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COMPARISON OF ONLINE TEACHING USING IT TECHNOLOGIES AND THE CLASSIC FORM OF TEACHING IN CLASSROOMS

The paper on the topic: "Comparison of online teaching using IT technologies and the classic form of teaching in classrooms" presents the results of a survey that proves: which is the most practical form of teaching for respondents to acquire knowledge; in relation to the classical form of teaching, in which subjects the classic form of teaching is better (in the classroom) for easier acquisition of knowledge in relation to the online form, whether the respondents used LMS systems (learning management systems) in certain subjects, which LMS systems were used by respondents during online classes, did respondents work in classes with LMS systems during the classic way of teaching, what is the opinion of respondents about which are more practical systems for teaching, whether it is easier and more practical to participate (according to in their opinion) in online teaching (during online teaching) from general education subjects or vocational subjects, which online teaching tool respondents used most often, whether respondents use further tools ("use tools today") that were intended for online teaching (during COVID) in the teaching process to facilitate acquisition knowledge and easier access to materials in digital form and what is the opinion of the respondents on the objectivity of assessment according to their experience, taking into account the time of online teaching and the time of the classic form of teaching.

Keywords: *distance learning, classical teaching, information technology, teaching, online survey.*

1. Introduction

The article entitled "Comparison of online teaching using IT technologies and the classic form of teaching in classrooms" presented in this paper includes the results of a survey that proves: which is the most practical form of teaching for respondents to acquire knowledge; knowledge about the classical form of teaching, in which subjects the classic form of teaching is better (in the classroom) for easier acquisition of knowledge about the online form, whether

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the respondents used LMS systems (learning management systems) in certain subjects, which LMS systems were used by respondents during online classes, whether respondents worked in classes with LMS systems during the classic way of teaching, what is the opinion of respondents about which are more practical systems for teaching, whether it is easier and more practical for participants to participate (in their opinion) in online teaching e online teaching) from general education or vocational subjects, which online teaching tool was most often used by the respondents, whether the respondents use further tools ("do they use tools today") that were intended for online teaching (during COVID) in the teaching process for easier acquisition of knowledge and easier access to materials in digital form and what is the opinion of respondents on the objectivity of assessment according to their experience, taking into account the time of online teaching and the time of classical teaching. During the research, hypotheses H_0 and alternative hypothesis H_1 were set in the paper, which read:

(H_0) for students is a more practical classical form of teaching in the classroom than online forms of teaching for the acquisition of knowledge and students are also easier and more practical to participate in the online teaching of vocational subjects than general education and more objective assessment according to respondents during the classical form teaching,

(H_1) for students is not a more practical classical form of teaching in the classroom than online forms of teaching for the acquisition of knowledge and students are not easier and more practical to participate in the online teaching of vocational subjects than general education and not more objective assessment according to respondents.

2. The classic form of the teaching process

The classic form of the teaching process refers to the teaching in classical classrooms. The teaching process consists of a series of teaching activities that take place continuously within a certain class department at a certain time according to a predefined schedule. Within the classical form of the teaching process, modern ICT technology is also used to display the teaching materials of a particular subject (e.g. computer, projector, and screen). Based on the research of Arbunić and Kostović-Vranješ, the respondents agree that traditional teaching is described by oral presentations and explanations of processes and phenomena, i.e. classical methods, and the use of textbooks as exclusive sources of knowledge (Arbunić and Kostović-Vranješ, 2007). Teachers, especially those older and educated in classical methods, prefer to stick to established forms of work, rather than experimenting with the unknown and therefore unacceptable to them, and ultimately more uncertain (Arbunić and Kostović-Vranješ, 2007). The above definition by Arbunić and Kostović-Vranješ in 2007 confirms, among other things, the definition: "In a pandemic situation, the imperative of continuing education by introducing distance learning and rapid transitions to distance learning can have the opposite effect" (Daniel, 2020).

3. Online teaching using IT technologies

Distance learning involves the use of telecommunications and electronic devices that allow students to receive instructions from a remote location (Bakia et al., 2012). The application of online teaching using IT technologies facilitates the process of "lifelong learning" and information can be brought to any part of the world. However, despite the undoubtedly many advantages

over the classical form of the teaching process, this way of teaching has its drawbacks, which should certainly be taken into account when implementing it in the education system. On the one hand, these shortcomings are related to the characteristics of online learning, while on the other hand, some of them are related to the characteristics of students participating in such programs. Two types of social isolation occur in the online environment (which is certainly a disadvantage): (1) isolation from teaching staff, and (2) isolation from other students (Bunn, 2014). Online learning is a type of teaching in which most teaching content is delivered online, online (Allen and Seaman, 2006). At the time of the coronavirus pandemic, major changes took place in the education system. Namely, the classic form of the teaching process has moved to the online environment using IT technologies. COVID-19 pandemic came at a time when schools and higher education are faced with multiple challenges. E-learning was first used in a Computer Based Training (CBT) system in 1999. A CBT course also called courseware may be conveyed via a software product installed on a computer on the educational intranet, or over the internet as Web-based training. Other terminology, such as virtual learning and online learning, has begun to emerge in pursuit of an adequate explanation. Nonetheless, the ideals and values that underpin e-learning have been acknowledged throughout history. There is compelling evidence that e-learning existed as far back as the 19th century. E-learning through pedagogical tools is seen as a new teaching method rather than face-to-face classes (Ainaab, T et al., 2022).

The e-learning framework is the best solution to enable students to learn about the quality of education. The perceived ease of use and perceived usefulness are positively correlated with facilitating condition, perceived control, and self-efficacy, which in turn influences students' attitude toward use, which in turn affects the actual use of the e-learning system during the COVID-19 pandemic (Alyoussef, 2021). E-learning, as a new method of teaching, is gradually being applied in education at all levels. E-learning has now become more popular. Universities are now shifting their focus to more web-based methods in delivering educational material. A 2015 U.S. survey found that the number of students attending online classes increased from 3.7% to 3.9%. Every fourth student attends at least one online course in one year. Sixty percent of academic leaders believe that e-learning will be important for long-term growth (Dwidienawati, D et al., 2020).

4. Sample and research methods

At the beginning of the research, a detailed design of the research was made, which defined how the most adequate sample for this type of research is the so-called non-probabilistic sample of the type and goal of the research, the required representativeness and precision of the final results (which are ultimately the contribution of science), available time and financial possibilities. Thus, the sample is non-probabilistic and the online survey surveyed students of vocational schools with four-year occupations the web designer and the media technician. Therefore, the survey and content analysis collected all relevant data (among other things intended) for the acceptance and/or rejection of hypotheses H_0 and H_1. The sample is relevant and also appropriate, and is made up of adult volunteers. Also, the sample contains all the characteristics of the population important for the subject of research. The so-called "Field" method of collecting data from individuals in a real-life situation within the classroom but through an online survey. The sample is unprobabilistic because the type of sample was selected by certain criteria of the researcher and the knowledge of the population to obtain as relevant data as possible.

5. Presentation of the results of the survey on the topic: "Comparison of teaching using IT technologies and the classic form of teaching"

This chapter presents in detail the results of a survey on the topic of comparing teaching using IT technologies and the classical form of teaching. The sample is non-probabilistic and the online survey surveyed students of four-year professions: the web designer and media technician. The sample is relevant. The pattern is also convenient and is made up of volunteers. Based on the survey research and the statements of the respondents, hypotheses H_0 and H_1 were tested, which are listed in the introductory part of the paper.

Figure 1. Presentation of the most practical form of teaching for the acquisition of knowledge of respondents
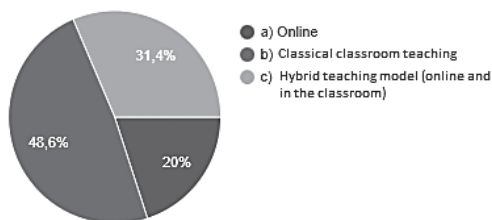
Source: the creation of the author

Figure 1 shows the most practical form of teaching for the acquisition of knowledge of respondents. Thus, 48.6% of respondents stated that the most practical form of teaching for the acquisition of knowledge is classic classroom teaching, while only 20% of respondents said that the online form of teaching is the most practical form of teaching for the acquisition of knowledge. The hybrid model was chosen by 31.4% of respondents (Figure 1). Considering the results shown in Figure 1, it can be said that based on them, the set hypothesis H_0 is also accepted, which reads: teaching in vocational subjects than in general education subjects, and assessment is more objective according to the opinion of the respondents at the time of the classical form of teaching".

Figure 2. Presentation of a better or more practical form of teaching (between online form and classic form of teaching) for the acquisition of knowledge
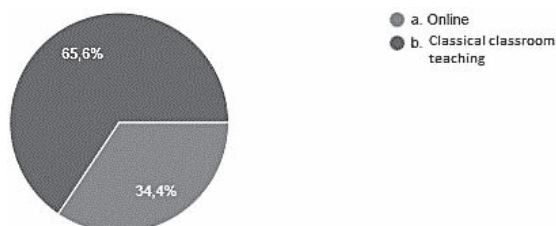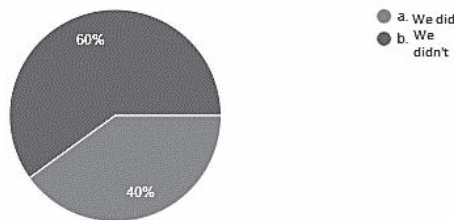

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Figure 2 shows a better or more practical form of teaching (between the online form and the classic form of teaching) to acquire knowledge according to the respondents. Thus, 65.6% of respondents believe that the best, i.e. more practical form of teaching (between online form and classic form of teaching) for acquiring knowledge is the classic form of teaching in the classroom, while 34.4% of respondents have the opposite opinion. Given the results shown in Figure 2, it can also be said that based on them, the set hypothesis H_0 is accepted.

Also, when interviewing respondents, the question was: "In which subjects are the base online form of teaching for respondents to facilitate the acquisition of knowledge compared to the classical form of teaching (specify subjects for which you can make your comparison)", in this question respondents chose that in the subject of web programming a better online form of teaching for easier acquisition of knowledge compared to the classical form of teaching and in the subject of web design. According to the respondents, the classic form of teaching for easier acquisition of knowledge is in the subject of mathematics and the Croatian language.

Figure 3. Display whether the respondents used LMS systems (learning management systems) in certain subjects during online classes

Source: the creation of the author

Figure 3 shows whether the respondents used LMS systems (learning management systems) in individual subjects during online classes. Thus, 60% of respondents used LMS systems (learning management systems) in individual subjects, while 40% of respondents did not use LMS systems.

Figure 4. View of the LMS system during the online classes used by the respondents
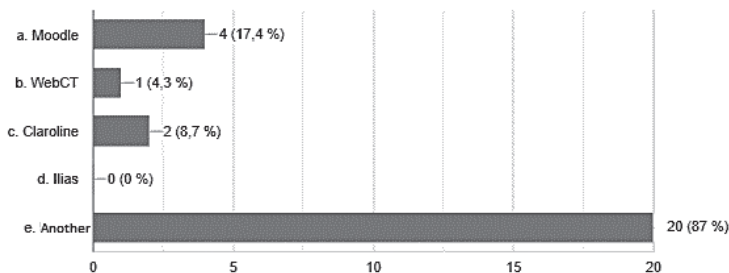
Source: the creation of the author

Figure 4 shows the LMS systems with a bar graph during the online classes used by the respondents. During online classes, students used (17.4% of respondents) Moodle, Claroline (8.7% of respondents), and WebCT (4.3% of respondents), while other LMS systems were used by 87% of respondents.

Figure 5. Presentation of the results of whether the respondents worked in teaching with LMS systems during the classical way of teaching
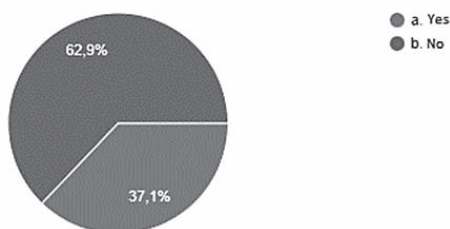
Source: the creation of the author

Figure 5 shows the result of whether the respondents worked in teaching with LMS systems during the classical way of teaching or not. The majority of respondents (62.9%) stated that they did not work with LMS systems during the classical way of teaching, while 37.1% of respondents worked in teaching with LMS systems during the classical way of teaching.

Figure 6. Presentation of respondents' opinions on which are more practical systems for teaching processes (LMS systems or LCMS systems)
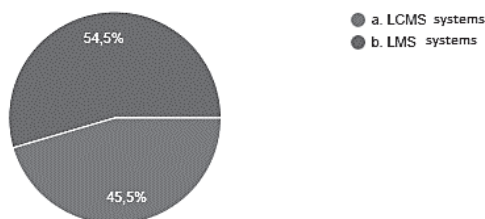
Source: the creation of the author

Figure 6 shows the respondents' opinions on which are more practical systems for teaching processes (LMS systems or LCMS systems). The majority of respondents (54.5%) chose that LMS systems are more practical for teaching processes.

Figure 7. Presentation of the survey results on whether it is easier and more practical to participate (according to the respondents) in online teaching (during online teaching) from general education subjects or vocational subjects
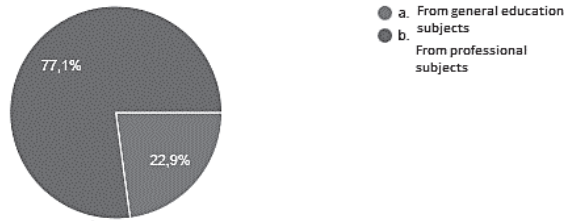
Source: the creation of the author

Figure 7 shows the result of the survey on whether it is easier and more practical to participate (according to the respondents) in online teaching (during online teaching) from general education subjects or vocational subjects. Thus, 77.1% of respondents chose the option of making it easier and more practical to participate (according to respondents) in online classes (during online classes) in vocational subjects while a minority of respondents 22.9% disagreed, with how easier and more practical to participate (according to respondents) in online teaching (during online classes) in general education subjects. Based on the results shown in Figure 7, the acceptance of hypothesis H_0 is also partially confirmed. Also, based on the survey, respondents determined which tool they used the most in online teaching. They used most MS Teams during online classes.

Figure 8. Presentation of the results of the survey on the further use of tools ("today") which were intended primarily for online teaching (during COVID) in the teaching process for easier acquisition of knowledge and easier access to materials in digital form
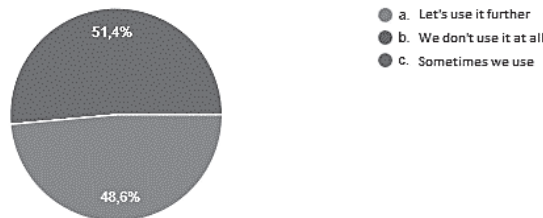
Source: the creation of the author

Figure 8 shows the results of a survey on the continued use of tools ("today") that were intended primarily for online teaching (at the time of COVID) in the teaching process to facilitate knowledge acquisition and easier access to digital materials. Thus, 51.4% of respondents (mostly) stated that they sometimes use tools ("today") that were intended primarily for online teaching (during COVID) in the teaching process for easier acquisition of knowledge and easier access to materials in digital form, while 48.6% of respondents stated that they use further tools that were intended primarily for online teaching (at the time of COVID) in the teaching process for easier acquisition of knowledge and easier access to materials in digital form.

Figure 9. Presentation of the objectivity of assessment according to the opinion of respondents and experience about the time in which online classes took place and the time of the classic form of teaching
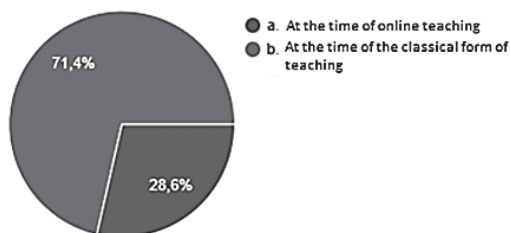
Source: the creation of the author

Figure 9 shows the objectivity of assessment according to the opinion of respondents and experience about the time in which online teaching took place and the time of the classic form of teaching. The majority of respondents, 71.4% chose that more objective assessment was during the classical form of teaching, while 28.6% of respondents said that more objective assessment was during online teaching, which is another evidence to confirm the acceptance of hypothesis H_0.

The advantages of the research can be seen based on the available relevant sample on the basis in which the relevant data were collected, which served to accept and reject the hypotheses. The advantage is also evident when it comes to the financial aspect in terms of using open source tools, which are free and used to create an online survey. Google forms were used in the research for the faster collection of relevant data and to easily structure data and display research results using Google spreadsheets, while the limitations in this research were almost non-existent, which is certainly a mitigating circumstance for the researcher and the entire scientific activity.

6. Conclusion

The paper gives exhaustive definitions of the online form of teaching and the classical form of the teaching process from relevant sources, and scientific articles. Based on the research in this research paper on the topic: "Comparison of online teaching using IT technologies and classical forms of teaching in classrooms" we come to the conclusion that hypothesis H_0 is accepted, which reads: "for students is more practical classical teaching in the classroom than online teaching knowledge and students are also easier and more practical to participate in online teaching in vocational subjects than in general education and more objective assessment according to respondents during the classical form of teaching ", while hypothesis H_1 was rejected based on the results obtained by surveying respondents shown images: one, two, seven and nine. During the survey, the respondents also asked the question: "In which subjects are the online form of teaching better for respondents to facilitate the acquisition of knowledge compared to the classical form of teaching (specify subjects for which you can make your comparison)", in this question respondents chose that subject programming for the web better online form of teaching for easier acquisition of knowledge compared to the classical form of

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teaching and in the subject design for the web. According to the respondents, the classic form of teaching for the acquisition of knowledge is in the subject of mathematics and the Croatian language, while surveying the respondents determined the tool that they used the most in online teaching. So, they used most MS Teams during online classes.

LITERATURE

1. Ainaab T., Tariq, A. R., and Ruhee, B. (2022). The Significance and Scope of E-learning in Covid-19 Pandemic. IOSR Journal of Humanities and Social Science (IOSR-JHSS), 27(03), 04-06.

2. Allen, E., and Seaman, J. (2006). Making the grade: Online education in the United States, Needham, MA: Sloan-C.

3. Alyoussef, I. (2021). E-Learning System Use During Emergency: An Empirical Study During the COVID-19 Pandemic. In Frontiers in Education, Frontiers.

4. Arbunić, A., and Kostović-Vranješ, V. (2007). Nastava i izvori znanja. Odgojne znanosti, 9(2), 97-111.

5. Bakia, M., Shear, L., Toyama, Y., and Lasseter, A. (2012). Understanding the Implications of Online Learning for Educational Productivity. Washington, DC: U.S. Department of Education, Office of Educational Technology.

6. Daniel, S. J. (2020). Education and the COVID-19 pandemic. Prospects, 49(1), 91-96.

7. Dwidienawati, D., Abdinagoro, S. B., Tjahjana, D., & Gandasari, D. (2020). E-Learning Implementation during The COVID-19 outbreak: The Perspective of Students and Lecturers. Journal of Social Sciences, 48(4), 1189-1201.

8. Bunn, J. (2004). Student persistence in a LIS distance education program. Australian Academic & Research Libraries, 35(3), 253-269.

9. GoogleForms. URL: https://www.google.com/. (21.5.2022).

Sažetak

USPOREDBA ONLINE NASTAVE KORIŠTENJEM IT TEHNOLOGIJA I KLASIČNOG OBLIKA NASTAVE U UČIONICAMA

U radu na temu: „Usporedba online nastave korištenjem IT tehnologija i klasičnog oblika nastave u učionicama" su prikazani rezultati ankete koji pokazuju: koji je za ispitanike najpraktičniji oblik nastave za stjecanje znanja, kod kojih predmeta je ispitanicima bolji online oblik nastave za lakše stjecanje znanja u odnosu na klasični oblik nastave, kod kojih predmeta je ispitanicima bolji klasični oblik nastave (u učionici) za lakše stjecanje znanja u odnosu na online oblik, jesu li ispitanici prilikom online nastave koristili LMS sustave (sustave za upravljanje učenjem) kod pojedinih predmeta, koje LMS sustave su ispitanici koristili za vrijeme online nastave, jesu li ispitanici radili u nastavi s LMS sustavima za vrijeme klasičnog načina odvijanja nastave, koje je mišljenje ispitanika o tome koji su praktičniji sustavi za odvijanje nastavnih procesa, je li lakše i praktičnije ispitanicima sudjelovati (prema njihovom mišljenju) u online nastavi (za vrijeme odvijanja online nastave) iz opće obrazovnih predmeta ili iz strukovnih predmeta, koji alat za online nastavu su ispitanici najčešće koristili, koriste li ispitanici dalje alate („koriste li danas alate") koji su bili namijenjeni online nastavi (u vrijeme COVID-a) u nastavnom procesu za lakše stjecanje znanja i lakši pristup materijalima u digitalnom obliku te koje je mišljenje ispitanika o objektivnošću ocjenjivanja prema njihovom iskustvu uzimajući u obzir vrijeme online nastave te vrijeme odvijanja klasičnog oblika nastave.

Ključne riječi: *nastava na daljinu, klasična nastava, informacijska tehnologija, poučavanje, on line anketa.*