

ACCEPTANCE OF E-LEARNING AT UNIVERSITY LEVEL DURING THE COVID-19 PANDEMIC SITUATION-TEACHERS' AND STUDENTS' PERSPECTIVE

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Abstract: The situation in higher education at the end of the first quarter of 2020 was both a surprise and a challenge for the University students, teachers and authorities. No one nowadays questions the advantages of e-learning, but the awareness of existing limitations may contribute to better implementation of e-learning and finally lead to higher effectiveness. Every new technological solution, especially when implemented quickly and without any preparation, raises many technological and social problems. The aim of the research was to determine a change in the level of acceptance of e-learning at the University level, in the period 2020-2021. The conducted surveys on representative samples of students and teachers has confirmed a more open attitude of students towards e-learning, compared to the group of teachers. In students' opinion, e-learning in particular saves time, enables flexible classes schedules and improves communication with teachers. Unfortunately, teachers were not as optimistic as students.

Key words: e-learning, computer self-efficacy, ease of use, functionality, intentions for future use

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Introduction

The situation in higher education at the end of the first quarter of 2020 was both a surprise and a challenge for the University authorities, lecturers and students in the context of continuing the teaching process and the implementation of scientific research in such different conditions. Research on e-learning is becoming more and more desirable and important also in the context of the expected increase in the share of this form of activity in the global market. Forecasts show that the e-learning market worldwide will exceed \$ 243 billion (U.S. 243 billion) by 2022 (Duffin, 2020). According to Mathivanan et al., online learning is a tool that can make the teaching-learning process more learner-centered, innovative, and flexible (Mathivanan et al., 2021). In addition to being more flexible, online education is usually less expensive than its classroom counterpart, which can help to overcome financial constraints. In the context of the ongoing COVID-19 crisis, remote learning can also provide continuity when face-to-face training is not available

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(OECD, 2020). On the other hand, many drawbacks of different nature, including social isolation, low level of education quality, or academic scam, are observed worldwide (Buckley, 2003; Toprak et al., 2007; Olum et al., 2020). It should be also realized that the adaptation of new technological solutions, including e-learning, is a multifaceted problem not limited only to technological aspects, but taking into account economic, social, ethical, cultural and legal factors (Ejdys et al., 2019; Radin and Riashchenko, 2017; Sarbaini et al., 2019). Technology Acceptance Models (TAM) are used widely to examine the attitude and intentions of users towards technology and e-learning systems (Baber, 2021; Khalid et al., 2021). During the COVID-19 outbreak the teaching process itself, the methods used, teaching tools, and the verification of the results had to change quickly, for which many teachers and students were not prepared. Bialystok University of Technology also had to face the challenge of distance learning. Initiated in mid-2020, only after 3 months of distance learning, research among students and academic teachers of Bialystok University of Technology allowed for the assessment of the attitude of both groups to e-learning. The obtained results became a starting point for comparative analyzes carried out in 2021. The aim of the research was to evaluate the differences in the level of the acceptance of e-learning among students and academic teachers at Bialystok University of Technology (Poland).

Literature review

E-learning (electronic learning) refers to the use of digital materials to support the learning process (OECD, 2020). It might be associated with online learning, distance learning, open-learning, blended learning, and usually means using computers or other electronic devices connected to a network, providing the opportunity to learn from any place and any time (Cojocariu et al., 2014). E-learning goes beyond traditional paradigms of learning by focusing on the aspects of distance in this process (Ismaili, 2021). Learning online may take the form of synchronous or asynchronous learning. The first form involves students' attendance in live lectures or other classes and real-time interaction between lecturers and students. Asynchronous learning entails the availability of learning materials (e.g., videos, audio-recordings, tutorials) and asynchronous interactions between lecturers and students by e-mail, forums, or chats (Littlefield, 2018). However, e-learning does not necessarily have to be done remotely. It can also be used in physical classrooms to complement more traditional teaching methods, in which case it is called blended learning (OECD, 2020). In this form, it has recently rapidly developed at the university level (Hubackova and Semradova, 2017). Many researchers indicate that e-learning has a positive impact on both teachers and students, as it positively affects the time to concentrate on the classroom, persistence in learning, and attitude to cooperation and interaction (Chen, and Tseng, 2012; Ozdamli and Uzunboylu, 2014). E-learning is indicated as an effective method of teaching and expanding knowledge (Lwoga, 2011; Salter et al.,

2014). Synchronous learning, in particular, offers many opportunities for social communication (McBrien, Cheng and Jones, 2009). A worldwide outbreak of Covid-19 required schools and universities to use distance learning as a basic form of education, even if they were previously reluctant to change the pedagogical approach. They were forced to try to use technology more aptly (Dhawan, 2020). Consequently, beneficial and detrimental factors of e-learning become more visible due to global and comprehensive participation in online teaching and learning. Many factors, from basic digital skills, more individual competences, and evaluations to institutional infrastructure, influence the positive effects of online learning in higher education (Hofer, Nistor and Scheibenzuber, 2021). The success of e-learning systems largely depends on their acceptance and adoption by the users (Hsiao and Yang, 2011). Despite many efforts to popularize the use of e-learning technologies over the last decades, their application often appeared to be limited or even rejected by users (Recker, 2016). For these reasons, research on factors that motivate and engage users in the use of e-learning solutions remains within the scope of scientific interest (Jung and Lee, 2018).

Many theoretical models have been developed to explain technology acceptance processes. The most popular are the following: the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the D&M IT Success model (Ejdys, 2018). According to Davis, technology acceptance depends mainly on the motivation of technology users, which is influenced by other external features and capabilities of the system (Davis, 1985). The technology acceptance model proposed by Davis and Venkatesh considers four variables: perceived usefulness, perceived ease of use, behavioral intention, and actual system use (Venkatesh and Davis, 1996). Further research led authors to the development of a larger set of factors that determine the acceptance of technology and represent different aspects. Within TAM, TAM 2, and TAM 3 following determinants are indicated in the scientific literature: perceived usefulness, job relevance, output quality, result demonstrability, ease of use, subjective norm, image, behavioral intention, computer self-efficacy, perception of external control, computer anxiety, computer playfulness, perceived enjoyment, use behavior (Davis 1985; Venkatesh and Bala, 2008; Venkatesh, Thong and Xu, 2012).

Currently, students represent the Net Generation or Digital Natives, which means they grew up with digital and cyber technologies and therefore have some specific characteristics in terms of using technology (Jones et al., 2010). Especially, they appear to demonstrate ease and proficiency in using information technology. Yet, a study conducted in a few universities in the United States shows differences and discrepancies in digital literacy and competences of university students (Nelson, Courier and Joseph, 2011). Research on the acceptance of e-learning solutions by medical students confirmed that the lack of self-discipline for e-learning was an important barrier related to the acceptance of distance learning. In the same study, the majority of students agreed that clinical skills are the most difficult learning outcomes and may not be appropriate for e-learning (Ibrahima et al., 2020). The

students' technology acceptance in the context of e-learning also changes over time (Vladova et al., 2021). Academic teachers in the higher education sector are a very heterogeneous group, and they constitute a diverse group due to represented scientific disciplines, possessed IT competences, and previous experience. Thus, it is important to identify the factors of acceptance or rejection of new solutions, including e-learning (Bruggeman et al., 2020). A lot of studies address different aspects e-learning system acceptance but mostly they focus on students' perspective (e.g. Mohammadi, 2015; Sumak et al., 2011; Salloum et al., 2019; Althunibat, 2015; Alamri et al., 2019; Sensuse and Napitupulu, 2017; Darmawan and Umamah, 2019). Studies that concentrate on a teachers' perspective are less common (e.g. Gunasinghe, 2020; Yuen and Ma, 2008; Babić, 2012). A few studies concern both perspectives (e.g. Umrani-Kan and Iyer, 2009). In most acceptance models of e-learning solutions, their authors included factors contained in the original TAM model and its modifications, i.e. perceived ease of use, perceived usefulness (functionality), attitudes towards the use of the system, intentions of behavior in the use of the solution and the scope of the actual use of the system. This study aims at the examination of both perspectives – students and academic teachers – in terms of differences in acceptance of e-learning at the university level. The comparison of factors determining the acceptance of e-learning in both groups was also carried out.

Research Methodology

The aim of the research was to assess differences in the level of the acceptance of e-learning among students and academic teachers at Bialystok University of Technology (Poland) in a very specific period of the COVID-19 epidemic. In particular, following variables were analyzed:

1. Scale of using e-learning tools.
2. Experience in using e-learning tools (E).
3. Computer self-efficacy (CSE).
4. Perceived ease of use (PU) and functionality of e-learning tools (PF).
5. Support of e-learning processes from the University (SC).
6. Level of influence of e-learning on the communication system between e-learning users (COM).
7. Attitudes (AT) and intentions for future use (IF) of e-learning by users.

Additionally, relationships between the users' experience in using e-learning and the perceived level of attractiveness of this form of learning as well as future intentions of e-learning use were the subject of statistical verification.

The respondents in the study consisted of students and academic teachers of Bialystok University of Technology. The study was carried out using structured online survey questionnaires with the CAWI (Computer Assisted Web Interview) technique. The survey was conducted over two periods: May-June 2020 (Study 1) and March 2021 (Study 2). It allowed to evaluate the observed changes in the level of e-learning acceptance. Most constructs were measured using a seven-point

Likert scale (from 1 = totally disagree to 7 = totally agree). The link to the electronic questionnaire was sent by the university electronic system. The number of questionnaires sent and the rate of questionnaires return for the two studies are presented in Table 1.

Table 1. Number of sent and completed questionnaires and the rate of return

Study	Sent questionnaires	Received questionnaires	Rate of questionnaires return
Academic teachers			
Study 1 (May-June 2020)	637	156	24.5
Study 1 (March 2021)	634	105	16.6
Students			
Study 1 (May-June 2020)	6080	982	16.2
Study 1 (March 2021)	5779	803	13.9

Source: elaborated by the authors.

In Study 1, of 156 the academic teachers, women and men represented exactly 50.0% each (78 people). In Study 2, out of 105 academic teachers, women made up 46.7% (49 people) and men 53.3% (56 people). In Study 1, in the sample of 982 students, women constituted 47.1% (463 persons) and men 52.9% (519 persons). In Study 2, out of 803 students women represented 42.8% (463 persons) and men 57.2% (459 persons).

Study results

Scale of using e-learning tools

The scale of using e-learning tools referred to the average number of hours per week of teaching activities carried out with the use of such tools. Data reflecting changes in the scale of using e-learning tools by the studied groups in both studies are presented in Figure 1.

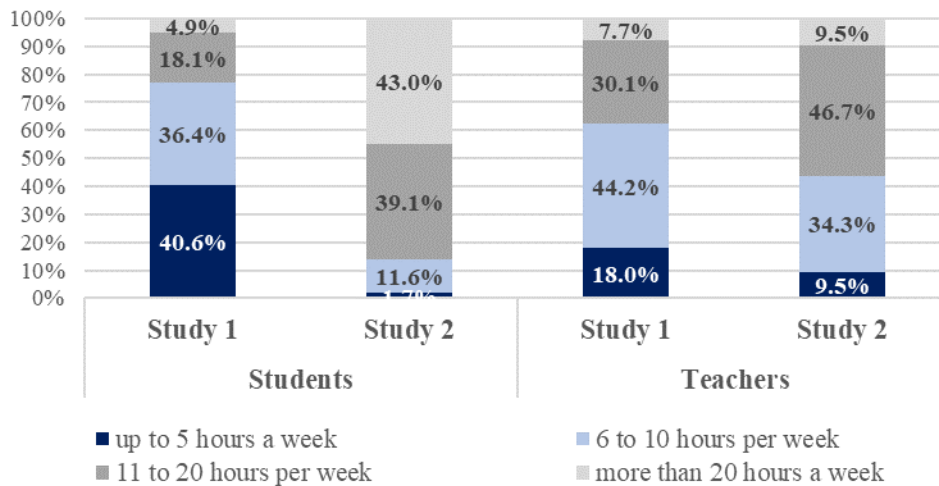


Figure 1: Changes in the scale of using e-learning tools by both groups
Source: elaborated by the authors.

The data presented in Figure 1 confirm that the scale of using e-learning tools has changed. Over 82% of students and 56% of teachers in 2021 had on average more than 11 hours of classes per week. Students definitely spent more time per week on remote classes than academic teachers.

Experience in using e-learning tools

During the study, the respondents were asked to evaluate their declared level of experience (E) in using e-learning tools by rating the statement: I have a lot of experience in using e-learning tools – using a seven-point Likert scale (from 1 = totally disagree to 7 = totally agree). A graphical presentation of mean values of users' declared experience is included in Figure 2.

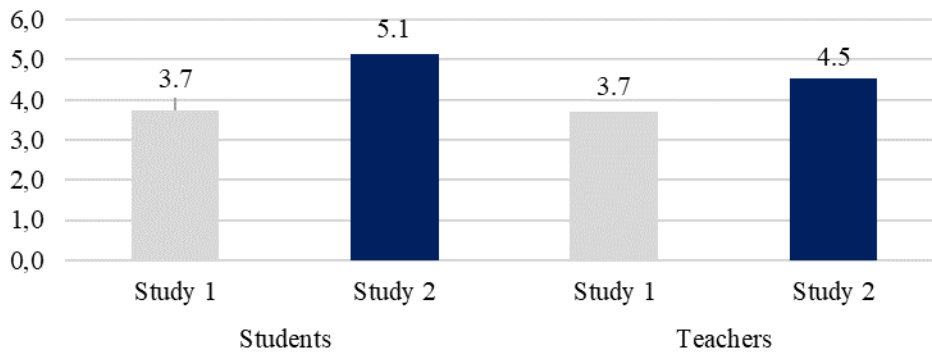


Figure 2: Experience in using e-learning tools
Source: elaborated by the authors.

In both groups of respondents, the rating of the declared level of experience in using e-learning tools was higher in the 2021 study, compared to the 2020 study. However, taking into account the 7-point scale, the level of assessment of experience is still not very satisfactory. Students generally declared a higher level of experience in comparison to teachers' declaration.

Computer self-efficacy

Computer self-efficacy means, on the one hand, the users' ability to solve problems on their own and, on the other hand, access to technical resources enabling to use e-learning tools. In order to measure computer self-efficacy, two statements were used: I am able to independently solve the problems during the using of e-learning tools (CSE1) and I have sufficient technical resources to use e-learning tools (CSE2). Mean values of the assessment of the indicated statements are shown in Figures 3 and 4.

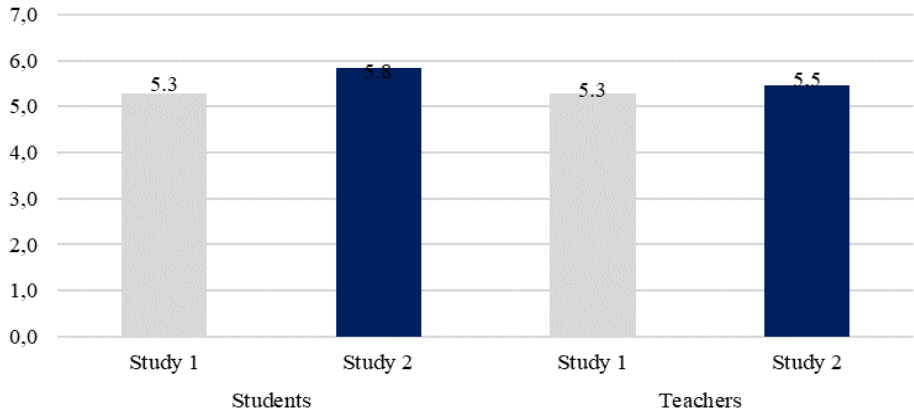


Figure 3: Assessment of the ability to individual problem solving (SCE1)
Source: elaborated by the authors.

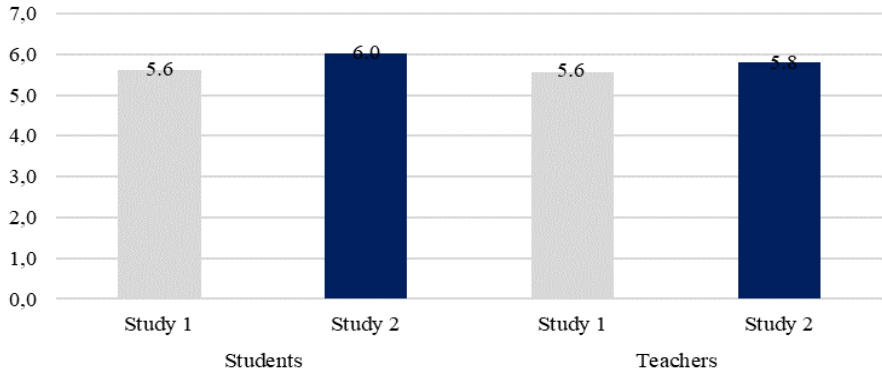


Figure 4: Assessment of access to sufficient technical resources (CSE2)
Source: elaborated by the authors.

The evaluation of the ability to solve problems independently by both groups of the respondents as well as the evaluation of the availability of technical resources required for e-learning increased during the analyzed periods. The increase in the average ratings of both variables was significantly higher in the group of students, compared to the group of teachers.

Ease of use of e-learning tools

Ease of use of e-learning reflects how easy users learned to use e-learning tools and how difficult/easy is to use e-learning tools. To measure the ease of use, three statements were incorporated: It was easy to acquire the ability to use e-learning tools (EU1), using e-learning tools is easy and intuitive (EU2) and procedures and user instructions for using e-learning tools are clear and understandable (EU3). Mean values of the assessment of the indicated statements are shown in Figures 5-7.

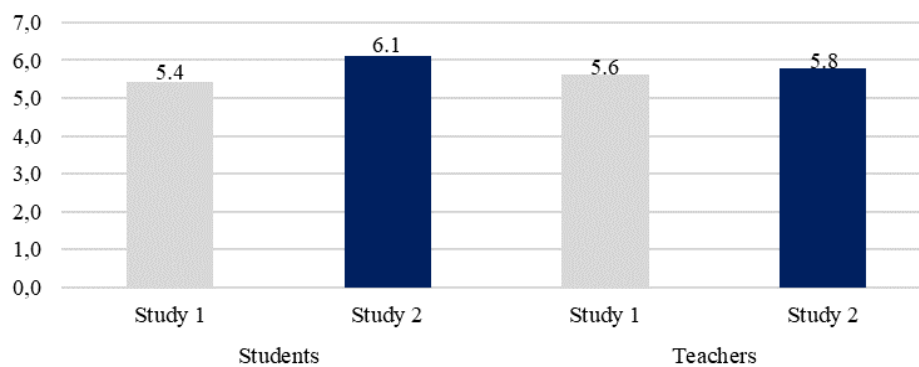


Figure 1: Assessment of acquiring the ability to use e-learning tools (EU1)

Source: elaborated by the authors.

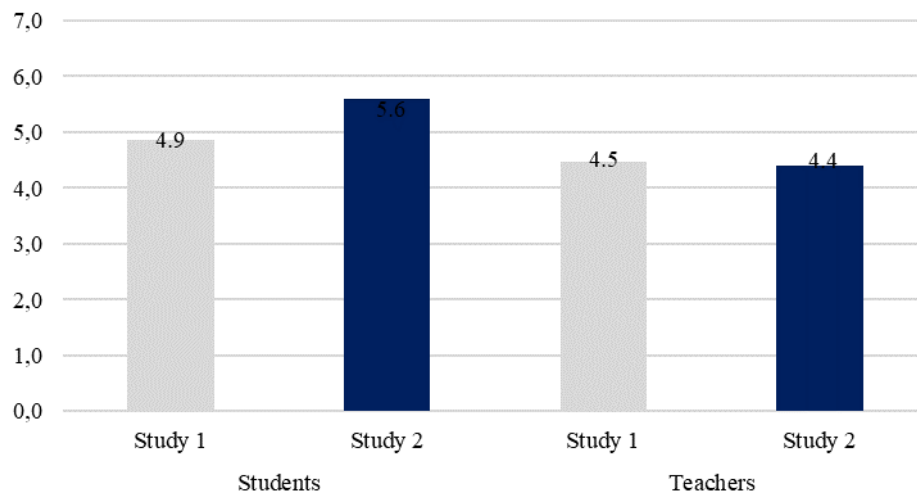


Figure 2: Perception of using e-learning as an easy and intuitive tool (EU2)

Source: elaborated by the authors.

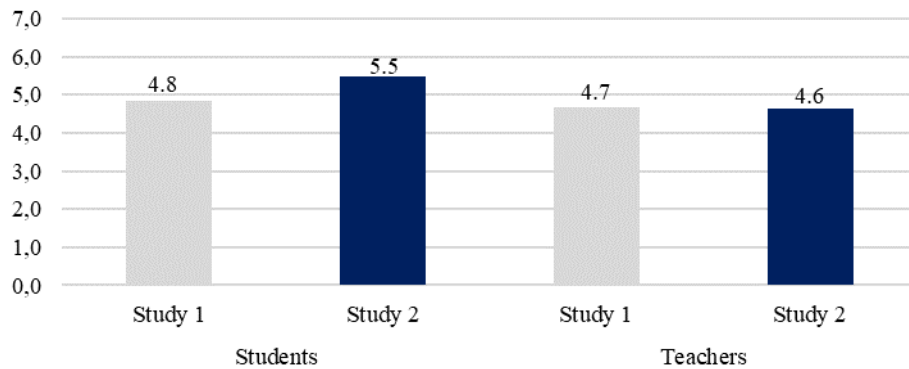


Figure 3: Perception of e-learning procedures and user instructions as clear and understandable (EU3)

Source: elaborated by the authors.

In Study 1, teachers higher (mean 5.6) than students (mean 5.4) rated the ease with which they acquired the skills necessary to use e-learning. In terms of obtaining experience in e-learning, students in Study 2, compared to Study 1, rated higher both the ease of use of e-learning and the level of ease and understanding of the procedures and user instructions. Among teachers, the rating of both the ease of use and the level of understanding of procedures and instructions in Study 2 was lower than in the preliminary study. In the starting phase of the application of e-learning, the degree of complexity of the used e-learning platforms, teaching tools was limited and unfamiliar to teachers. They used only basic functionalities. In the next

semester of remote teaching, all elements of the teaching process including the verification of learning outcomes were implemented remotely, which increased the level of difficulty of using e-learning tools, and thus probably resulted in a lower assessment of the ease of use.

Functionality of e-learning tools

The functionality of e-learning very often is connected with time saving (resulting mainly from the lack of need to commute to the University) and flexibility in the classes schedule. For the purpose of functionality measurement, three statements were included in the questionnaire: E-learning classes save my time (FU1), E-learning classes schedule can be very flexible (in the context of different times during the day, days of the week) (FU2) and E-learning teaching enables better organization of work group (FU3). Mean values of the assessment of the indicated statements are shown in Figures 8-10.

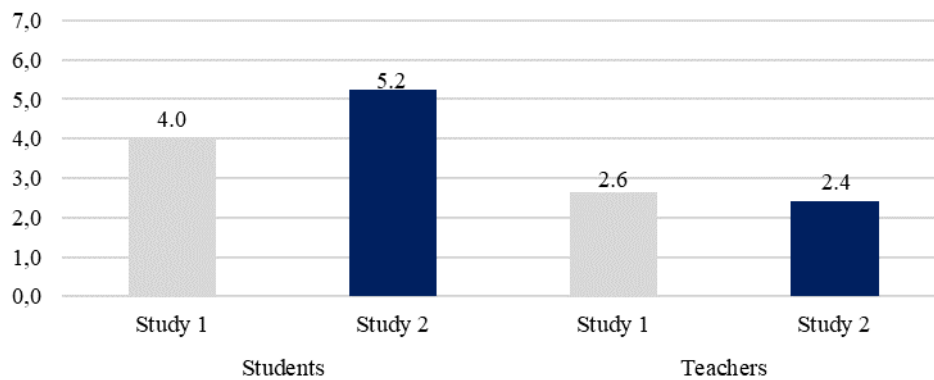


Figure 4: Assessment of time-saving (FU1)

Source: elaborated by the authors.

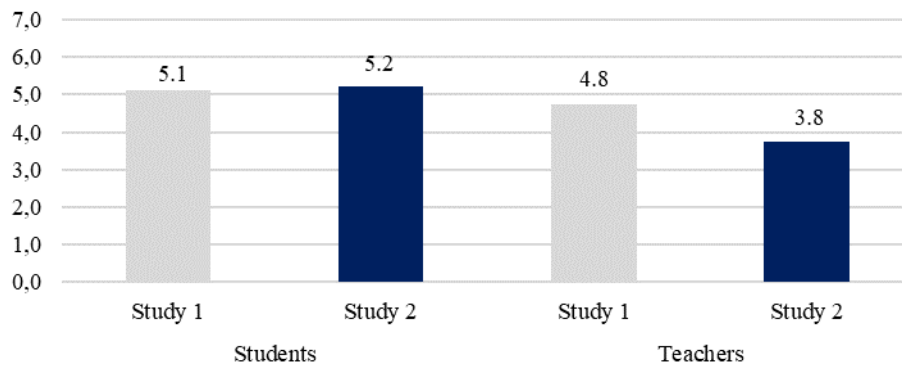


Figure 5: Assessment of flexibility of classes schedule (FU2)

Source: elaborated by the authors.

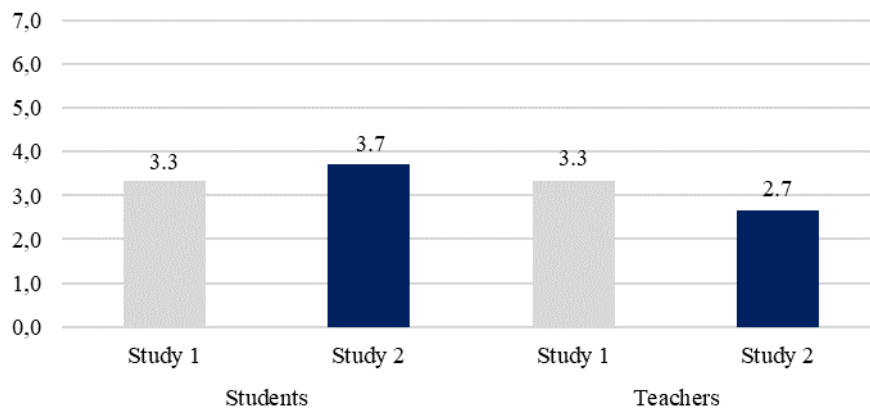


Figure 6: Assessment of better work group organization (FU3)

Source: elaborated by the authors.

The assessment of perceived functionality of e-learning teaching, in the context of time-saving, flexibility of classes schedule and improvement of work group organization was a lot different within two surveyed groups.

Compared to Study 1, students in Study 2, rated all three statements. In particular, they have given higher marks to the functionality which reflects time-saving (mean 5.2 in Study 2, and 4.0 in Study 1). In the part of the questionnaire containing open questions allowing to indicate the benefits of e-learning, students referred to time saving as time saving related to the lack of commuting to the University and better organization of the timetable, elimination of “free periods”.

Unfortunately, the high rating of this functionality of e-learning by the students was not confirmed by academic teachers, who rated much lower the fact that e-learning saves time (mean in the study of 2021 – 2.4, in 2020 – 2.6). E-learning from the perspective of teachers is an additional workload for the preparation of materials and verification of learning outcomes, communication with students, which is not compensated by time savings associated with not having to commute to the University.

Similarly, the second functionality of e-learning which reflects flexibility referring to: the time of delivery of classes, the possibility to attend classes from any place, and often at any time, and the possibility to reconcile other duties with studying – received relatively higher marks given by students, as compared to academic teachers’ assessment. Flexibility in Study 2 was rated by academic teachers at a lower level in comparison with Study 1. For this group of respondents, flexibility means availability 7/7, 24/24 hours for students.

The evaluation of the impact of e-learning on work group organization was at a similar level in 2020 within two groups, while in 2021 students rated this feature higher. However, for both groups, the rating of this variable did not exceed level 4 (on a 7-point Likert scale), which indicates a low impact of e-learning on the improvement of work group organization.

Support of e-learning processes from the University

Users' support refers to the provided technical assistance from University staff, colleagues when using e-learning as well as fostering accessibility to user manuals and guides. For the purpose of assessing e-learning support conditions, three statements were used in the questionnaire: I can count on technical support during the use of e-learning tools from the University staff (SC1), I can count on technical support during the use of e-learning tools from my colleagues (SC2) and the University provides professional support to users of e-learning tools through clear and understandable user instructions, tutorials available on the website (SC3). Mean values of the assessment of the indicated statements are shown in Figures 11-13.

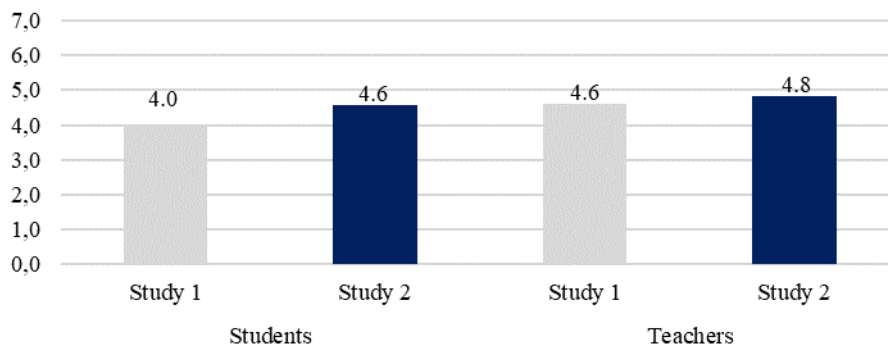


Figure 7: Assessment of technical support from the University (SC1)

Source: elaborated by the authors.

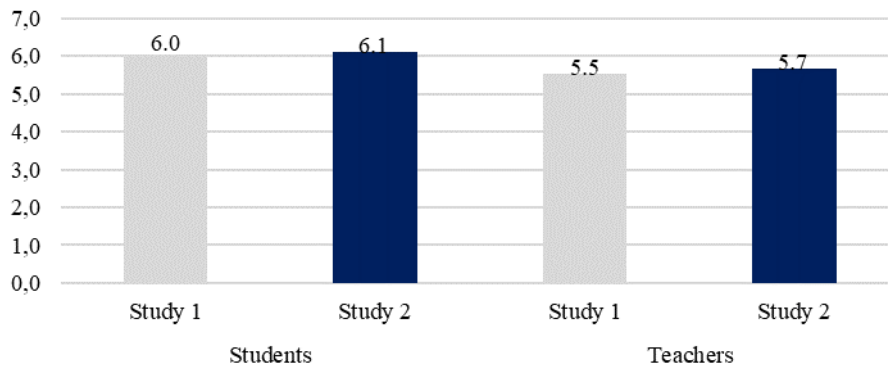


Figure 8: Assessment of colleagues' support (SC2)

Source: elaborated by the authors.

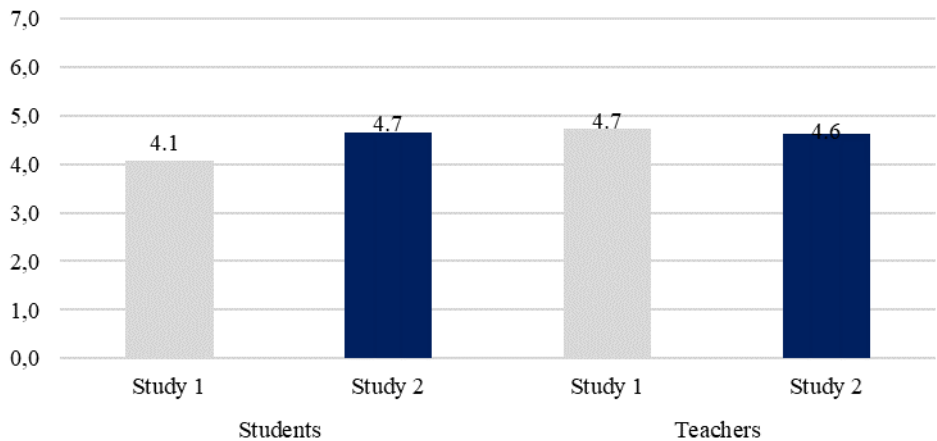


Figure 9: Assessment of clear and understandable user instructions (SC3)

Source: elaborated by the authors.

The assessment of the perceived level of support from the University staff and colleagues was rated higher in Study 2, compared to Study 1, by both groups of respondents. Both students and teachers rated support from their colleagues (e-learning users) higher than support from the University administration staff responsible for e-learning. The support offered by the University in the form of instructions and user guides in the 2021 study was rated at a similar level by both surveyed groups (mean score of students 4.7, teachers 4.6). However, comparing the results of the two surveys in the group of students, the level of satisfaction reflected by the evaluation was relatively higher, while the evaluation of teachers in 2021 was lower than in the previous year (Figure 13).

Influence of e-learning on the communication system

To evaluate the impact of e-learning on the level of communication between e-learning users, three statements were included in the questionnaire: E-learning tools facilitate and improve communication between students and teachers (COM1); E-learning tools facilitate and improve communication within the respondent groups (student-student; teacher-teacher) (COM2); Students/teachers are open-minded and eager to communicate (COM3). Mean values of the assessment of the indicated statements are shown in Figures 14-16.

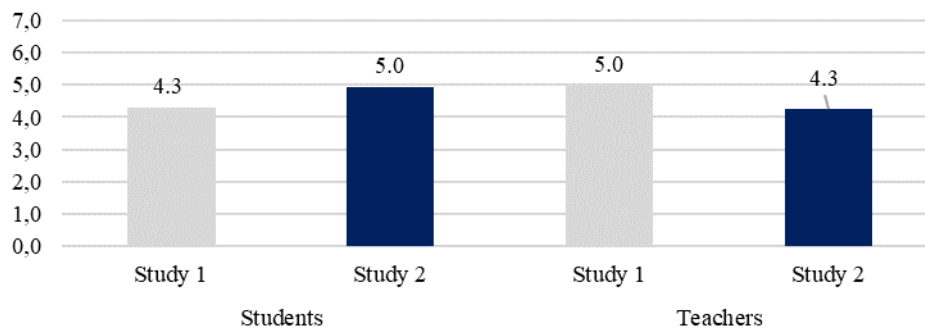


Figure 10: Assessment of e-learning influence on communication between students and teachers (COM1)

Source: elaborated by the authors.

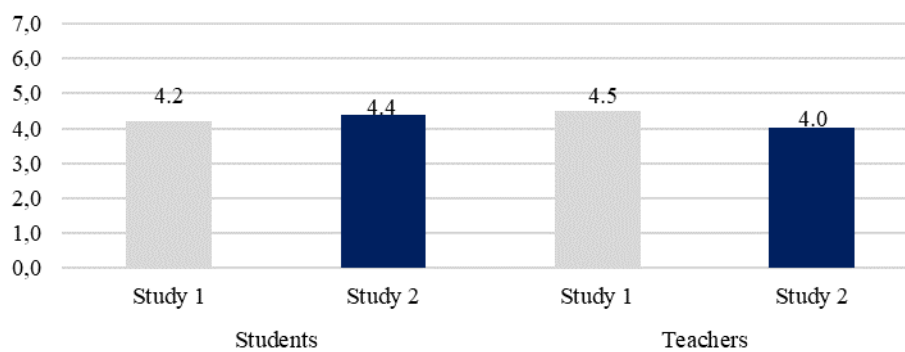


Figure 11: Assessment of e-learning influence on internal group communication between students-students and teachers-teachers (COM2)

Source: elaborated by the authors.

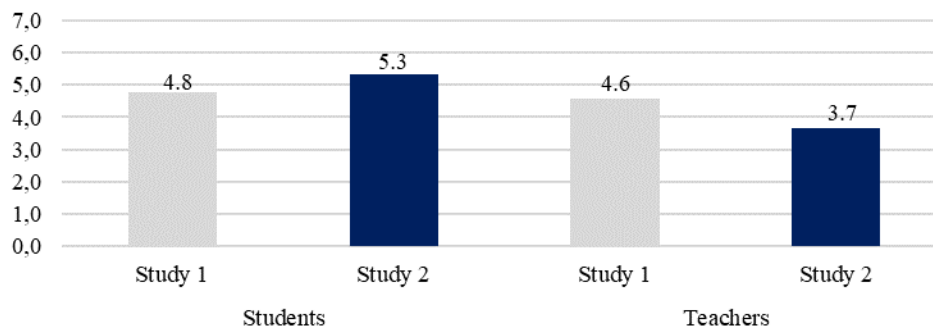


Figure 12: Assessment of openness and willingness to communicate (COM3)

Source: elaborated by the authors.

The analysis of the results presented in Figures 14-16 confirms that students higher rated (i.e. more positively) the impact of e-learning on facilitating communication in student-teacher and student-student relationships. Students also rated higher the openness and willingness to communicate on the part of teachers. Higher student ratings for the three analyzed variables in the 2021 study (compared to the study in 2020) confirm that e-learning has facilitated and improved communication between e-learning users. Unfortunately, teachers are of a different opinion, as their ratings of all analyzed variables in 2021 are lower than in the previous year. Teachers furthermore rated the openness and willingness of students to communicate much lower in 2021 compared to the previous year. Such a strong variation in the evaluation of the impact of e-learning on the communication system between the two groups of users may be due to different expectations and needs of the two groups. The teacher most likely expects more active involvement of students during the course, while for students it is important to have occasional contact with teachers when needed at any time.

Assessment of users' attitudes and future intentions to use e-learning

The analyzed construct reflects general evaluation of e-learning by the respondents, as an attractive form of teaching and their declared scope of future intention to use e-learning. The questionnaire included the following two variables: E-learning is an attractive form of teaching (AT); I intend to use e-learning to a greater extent in the process of education and acquisition of knowledge (FI2). Mean values of the assessment of the indicated statements are shown in Figures 17-18.

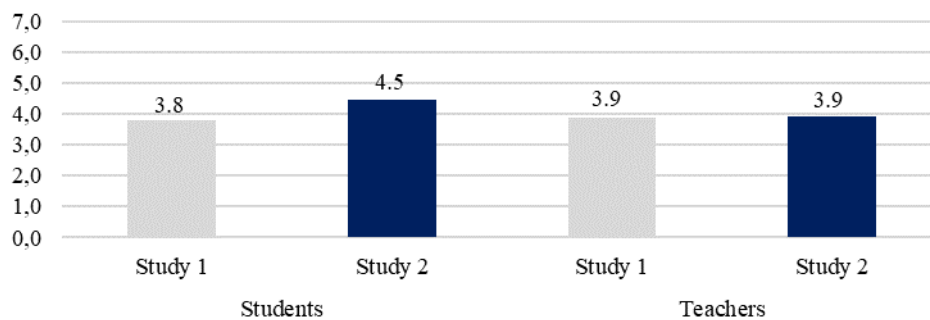


Figure 13: E-learning assessment as an attractive form of teaching (AT)

Source: elaborated by the authors.

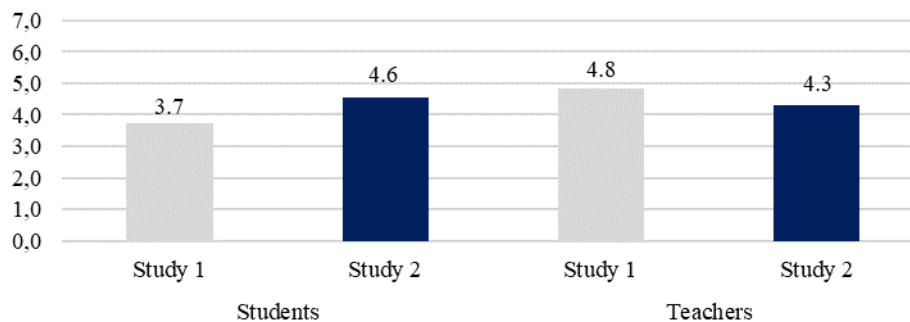


Figure 14: Declared future intention of using e-learning (FI2)

Source: elaborated by the authors.

In the survey conducted in 2021, the attractiveness of e-learning as a form of teaching gained in importance, mainly among students (Figure 17). The level of teachers' assessment of the attractiveness of e-learning as a form of teaching did not change during the analyzed period. The students' perception of e-learning as an attractive form of teaching probably influenced their higher assessment of the declared scope of using e-learning in the future. Unfortunately, academic teachers did not share this positive attitude and their assessment of the declared scope of using e-learning in the future was lower in 2021, compared to the previous year.

E-learning teaching for a longer period allows both students and teachers to gather experience and improve their skills in this field. As users gain experience in using any ICT, it is to be expected that their attitudes towards technology will change in a positive way and that they will make greater use of technology in the future. Considering the above, two hypotheses were statistically verified:

H1: The declared by the respondents level of experience in using e-learning (E) positively influences the perceived attractiveness of e-learning (AT)

H2: The declared by respondents level of experience in using e-learning (E) positively influences the scope of declared future intention to use of e-learning (FI2)

Within the group of students – the results of the Kruskal-Wallis test confirmed statistically significant relationships between tested variables (statistical significance at the level of $p < 0.001$). User experience positively influences the perceived attractiveness of e-learning and positively influences the extent of the respondents' past use of e-learning. Box-and-plot diagrams were used for graphical presentation of observed relationships between variables (Figure 19).

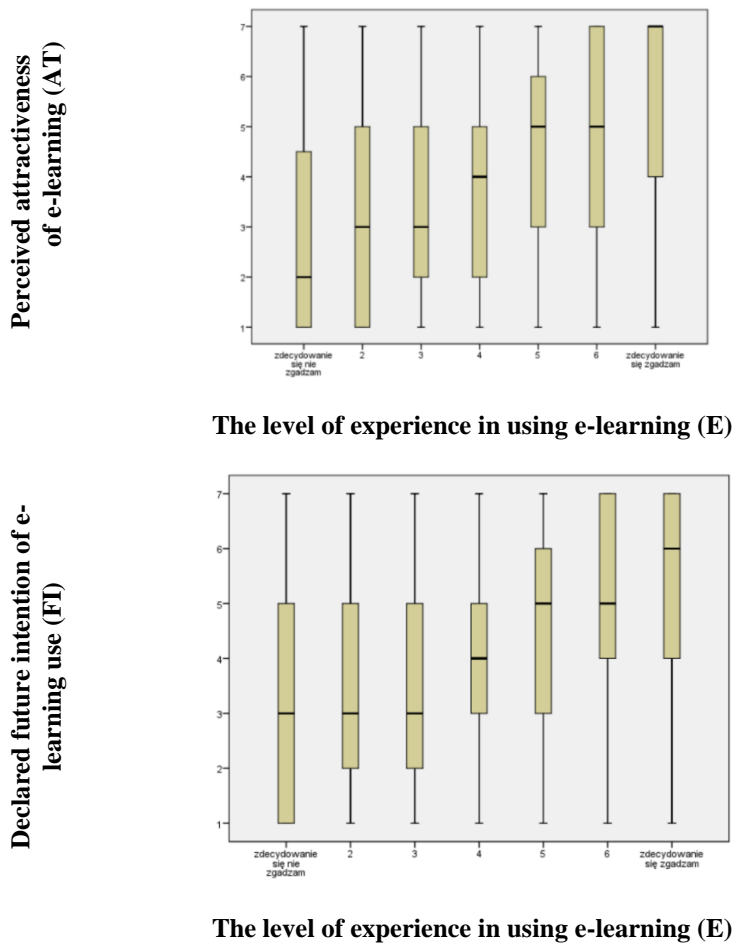
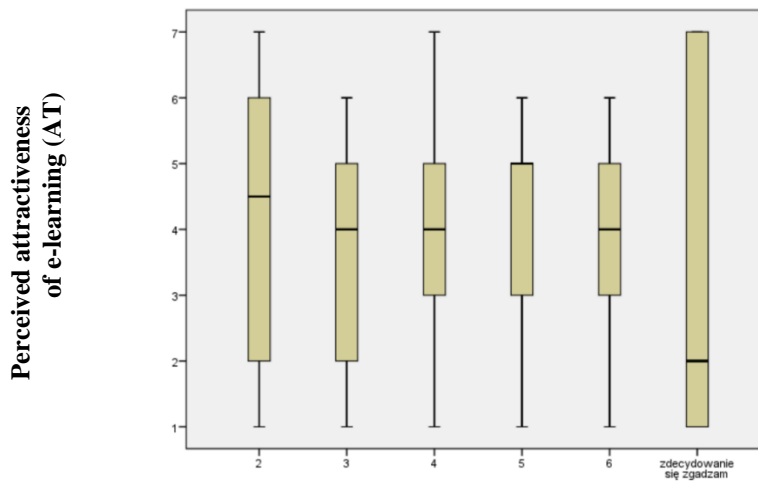
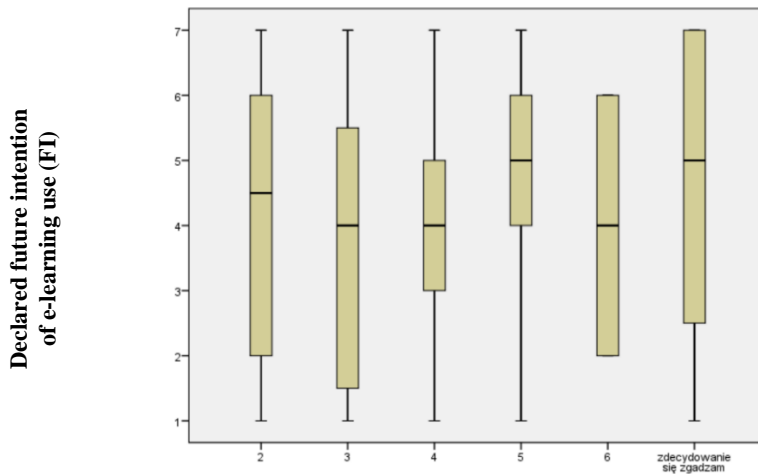


Figure 15: Differentiation between the evaluation level of the analyzed variables in the group of respondents and the experience level in using e-learning tools (E) – students group

Within the group of teachers – the results of Kruskal-Wallis test confirmed the lack of statistically significant correlations between tested variables (statistical significance at the level of 0.595 (AT), 0.533 (FI)). User experience is not correlated with the respondents' perceived attractiveness of e-learning and does not change the extent of their past use of e-learning. Box-and-plot diagrams were used for graphical presentation of the analyzed relationships (Figure 20).



The level of experience in using e-learning (E)



The level of experience in using e-learning (E)

Figure 16. Differentiation between the evaluation level of the analyzed variables in the group of respondents and the experience level in using e-learning tools (E) – teachers group

Discussion

The conducted research allowed to formulate the following conclusions

-Over 82% of students and 56% of teachers in 2021 had on average more than 11 hours of classes per week. Students definitely spent more time per week on remote classes than academic teachers;

- In both groups of respondents, the rating of the declared level of experience in using e-learning tools was higher in the 2021 study, compared to the 2020 study. Students, generally declared a higher level of their experience as compared to teachers' declaration;
- During the analyzed periods, the evaluation of the ability to solve problems independently by both groups of respondents as well as the evaluation of the availability of technical resources required for e-learning increased;
- In terms of obtaining experience in e-learning, students in Study 2, compared to Study 1, rated higher both the ease of use of e-learning and the level of ease and understanding of the procedures and user instructions,
- Among teachers, the rating of both the ease of use and the level of understanding of procedures and instructions in Study 2 was lower than in the preliminary study. In the next semester of remote teaching, all elements of the teaching process including the verification of learning outcomes were implemented remotely, which increased the level of difficulty of using e-learning tools, and thus probably resulted in a lower assessment of the ease of use in case of teachers;
- The assessment of perceived functionality of e-learning teaching differed considerably within two surveyed groups. As compared to Study 1, students in Study 2 relatively higher rated all the three functionalities of e-learning: time-saving, flexibility of e-learning and improvement of work group;
- Unfortunately, the high rating of the functionality of e-learning by the students was not confirmed by academic teachers, who rated much lower the fact that e-learning saves time. E-learning from the perspective of teachers is an additional workload for the preparation of materials and verification of learning outcomes, communication with students, which is not compensated by time savings associated with not having to commute to the University;
- The functionality of e-learning, which reflects flexibility referring to: the time of delivery of classes, the possibility to attend classes from any place, and often at any time, and the possibility to reconcile other duties with studying – received relatively higher marks given by students, as compared to academic teachers' assessment;
- Students higher rated (i.e. more positively) the impact of e-learning on facilitating communication in student-teacher and student-student relationships, and the openness and willingness to communicate on the part of teachers as well;
- Teachers furthermore rated the openness and willingness of students to communicate much lower in 2021 compared to the previous year. Such a strong variation in the evaluation of the impact of e-learning on the communication system between the two groups of users may be due to different expectations and needs of the two groups;
- The attractiveness of e-learning as a form of teaching gained in importance, mainly among students. The students' perception of e-learning as an attractive form of teaching influenced their higher assessment of the declared scope of using e-learning in the future. Unfortunately, academic teachers did not share this positive

attitude and their assessment of the declared scope of using e-learning in the future was lower in 2021;

-Within the group of students – the results of the Kruskal-Wallis test confirmed that users' experience positively influences the perceived attractiveness of e-learning and positively influences the extent of the respondents' past use of e-learning,

-Within the group of teachers – the results of the Kruskal-Wallis test confirmed that users' experience is not correlated with the respondents' perceived attractiveness of e-learning and does not change the extent of their past use of e-learning.

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AKCEPTACJA E-LEARNINGU NA POZIOMIE UCZELNI W SYTUACJI PANDEMII COVID-19 PERSPEKTYWA NAUCZYCIELI I STUDENTÓW

Streszczenie: Sytuacja w szkolnictwie wyższym na koniec I kwartału 2020 r. była zarówno zaskoczeniem, jak i wyzwaniem dla studentów, nauczycieli i władz Uczelni. Nikt w dzisiejszych czasach nie kwestionuje zalet e-learningu, ale świadomość istniejących ograniczeń może przyczynić się do lepszego wdrażania e-learningu i ostatecznie doprowadzić do większej efektywności. Każde nowe rozwiązanie technologiczne, zwłaszcza gdy jest wdrażane szybko i bez żadnego przygotowania, rodzi wiele problemów technologicznych i społecznych. Celem badań było określenie zmiany poziomu akceptacji e-learningu na poziomie Uczelni w latach 2020-2021. Przeprowadzone badania na reprezentatywnych próbach studentów i nauczycieli potwierdziły bardziej otwarty stosunek studentów do e-learningu w porównaniu z grupą nauczycieli. W opinii studentów e-learning w szczególności oszczędza czas, umożliwia elastyczne planowanie zajęć i usprawnia komunikację z nauczycielami. Niestety nauczyciele nie byli tak optymistyczni jak studenci.

Słowa kluczowe: e-learning, komputerowa samodzielność, łatwość obsługi, funkcjonalność, zamiary wykorzystania w przyszłości

在 COVID-19 大流行期间接受大学级别的电子学习 – 教师和学生的观点

摘要:2020年第一季度末的高等教育形势对大学生、教师和当局来说既是惊喜,也是挑战。现在没有人质疑电子学习的优势,但对现有局限性的认识可能有助于更好地实施电子学习并最终提高效率。每一种新技术解决方案,尤其是在没有任何准备的情况下快速实施时,都会引发许多技术和社会问题。该研究的目的是确定2020-2021年期间大学层面对电子学习的接受程度的变化。对具有代表性的学生和教师样本进行的调查证实,与教师群体相比,学生对电子学习的态度更为开放。在学生看来,电子学习尤其可以节省时间、灵活安排课程时间并改善与教师的沟通。不幸的是,老师没有学生那么乐观。

关键词:电子学习, 计算机自我效能, 易用性, 功能性, 未来使用意图