Students' Opinions and Attitudes about Online Teaching

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Abstract The appearance of the pandemic changed everyday life on the entire planet in a very short time. In order to preserve health, all possible activities were digitized. Traditional teaching has been replaced by distance learning. The educational staff in our country has started online teaching in a very short time. Curricula have begun to be realized via the Internet applications. In order to improve online teaching, it is necessary to examine its shortcomings and advantages both by teachers and students. The results of research related to students' opinions and attitudes about the organization of online teaching and their personal opinion are presented in the paper.

Keywords: online teaching, students, internet applications, opinions, attitudes

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1 Introduction

Throughout the history of education, professors and various researchers have been intrigued by the potential of technology to help transform education and improve the quality of learning for students (Deretić et al., 2020a). In the era of global digitalization and expansion of IT technology, knowledge is a precedent for an advanced and developed society (Geri & Gigi, 2011). Without a quality and well-organized community education system, it is difficult to follow world trends. The organization of the educational system in our country is implemented through the planned curricula and the choice of content that achieves the goal of teaching. The introduction of innovations in teaching ensures the quality of the educational system. "It is considered that the appearance of the new information technology crossed the Rubicon, that the gradual replacement of the current organization and realization of teaching and learning with a new concept and new technology is imminent" (Vilotijević, 1999). Replacing the traditional form of teaching with distance learning or online teaching is one of the immediate trends around the world and experts believe that it is desirable in today's education. Distance working has been on the rise in recent years, but in 2020, with the sudden onset of a global pandemic, even companies that did not believe in the power of remote working had no choice but to embrace the trend (Radulović et al., 2022).

2 Online teaching vs. Traditional teaching

For the past two years or more, distance learning has been the only choice in most countries around the world. The appearance of the pandemic changed everyday life around the planet in a very short time, and in order to preserve health, crisis headquarters and governments introduced the necessary lookdown. Classes switched to distance learning almost overnight. It cannot be said that any country was ready for such a speed of introducing "innovation" in teaching. The problems that arose during the realization of online classes were solved and overcome in the process. Preparations for this type of teaching took place quickly and necessarily led to many controversies, in our country and in the world. Juan Song and associates from the Center for Education in China presented relevant conclusions on the high degree of psychological adaptation of teachers to online teaching where they promote effective adoption of online teaching in primary and secondary schools (Online Teaching for Elementary and Secondary Schools During COVID-19, 2020).

The advantages and disadvantages of online teaching have become one of the main topics of research today. Regarding higher education and various courses within the university, online education needs to be improved and incorporated into the system. Regarding the complexity of the educational system in primary and secondary schools, which is based on educational work, educational and functional goals, distance learning requires a more complex form of preparation in order to achieve these goals (Suzić, 2005). Internet platforms provide a multitude of opportunities for distance learning. Using all the possibilities and adapting to the student is an important task in teaching and achieving goals. There was no preparation of students for online classes and the use of Internet applications. At the beginning, the classes could be watched on national television, both for primary schools and secondary schools of various educational profiles. Teachers kept in touch with their students through social networks, viber, whatsapp and other applications. Very quickly, the schools organized and started to teach without hindrance with the help of internet applications from Google Classroom, Teams platform or Moodle. The idea of organising distance learning is much older than the advent of modern technologies (Deretić et al., 2020b). Among them, the most common is the Google classroom, where students use the personal code to join the classroom and thus follow the lessons. Every teacher has their own Google classroom from their subject. In this way, students receive all the necessary materials for the adoption of teaching materials. These can be Word documents, presentations (Power point), MP3 for foreign languages and various links where can be found more information about that teaching unit, etc. The traditional classroom was replaced by Google meet or Zoom, where all students can turn on their cameras and participate in the work. Students can enter the Google classroom at any time and get information about the subject or make contact with the teacher. The directions of future development in education lead to the development of chatbots, and one of the examples in the Republic of Serbia is the chatbot ADA at Belgrade Business and Arts Academy of Applied Studies (Matić et al., 2022; Vukomanović et al., 2022).

3 Methodological part

3.1 Research problem

Due to the pandemic and the transition of schools to online teaching or distance learning, students were given greater freedom in organizing their time, but also

greater responsibility in learning. Classroom presence is changing with internet applications and video platforms. Video conferencing has become essential not only in the business world, but also in education, healthcare and many other fields (Gladović et al., 2020). The current practice of using the Internet for entertainment with a large number of students must change. In their research, Nikčević and Marković came to significant results which indicate that there are significant differences in the amount of Internet use for school and socializing between students with different success rates. Students with lower success use the Internet more for fun and socializing (Nikčević & Marković, 2014). Self-control and motivation in learning now occupy an important place in attending distance learning. The question is how and to what extent teachers can influence and have control over these important segments of learning. The subject of the research is related to the opinions and attitudes of students about online teaching and their readiness to attend distance learning.[1]

3.2 Aim and tasks of research

The aim of this research is to examine the attitudes of students about online teaching and to examine whether there are statistically significant differences in online teaching between high school students of different profiles in relation to traditional teaching.

3.3 Hypotheses

In accordance with the set subject and the goal of the research, the main hypothesis is that there are differences in terms of availability of educational material, quality of educational material, student activities, monitoring and measuring knowledge and positive opinion about online teaching in relation to students` success and school they attend. From the main hypothesis arise special hypotheses that read:

- There are statistically significant differences in students' opinions and attitudes about the availability of educational material between high school students of different educational profiles and between students of different academic achievement.

[1] Zakon o duševnem zdravju (ZDZdr), Uradni list RS, št. 77/2008.

- There are statistically significant differences in students' opinions and attitudes about the quality of educational material between high school students of different educational profiles and between students of different academic achievement.
- There are statistically significant differences in students' opinions and attitudes about student activities between high school students of different educational profiles and between students of different academic achievement.
- There are statistically significant differences in students' opinions and attitudes about monitoring and measuring students` knowledge between high school students of different educational profiles and between students of different academic achievement.
- There are statistically significant differences in students' opinions and attitudes about online teaching between high school students of different educational backgrounds and between students of different academic achievement.

3.4 Research methods and techniques

In accordance with the subject of our research, a descriptive method or survey method was used, by which we do not change anything in practice, but only observe. The research technique is the analysis of variance, where the comparison of arithmetic means between different groups of respondents was performed. The instrument used for the research is the Likert-type scale on five levels, constructed for the given research, through which the respondents expressed their views, i.e. the degree of agreement or disagreement with the proposed statement. The survey was anonymous. Independent variables are the school they attend and the success of the students. The dependent variables are 22 items that support the subtests. The verification of the metric characteristics of the instrument was performed on the basis of the Cronbach-alpha test and amounts to $\alpha = 0.71$, which concludes that the instrument is reliable and relevant for the given research (Cortina, 1993). Reliability of the subscale availability of educational material is $\alpha = 0.608$, subscale quality of educational material $\alpha = 0.71$, subscale student activity $\alpha = 0.73$, subscale monitoring and measuring student knowledge $\alpha = 0.73$ and subscale student opinion on online teaching $\alpha = 0, 73$.

3.5 Sample

The sample included 500 high school students of various educational profiles from Zaječar and Boljevac. Regarding the size of the sample, it can be concluded that the sample is representative and certain generalizations are possible within the population examined (Table 1). It can be seen from the Table 1 that the number of students in the school of economics is slightly less than the number of students in other schools.

Table 1: Structure of students in relation to the school they attend

School		Frequency	Percent
Valid	Medical	132	26,1
	Technical	142	28,1
	Grammar	137	27,1
	Economic	89	17,6
	Total	500	98,8

Source: author's research

It can be seen from the Table 2 that there are no students with insufficient and sufficient success, while there are also a small number of students with good success.

Table 2: Structure of students in relation to success

Success		Frequency	Percent
Valid	Excellent	298	58,9
	Very good	174	34,4
	Good	28	5,5
	Total	500	98,8

Source: author's research

3.6 Research results

The following tables (Table 3 – Table 7) presents the results of testing all sub-hypotheses in relation to the school they attend. The first hypothesis is that there are statistically significant differences in students' opinions and attitudes about the availability of educational material among high school students of different educational profiles and among students of different academic achievement.

Table 3: Differences among students in the expression of the examined constructs in relation to the school they attend (Post hoc) - Availability of educational material

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Availability of educational material	medical	technical	-1,27550*	,43603	**,004**
		grammar	,08715	,43985	,843
		economic	-,25707	,49464	,604
	technical	medical	1,27550*	,43603	**,004**
		grammar	1,36265*	,43189	**,002**
		economic	1,01844*	,48757	**,037**
	grammar	medical	-,08715	,43985	,843
		technical	-1,36265*	,43189	**,002**
		economic	-,34421	,49099	,484
	economic	medical	,25707	,49464	,604
		technical	-1,01844*	,48757	**,037**
		grammar	,34421	,49099	,484

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 4: Differences among students in the expression of the examined constructs in relation to the school they attend (Post hoc) - Quality of educational material

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Quality of educational material	medical	technical	-,54599	,31500	,084
		grammar	,19150	,31775	,547
		economic	-,17101	,35733	,632
	technical	medical	,54599	,31500	,084
		grammar	,73748*	,31200	**,018**
		economic	,37498	,35223	,288
	grammar	medical	-,19150	,31775	,547
		technical	-,73748*	,31200	**,018**
		economic	-,36250	,35470	,307
	economic	medical	,17101	,35733	,632
		technical	-,37498	,35223	,288
		grammar	,36250	,35470	,307

*. The mean difference is significant at the 0.05 level.

Source: author's research

Table 5: Differences among students in the expression of the examined constructs in relation to the school they attend (Post hoc) - Students` activities

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Students` activities	medical	technical	-1,12420*	,40570	**,006**
		grammar	-,87459*	,40925	**,033**
		economic	-1,36364*	,46023	**,003**
	technical	medical	1,12420*	,40570	**,006**
		grammar	,24961	,40184	,535
		economic	-,23944	,45365	,598
	grammar	medical	,87459*	,40925	**,033**
		technical	-,24961	,40184	,535
		economic	-,48905	,45683	,285
	economic	medical	1,36364*	,46023	**,003**
		technical	,23944	,45365	,598
		grammar	,48905	,45683	,285

*. The mean difference is significant at the 0.05 level.

Source: author's research

Table 6: Differences among students in the expression of the examined constructs in relation to the school they attend (Post hoc) - Monitoring and measurement

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Monitoring and measurement	medical	technical	-1,30004*	,39029	**,001**
		grammar	-,22484	,39371	,568
		economic	-,90892*	,44275	**,041**
	technical	medical	1,30004*	,39029	**,001**
		grammar	1,07520*	,38658	**,006**
		economic	,39112	,43643	,371
	grammar	medical	,22484	,39371	,568
		technical	-1,07520*	,38658	**,006**
		economic	-,68408	,43949	,120
	economic	medical	,90892*	,44275	**,041**
		technical	-,39112	,43643	,371
		grammar	,68408	,43949	,120

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 7: Differences among students in the expression of the examined constructs in relation to the school they attend (Post hoc) - Opinion about Online teaching

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Opinion about Online teaching	medical	technical	-1,07789*	,36070	**,003**
		grammar	-,59146	,36385	,105
		economic	-,93190*	,40918	**,023**
	technical	medical	1,07789*	,36070	**,003**
		grammar	,48643	,35727	,174
		economic	,14599	,40333	,718
	grammar	medical	,59146	,36385	,105
		technical	-,48643	,35727	,174
		economic	-,34044	,40616	,402
	economic	medical	,93190*	,40918	**,023**
		technical	-,14599	,40333	,718
		grammar	,34044	,40616	,402

*. The mean difference is significant at the 0.05 level.
Source: author's research

Based on the obtained results from Table 3 to Table 7, we can conclude that there are statistically significant differences among students of different educational profiles in relation to the availability of educational material. It can be seen that technical school students value the availability of educational material more than other schools. This confirms our hypothesis. The second hypothesis is that there are statistically significant differences in students' opinions and attitudes about the quality of educational material among high school students of different educational profiles and among students of different academic achievement. The difference was found only between the technical school and the grammar school, so it can be said that our hypothesis was partially confirmed.

The third hypothesis states that there are statistically significant differences in students' opinions and attitudes about student activities among high school students of different educational profiles and among students of different academic achievement. From the results, it can be seen that students of technical schools value student activities more in relation to medical school, as well as economic school in relation to medical school. This partially confirms our hypothesis.

The fourth hypothesis, which states that there are statistically significant differences in students' opinions and attitudes about monitoring and measuring student knowledge among high school students of different educational profiles and among students of different academic achievement, also indicates a higher score for technical students compared to high school and medical school. The fifth hypothesis, which states that there are statistically significant differences in students' opinions and attitudes about online teaching among high school students of different educational profiles and among students of different academic achievements, is also partially confirmed because the difference exists only among technical school students and medical school students. Nikčević and Marković came to the same results in examining the social attitude towards the Internet in relation to the school attended by Nikčević and Marković (2015).

Table 8: Differences among students in the expression of the examined constructs in relation to success (Post hoc) - Availability of educational material

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Availability of educational material	excellent	very good	-1,33665*	,33829	**,000***
		good	-3,03452*	,70084	**,000***
	very good	excellent	1,33665*	,33829	**,000***
		good	-1,69787*	,72197	**,019***
	good	excellent	3,03452*	,70084	**,000***
		very good	1,69787*	,72197	**,019***

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 9: Differences among students in the expression of the examined constructs in relation to success (Post hoc) - Quality of educational material

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Quality of educational material	excellent	very good	-,93373*	,24536	**,000***
		good	-1,31879*	,50832	**,010***
	very good	excellent	,93373*	,24536	**,000***
		good	-,38506	,52365	,462
	good	excellent	1,31879*	,50832	**,010***
		very good	,38506	,52365	,462

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 10: Differences among students in the expression of the examined constructs in relation to success (Post hoc) - Students` activities

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Students` activities	excellent	very good	-,75569*	,31934	**,018***
		good	-2,04674*	,66158	**,002***
	very good	excellent	,75569*	,31934	**,018***
		good	-1,29105	,68153	,059
	good	excellent	2,04674*	,66158	**,002***
		very good	1,29105	,68153	,059

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 11: Differences among students in the expression of the examined constructs in relation to success (Post hoc) - Monitoring and measurement

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Monitoring and measurement	excellent	very good	-1,46228*	,30189	**,000***
		good	-2,51031*	,62543	**,000***
	very good	excellent	1,46228*	,30189	**,000***
		good	-1,04803	,64429	,104
	good	excellent	2,51031*	,62543	**,000***
		very good	1,04803	,64429	,104

*. The mean difference is significant at the 0.05 level.
Source: author's research

Table 12: Differences among students in the expression of the examined constructs in relation to success (Post hoc) - Students` opinion about online teaching

Dependent Variable	(I) school	(J) school	Mean Difference (I-J)	Std. Error	Sig.
Students` opinion about online teaching	excellent	very good	-,26641	,28585	,352
		good	-1,24137*	,59221	**,037***
	very good	excellent	,26641	,28585	,352
		good	-,97496	,61006	,111
	good	excellent	1,24137*	,59221	**,037***
		very good	,97496	,61006	,111

*. The mean difference is significant at the 0.05 level.
Source: author's research

The given tables (from Table 8 to Table 12) presents sub-hypotheses in relation to students` success. From the results it can be seen that there are statistically significant differences between all examined groups. This contributes to confirming all the sub-hypotheses we have listed. This fully confirms our hypothesis.

4 Conclusion

The opinions and attitudes of students about the availability of educational material, the quality of educational material, their activities, monitoring and measuring their success and general opinion about online teaching were examined in the given research. The main hypothesis is that there are differences in terms of availability of

educational material, quality of educational material, students` activities, monitoring and measuring of knowledge and positive opinion about online teaching in relation to students` success, and the school they attend is fully confirmed. Statistically significant differences exist among all examined groups. Namely, the technical school values both the availability and the quality of educational material and has a better opinion on online teaching. Such results are expected considering the educational profiles of the technical school and the earlier use of the Internet for educational purposes. In relation to the success of students, it was concluded that weaker students value all the examined constructs more. This tells us that students with higher success would expect more from online teaching and online teaching applications. In its report, the Association of Innovative Teachers from Bosnia and Herzegovina gave relevant conclusions stating the importance of teacher feedback to students in terms of motivation and self-control of students. (Evaluation of online teaching during the Covid pandemic - 19 by parents and students in Bosnia and Herzegovina, March-June 2020 Report) In our instrument, items related to student feedback and contact between students and teachers were rated on average, indicating the need for further training for online teaching for both teachers and students.

References

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of applied psychology, 78(1), 98-104.

Deretić, N. N., Deretić G. N., Ilić, S., Mihajlović, G., (2020a). E-education: online courses and research studies. The 2020 IAI Book of Abstracts. Belgrade, Serbia. ISBN 978-608-4881-08-7. Available at: https://ia-institute.com/wp-content/uploads/2020/02/Book-of-Abstracts-27.2.2020-1.pdf [Accessed 15 December 2022].

Deretić, N., Franc, I., & Malešević, M. (2020b). An overview of tools in e-education. Vesnik, Časopis za teoriju i praksu društveno humanističkih nauka, vol. 6, no. 1-2, 65-74.

Geri, S., & Gigi, V. (2011). Internet mozak. Novi Sad: Psihopolis institute d.o.o.

Gladović, P., Deretić, N., & Drašković, D. (2020). Video conferencing and its application in education. Journal TTTP-traffic and transport theory and practice, 5(1), 45-48.

Matić, R., Kabiljo, M., Deretić, N., Vukomanović, A. (2022). Application of Chatbot at a Higher Education Institution in Republic of Serbia. 41st International Conference on Organizational Science Development Society's Challenges for Organizational Opportunities, March 23 – 25, 2022, Portorož, Slovenija, 605-616.

Nikčević, I., & Marković, E. (2014). Sposobnost učenika srednjih škola za korišćenje interneta u obrazovne svrhe. Sinteza 2014-Impact of the Internet on Business Activities in Serbia and Worldwide, 385-388.

Nikčević, I., & Marković, E. (2015). Etičko ponašanje adolescenata na internetu. In Synthesis 2015-International Scientific Conference of IT and Business-Related Research, Singidunum University, 5-9.

proMENTE, (2020). "Procjena online nastave tokom pandemije COVID-19 od strane roditelja, učenika i nastavnika," March – June 2020. [Online]. Available at: https://www.promente.org/index.php/bs/projekti/583-procjena-online-nastave-tokom-pandemije-covid-19-od-strane-roditelja-ucenika-i-nastavnika. [Accessed 15 December 2022].

Radulović, J., Deretić, N., Vujanovic, N., Matic, R., & Djurica, N. (2022). Challenges and Perspectives for Remote Work. 41st International Conference on Organizational Science Development Society's Challenges for Organizational Opportunities, March 23 – 25, 2022, Portorož, Slovenija, 841-654.

Song, H., Wu, J., & Zhi, T. (2020). Online teaching for elementary and secondary schools during COVID-19. ECNU Review of Education, 3(4), 745-754.

Suzić, N. (2005). Pedagogija za XXI vijek. Banja Luka: TT – Centar.

Vilotijević, M. (1999). Didaktika 1, 2, 3, Beograd: Zavod za udžbenike i nastavna sredstva.

Vukomanović, A., Deretić, N., Kabiljo, M., & Matić, R. (2022). An example of chatbot in the field of education in the Republic of Serbia. Journal of process management and new technologies, 10(1-2), 125-139.