Communication Between Students and Teachers in a Distance Learning Environment During the COVID-19 Pandemic in Serbia

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Abstract The COVID-19 pandemic affected the work of educational institutions, which had to adapt to new circumstances. The authors investigated the impact of online learning on student-teacher communication at the Department of Business Studies in Blace in Serbia. The aim of the authors is to analyze how online learning affects the communication between students and teachers and investigate the level of productivity and creativity of students in the new environment. The research study was conducted through a structured online survey using a random sampling technique. In the traditional way of organizing classes, face-to-face classes, students are more motivated and engaged in learning, and deprived of a sense of social isolation. The results of the research prove that students need more frequent interactive dialogue with teachers through formal and informal communication channels. Also, the authors will suggest possible ways to improve the productivity and creativity of students in the online environment.

Keywords:: communication, online learning, pandemic, teaching, technology.

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1 Introduction

The whole world is still facing the COVID-19 pandemic. In March 2020, all educational institutions in Serbia switched to online teaching activities, which meant that communication between teachers and students is fully realized through a global computer network. Depending on the institution itself, its technical capabilities, the readiness of the teaching staff, etc., the ways of teaching were different. At the Department of Business Studies Blace, online teaching was realized using the Moodle platform, through which teachers posted teaching materials for learning and self-testing, while consultations were conducted through formal (email, zoom, skype ...) and informal communications channels (viber, whatsup and other social networks).

The importance of studying communication, especially in the education sector, is reflected in its contribution to improving learning and creating positive attitudes between teachers and students. The goal of communication in the online environment is identical to the goal that is achieved face to face: connecting; exchange of information; understanding. Accordingly, fostering a sense of community in online classes will make learning more meaningful and can help students stay connected. When teachers communicate with students, whether it is a face-to-face lecture or online class, they do so for the purpose of transferring knowledge or information in order to understand and develop relationships. When traditional experience changes in favor of computer-based education in which students learn from their homes or offices and may never see the faces of their teachers or colleagues, communication is required to be more planned because it lacks teacher body language. The advantage of using body language and facial expressions in traditional classes helps teachers to connect and convey their message to students. When communication is online, teachers do not have the advantage of using body language to help their students communicate. Knowing the weaknesses of communication in an online environment can help teachers decide how to establish timely and appropriate communication and how to communicate effectively with their students.

The aim of this paper is to investigate the impact of online learning on teacher-student communication during the Covid-19 pandemic, the level of student productivity and creativity, and to evaluate and suggest ways to improve teacher-student communication. In accordance with the above, the aim of this paper is to provide answers to the following research questions: (1) What impact does online learning have on communication between teachers and students? (2) How can communication between teachers and students in educational institutions be improved? (3) What are the problems that students face in online learning and does online learning have a negative impact on student engagement and their level of productivity as a whole?

2 Literature review

The concepts of distance learning, e-learning and online learning are mentioned in the literature dealing with the study of the teaching process via the Internet (Moore et al., 2011). Distance learning has a history of almost two centuries (Spector et al., 2008). During this time, the means of learning as well as the ways of distributing them to students have changed significantly. Online and e-learning have historically appeared as terms in the 1980s. Although many equate them, there are differences between them, although there is no mutual agreement. The design of different types of learning environments depends on the learning objectives, the target audience, the approach (physical, virtual and/or both) and the type of content.

Distance education is the most well-known term used to describe the concept of distance learning for all participants who are geographically distant from each other. Over time, different definitions have emerged, but when computers became involved in the educational process, the proposed definition included the delivery of teaching materials, using print and electronic media (Moore, 1990). Other forms of learning have emerged, such as online learning, e-learning, online collaborative learning, virtual learning, web-based learning, etc. (Conrad, 2006). Common in all definitions is that this form of teaching takes place between two parties (students and teachers), is held at different times and/or in different places and uses different forms of teaching materials. Many researchers believe that e-learning is accessible using web-based technology tools, where content and teaching methods are delivered online or offline, but also via CD-ROM (Benson et al. 2002; Clark, 2002). However, there are those who believe (Ellis, 2004) that this type of learning, in

addition to the above, includes audio and video tapes, satellite broadcasting and interactive television. Researchers (Tavangarian et al. 2004) state that e-learning is not only procedural but also shows a certain transformation of experience into individual knowledge through the process of building knowledge.

Online learning is the most difficult to define from the three terms mentioned. Most authors describe online learning as access to learning experiences through the use of technology (Benson, 2002; Carliner, 2004; Conrad, 2002). They believe that online learning is a newer version of distance learning that, in a non-traditional way, improves students' access to educational opportunities. Other authors discuss not only the availability of online learning, but also the possibilities of its connectivity, flexibility, and ability to promote different interactions (Ally, 2004; Hiltz & Turoff, 2005; Oblinger & Oblinger, 2005).

Today, the development of information and communication technologies has enabled synchronous online interactions that take place in real time, offering almost the same quality of teaching as in a face-to-face environment, in which active student-centered learning techniques are increasingly promoted. Online teaching that takes place in real time, in addition to the great advantage that is reflected in the teacher-student interaction, gives the possibility of recording and later reproduction of lectures in offline mode.

A number of studies indicate statistically significant positive effects of online learning including improved learning as measured by test scores, student engagement, increased understanding, greater sense of community, and reduced withdrawal or failure (Nguyen, 2015). Bangert (Bangert, 2006) identified four factors related to student satisfaction with online courses related to interaction and communication between students and teachers, time spent on a particular task, active learning and student engagement in learning, and cooperation among students themselves. The empirical evidence presented in another study (Hiltz et al., 2000) supports the assumption that learning outcomes in situations where students are actively involved in joint (group) online learning are equally good or better than those resulting from traditional teaching. On the other hand, learning outcomes are worse when students individually receive teaching material and send their work to teachers.

What is the disadvantage of online learning? Most of the participants in the research conducted by Boling and his associates (Boling et al., 2012) viewed online learning as a process that leads to individualization of learning due to restrictive interaction with others. Students described the feeling of isolation from their teachers, colleagues as well as the content of the course itself, which was mostly text-based. Most of the tasks set limited the students' ability to develop a higher level of cognitive abilities and creative thinking.

Wonderwell (2003) described the problems students face during online learning, especially those who, without interacting with others, find the atmosphere during online learning rather impersonal. Very similarly, McConnell (2006) identified issues related to the interpersonal aspects of online communication. Students often felt lonely, overshadowed by other members, or reluctant to share their ideas publicly. Murphy and his associates (Murphi et al., 2001) pointed out the weaknesses of online learning through a series of case studies, which are reflected in the lower engagement and interactivity of students, but also the lack of immediacy due to lack of nonverbal communication. Other authors (Brown & Liedholm, 2002; Hiltz et al., 2000) found in studies evaluating learning outcomes that students in the online teaching format showed significantly worse test results compared to colleagues who followed classes in a conventional way.

3 Research methodology

Non-experimental, quantitative research without repeated measurements was chosen as the general research method. For the purposes of data collection, a questionnaire was created to examine selected claims. An appropriate sample was used in the research, which included students from all three years of study at the Department of Business Studies in Blace. The survey was conducted online, by sending a questionnaire to the e-mail addresses of students. The researcher explained the purpose of the research to the respondents in writing and gave instructions on how to fill in the questionnaire. Each completed questionnaire was forwarded to the researcher through the management of the Department, which ensured the anonymity of the respondents who participated in the research. The survey was conducted in January 2021.

The task of the respondents was to assess on a 5-point Likert scale the extent to which they agree with the statements stated in the questionnaire (1 - strongly disagree; 2 - disagree; 3 - neither agree nor disagree; 4 - agree; 5 - strongly agree). In addition, there were questions about how to improve online learning, where respondents could choose the listed options to improve communication with teachers. All analyzes in the research were performed using the software package SPSS for Windows, version 21. The final sample consisted of 242 respondents. Out of the total number, 147 female and 95 male respondents completed the survey. The much higher involvement of female respondents (60.7%) compared to male respondents (39.3%) could be explained not only by the larger number of female students enrolled in the Department of Business Studies, but also by their desire to complete the survey. Regarding the age structure of the respondents, most of them are between 18 and 21 years of age (64.9%), while 12.8% of the total number of respondents are older than 35 years of age, which is fully in line with the age structure all enrolled students in the Department. The largest number of respondents enrolled in the second (51.2%) and third year of study (47.1%), while only 4 respondents from the first year of study participated in the survey. At the same time, 32% of the total number of respondents are employed, while 68% are not employed. The structure of respondents according to the study program shows that the respondents from the study programs Taxes and Customs (37.2%), Finance and Accounting (24.4%) and Computing and Informatics (20.7%) participated in the survey, which it is not surprising considering that the largest number of students enrolled in the Department decided on the mentioned study programs.

It is also important to provide information on the frequency of online learning. For example, out of the total number of respondents, almost 80% of them use the online way of acquiring knowledge for the first time, while only 20% of the respondents stated that they have used online learning before. Interestingly, most respondents over the age of 30 do not encounter online learning for the first time, suggesting a possible conclusion that older students were likely to apply for certain online courses or training for non-formal education. In accordance with the question of how to follow online classes, 28% of respondents said that they used the Moodle platform, the same number of respondents used e-mail in addition to the platform, while 27% of them used only e-mail in communication with teachers. Other forms of monitoring of teaching (video lectures in online/offline mode) were represented in

a small percentage, given that a small number of teachers used these technical possibilities.

4 Research results

Analysis of data collected through an online questionnaire entitled "Online learning and its impact on communication" distributed to students of the Department of Business Studies Blace shows that 45% of respondents were satisfied with the way of online teaching, 37% disagreed with this statement, while 21% of respondents took a neutral position on the issue of satisfaction with the implementation of online learning. In other words, more than half of all respondents did not express satisfaction with the implementation of online classes at the Department.

When asked about their satisfaction with formal (moodle platform, e-mail, video lectures) and informal ways of communicating with teachers (viber, whatsapp, social networks), respondents did not express their satisfaction, they are even more dissatisfied with informal channels of communication with teachers. Less than half of the respondents are satisfied with formal communication channels (48.7%), while slightly less, ie 43.4% of respondents are satisfied with informal communication channels. The vast majority of teachers organized classes by posting learning materials in textual form on the platform or by e-mail, while only a few used informal communication channels to interact in real time. In line with the above, it is not surprising that the respondents are not satisfied with the informal ways of communication because the teachers used them rather sparingly in online teaching.

Table 1: Online learning and impact on communication

Questions	Scale	Frequency	Percent	Cumulative Percent
Satisfaction with the realization of online teaching Mean – 3.15 Std. deviation - 1.356	1	39	16.1	16.1
	2	42	17.4	33.5
	3	51	21.1	54.5
	4	63	26.0	80.6
	5	47	19.4	100.0
Satisfaction with formal channels of communication with the teacher Mean – 3.17 Std. deviation – 1.391	1	41	16.9	16.9
	2	44	18.2	35.1
	3	39	16.1	51.2
	4	69	28.5	79.8

	5	49	20.2	100.0
Satisfaction with informal channels of communication with the teacher Mean – 3.00 Std. deviation – 1.440	1	53	21.9	21.9
	2	45	18.6	40.5
	3	39	16.1	56.6
	4	59	24.4	81.0
	5	46	19.0	100.0
Satisfaction with interaction with the teacher Mean – 2.69 Std. deviation – 1.301	1	55	22.7	22.7
	2	65	26.9	49.6
	3	47	19.4	69.0
	4	51	21.1	90.1
	5	24	9.9	100.0
The teacher gives clear instructions regarding my pre-examination obligations Mean – 3.23 Std. deviation – 1.421	1	43	17.8	17.8
	2	36	14.9	32.6
	3	43	17.8	50.4
	4	63	26.0	76.4
	5	57	23.6	100.0
The teacher defines clear criteria for assessing my pre-examination obligations Mean – 3.16 Std. deviation – 1.446	1	52	21.5	21.5
	2	28	11.6	33.1
	3	44	18.2	51.2
	4	66	27.3	78.5
	5	52	21.5	100.0
I understand the materials that the teacher delivers Mean – 3.24 Std. deviation – 1.344	1	38	15.7	15.7
	2	36	14.9	30.6
	3	45	18.6	49.2
	4	77	31.8	81.0
	5	46	19.0	100.0
Online teaching stimulates my desire to learn Mean – 2.64 Std. deviation – 1.307	1	61	25.2	25.2
	2	59	24.4	49.6
	3	51	21.1	70.7
	4	48	19.8	90.5
	5	23	9.5	100.0
Learning from home helps me focus more on my studies Mean – 2.80 Std. deviation – 1.379	1	56	23.1	23.1
	2	57	23.6	46.7
	3	41	16.9	63.6
	4	55	22.7	86.4
	5	33	13.6	100.0
Online learning encourages my creativity Mean – 2.78 Std. deviation – 1.342	1	55	22.7	22.7
	2	58	24.0	46.7
	3	42	17.4	64.0
	4	60	24.8	88.8
	5	27	11.2	100.0

Dissatisfaction with formal and informal channels of communication with teachers suggests that respondents, pointing to various problems of online learning, mostly pointed out limited communication with teachers. Therefore, close to 50% of respondents believe that interaction with the teacher was difficult during online teaching, ie 69% of respondents did not express satisfaction with the interaction with the teacher, of which almost half of them are not satisfied at all. Bearing in mind that a small number of teachers used informal communication, ie that most posted teaching material exclusively via platform and e-mail, we can assume that dissatisfaction with interaction with teachers means both quality and frequency of communication with teachers during online classes. When it comes to respondents' satisfaction with the quality and understanding of the delivered learning material, as well as the way of defining pre-examination activities and criteria for assessing them, half of the respondents expressed satisfaction, while the other half are not satisfied. In fact, out of the total number of respondents, as many as 50% of them have a neutral attitude on all these issues. It is obvious that the way of presenting the teaching material, instructions and criteria for mastering the pre-examination activities of students in an exclusively textual form, without accompanying audio or visual recording greatly affects the outcomes of online learning.

The effects of online learning on increasing creativity and productivity in learning have been negative, given that two thirds of respondents believe that online learning does not encourage their desire to learn and creativity, nor does it help them focus on learning. It is possible that teachers did not sufficiently motivate students to learn, because teachers were not additionally motivated to participate in challenging activities, actively participate in online teaching, enjoy and adopt a deep learning approach and show greater performance, perseverance and creativity (Schunk & Zimmerman, 2012). It is also possible that most of the text-based learning materials provided limited students' ability to develop a higher level of cognitive ability and creative thinking. Also, two thirds of the respondents believe that the online way of organizing classes reduces the exchange of thoughts and ideas between them. Only 33% of respondents confirmed that during online classes there is a greater opportunity to exchange ideas with colleagues.

The only advantage of online learning pointed out by the respondents included in this research is that it reduces costs and saves time. More than 60% of respondents believe that online learning and the impossibility of attending classes realized in the classrooms and amphitheaters of the Department reduces the costs of studying, ie travel and food, which saves time that would be spent on coming and going to active classes. The results are not at all surprising, bearing in mind that the place of residence of the largest number of respondents is quite far from the place of study.

5 Concluding remarks

The results of the study show that most students still prefer classes in classrooms due to numerous problems they face during online classes, such as lack of motivation and desire to learn, reduced levels of communication with teachers, lack of creativity and mutual exchange of thoughts and ideas. This study actually found that online learning has a negative impact on communication and the effectiveness of communication between teachers and students. Although a number of students were satisfied with the implementation of online teaching at the Department, most still did not express satisfaction with the quality and frequency of interaction with teachers through formal and informal communication channels. Second, most students agree that online learning has a negative impact on communication between teachers and students, and most agree that interaction with teachers is quite limited and rare. Third, most students do not feel encouraged to participate in online classes, their engagement in learning has not increased during their online classes, nor has their understanding of the teaching material increased.

The results we have obtained are in full agreement with the findings of Boling and co-workers (Boling et al., 2012) that online learning leads to individualization of learning due to restrictive interaction with others, ie that the atmosphere during online learning is quite impersonal (Vondervell, 2003), as well as the weaknesses of online learning reflected in the lower engagement and interactivity of students, but also the lack of immediacy due to lack of nonverbal communication (Murphi et al., 2001). In online learning, it is necessary to create opportunities for greater and better interaction and communication between students and their teachers. In that sense, we recommend and encourage teachers to communicate more often with their students in real time, which will raise the level of their mutual interaction, as well as to contact each student individually when they notice that their results are not as

expected. It would be best for teachers to communicate as much as possible with their students in a more informal way, using viber, whatsapp or other social networks, as well as to deliver teaching material, except in text form, through recorded video lectures or hold video/audio lectures in real time.

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