим доступом до навчальних матеріалів і організувати якісне викладання, що легко комбінує традиційні та інформаційні технології. Основними проблемами активного застосування ІКТ викладачами є брак необхідних технічних навичок, часу і отримувані ризики (авторське право, втрата приватності, плагіат). Але, крім особистих бар'єрів, наявні також організаційні та інфраструктурні. Вплив ІКТ на викладання значно змінює як сам процес, так і роль викладачів і студентів у ньому. Для організації нового освітнього середовища викладачам доречно оволодіти необхідними інформаційними навичками, здійснювати міжнародне наукове та освітнє співробітництво, поєднувати традиційне навчання з дистанційним (створювати змішані курси, інтерактивні системи навчання тощо).

Ключові слова: змішане навчання; ІКТ у викладанні; бар'єри застосування ІКТ.

ИССЛЕДОВАНИЕ ОТНОШЕНИЯ СТУДЕНТОВ И ПРЕПОДАВАТЕЛЕЙ ХЕРСОНСКОГО ГОСУДАРСТВЕННОГО УНИВЕРСИТЕТА К ИСПОЛЬЗОВАНИЮ ИКТ

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Аннотация. В статье определено отношение преподавателей и студентов к использованию ИКТ в высших учебных заведениях, обобщены проблемы использования ИКТ преподавателями в обучении, коммуникациях и научной работе. С помощью анкетирования получены результаты о надежности электронных ресурсов обучения, доступа к учебным материалам курсов, использования ИКТ в лекциях, практических занятиях, индивидуальной работе, консультациях и контроле. Результаты исследования подтвердили существование различия между потребностью студентов в смешанном обучении и готовностью преподавателей удовлетворить её. Более того, преподаватели и студенты оценили общее влияние ИКТ на учебный процесс. Это позволило нам увидеть, что преподаватели считают образовательный процесс с ИКТ сложнее, потому что это требует дополнительных информационных навыков, времени для создания и сопровождения смешанных курсов. По мнению студентов, ИКТ совершенствует обучение, облегчая его и делая интереснее. Таким образом, для привлечения студентов к обучению необходимо обеспечить их удобным открытым доступом к учебным материалам и организовать качественное преподавание, которое легко комбинирует традиционные и информационные технологии. Основными проблемами активного использования ИКТ преподавателями оказались недостаток технических навыков, времени и получаемые риски (авторское право, потеря приватности, плагиат). Но кроме личных барьеров имеются также организационные и инфраструктурные. Влияние ИКТ на преподавание значительно изменяет как сам процесс, так и роль преподавателей и студентов в нем. Для организации новой образовательной среды преподавателям уместно овладеть необходимыми информационными навыками, осуществлять международное научное и образовательное сотрудничество, сочетать традиционное обучение с дистанционным (создавать смешанные курсы, интерактивные системы обучения и т.д.).

Ключевые слова: смешанное обучение; ИКТ в преподавании; барьеры в использовании ИКТ.