

# Education after COVID-19, consequences and learned lessons

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**Abstract:** *The paper provides information about the teaching and learning consequences of the pandemic at Trakia University, Faculty of Technics and Technologies. During the pandemic period, all disciplines became available as e-learning materials - lectures, exam tests, test for self-preparation and etc. After pandemic period, the students' and academic staff opinion were collected as a part of research project by inquiry. The results of that questionnaire are shortly discussed. The students and teachers favour blended learning instead of full time distant remote digital training. Almost 81% of professors prefer traditional face-to-face teaching. A significant number of educators have expressed that their main difficulties during online courses stemmed from the absence of direct interaction with their students (44%) and a sense of isolation from the groups they instruct (31%). Nearly half of the students, about 45%, expressed that the primary factor preventing them from embracing online digital remote learning was the absence of direct interaction with their teachers. Additionally, 27% of students cited the feeling of isolation from their peers as another significant challenge. The remote digital learning during the COVID-19 caused a loss of students' motivation to learn, and after the pandemic educators mentioned a lowering in students' performance and deep understanding gaps of the subjects.*

**Keywords:** e-learning, online learning, e-assessments, students' opinion, academic opinion, digital remote e-learning.

## 1. Introduction

The pandemic dramatically changed education around the world, accelerating the acceptance of digital remote learning (Morgan, 2022; Islam & Abiona, 2023). Nevertheless, many researchers mentioned impairing the students' acquired knowledge that has a negative impact after the pandemic lockdown (Engzell, et al. 2020; Quan, 2021; Verma, et al. 2021).

The study aims to reveal the consequences of distance digital learning during the pandemic on the quality of acquired skills and knowledge, and the perceptions of students and teachers during and after the pandemic period.

## 2. Materials and methods

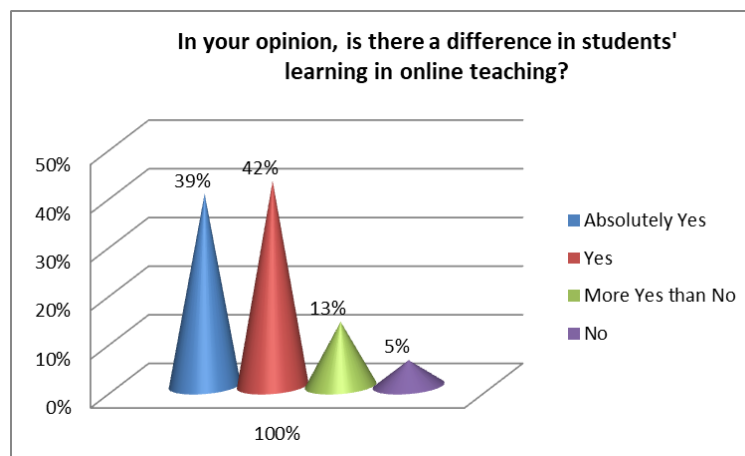
The assay was conducted across pedagogical personnel and students to evaluate the perception the challenges about digital remote learning during the

pandemic and after that period. 147 students from the Trakia University – Stara Zagora, Faculty of Technics and Technologies participated in the study, and 39 educators. The results are statistically processed and represented in the article.

### 3. Results and discussion

#### 3.1 Academic staff opinion according distant remote digital learning

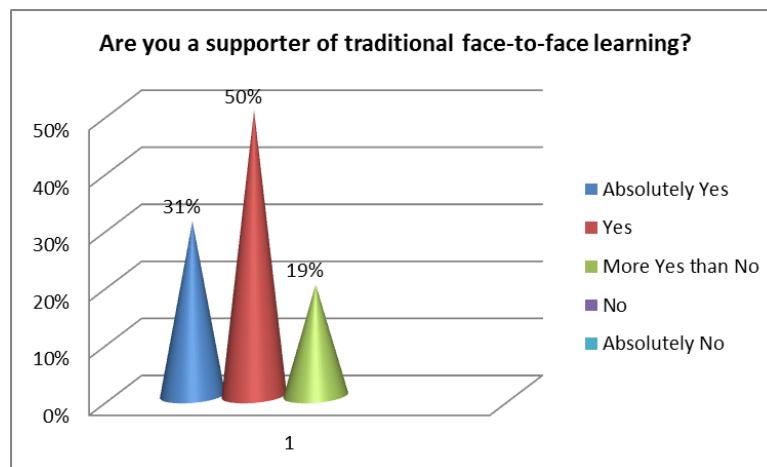
In Figure 1, the results show teachers' opinions on their students' achievements during the pandemic. Most teachers believe that their students' performance declined after the pandemic and that the knowledge gained during that time was not very deep. This sentiment is echoed by several authors (Gałazka & Jarosz, 2022; Hernández-Sánchez, 2022; Velásquez-Rojas et al., 2022; Islam & Abiona, 2023) who have found that virtual learning has led to reduced motivation and a significant decrease in students' grades. According to Islam & Abiona (2023), the direct in-person interaction between students and teachers cannot be effectively replaced by digital methods, and quick feedback may result in higher grades (Islam & Abiona, 2023).



**Figure 1.** In your opinion, is there a difference in students' learning in online teaching?

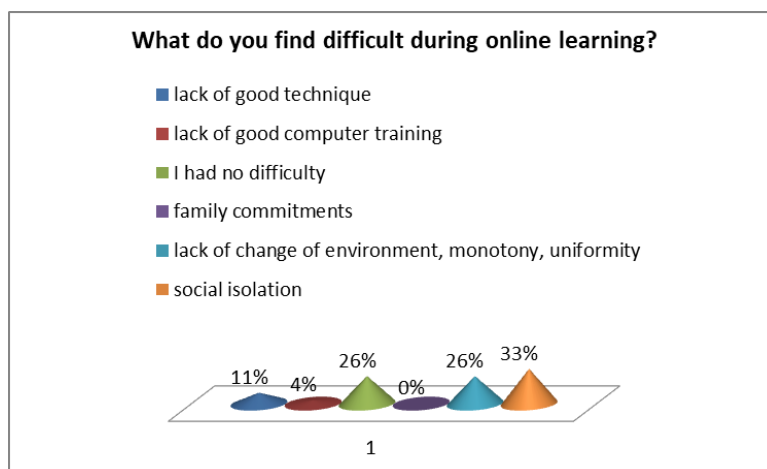
With the answers “*Absolutely yes*” - 39%; “*Yes*”- 42%; “*More Yes than No*”- 13%; “*No*”- 5% and “*Absolutely Not*”- 0%, tutors declared changes in acquiring knowledge by their students.

On the question “*Are you a supporter of traditional face-to-face learning?*” the answers were 31% - absolutely yes; 50% - yes; and 19% - more yes than no. There were no negative answers for the traditional face-to-face learning; all academic staff favours the classical training (see Figure 2).



**Figure 2.** Are you a supporter of traditional face-to-face learning?

During the COVID-19 pandemic, new teaching methods were introduced in education, leading to the modernization of educational approaches (Reed, 2021). However, social isolation posed a significant challenge for about 33% of academic teachers (Figure 3). For students, the lack of direct contact with the lecturer had a negative impact on about 45% of them (Figure 5).



**Figure 3.** What do you find difficult during online learning?

Another negative challenge is “lack of change of environment, monotony, uniformity” - 26% (Figure 3).

Most educators claim that the main challenges during online courses were the lack of direct contact with their students (44%; Figure 4), and isolation from the group they educate - 31% (Figure 4). Similar complications in the time of pandemic pointed the students (Figure 5), the isolation from the group (27%), and lack of direct contact with the teacher (45%).

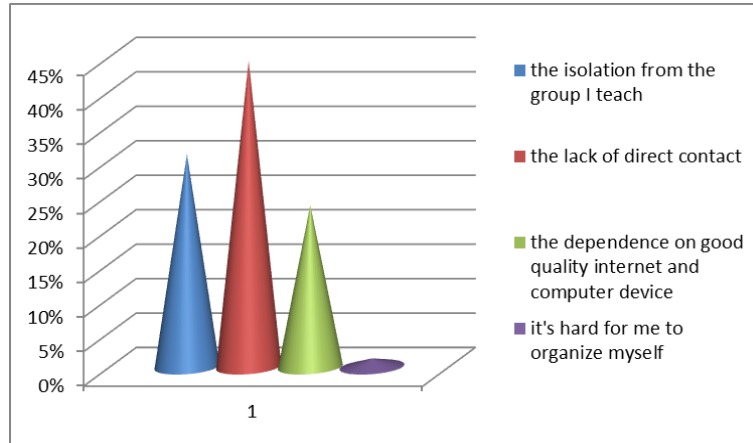


Figure 4. What you do not accept in online courses

The lecturers emphasized the importance of having access to high-quality internet and computer devices, with 23% considering it crucial and 19% of learners sharing the same sentiment (Figure 5). Only 1% of teachers mentioned that "It's hard for me to organize myself" (Figure 4), whereas 9% of students found it challenging (Figure 5).

### 3.2 Students preferences and opinion about digital online learning

Figure 5 display the result of the question “What you do not accept in online courses?”.

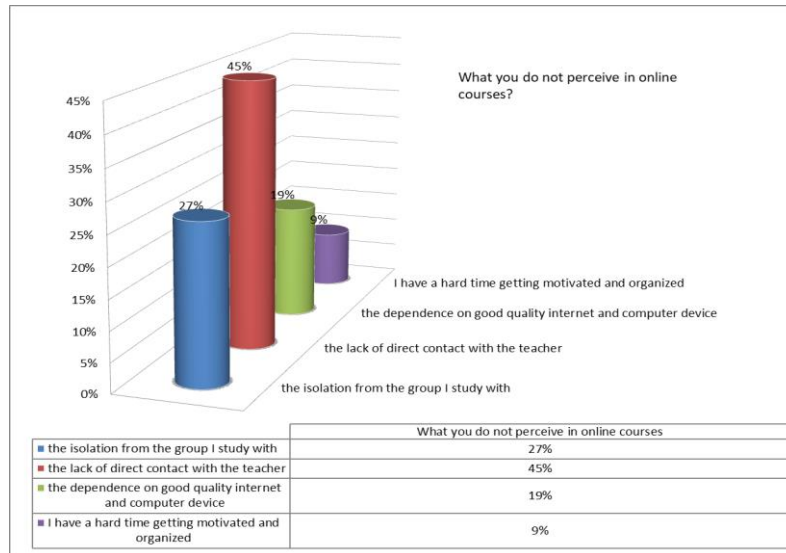
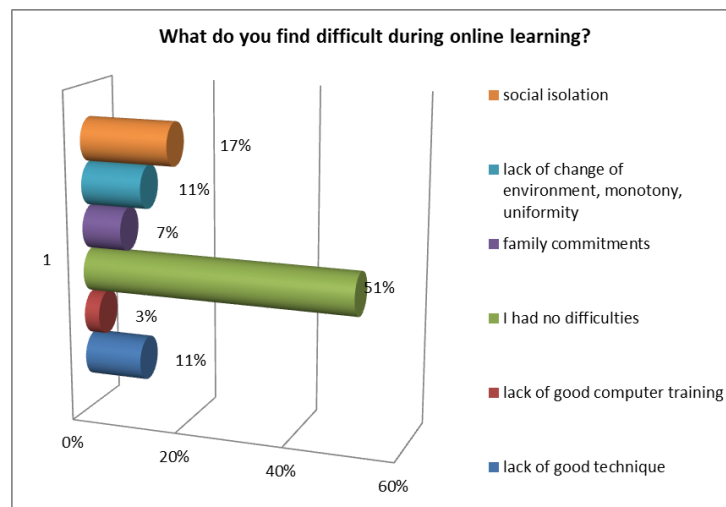


Figure 5. What you do not accept in online courses

Around 45% of students stated that the main reason for not accepting online digital remote learning was the lack of direct contact with the teacher. The second most common difficulty for them was the isolation from the group (27%; Figure 5). According to Chalim et al. (2022), after the pandemic, most students want to return to school for the same reason. Only a small number of students can concentrate well in the online learning process (Chalim et al., 2022).



**Figure 6.** What do you find difficult during online learning?

Research has shown that psychological distress and anxiety can affect students' ability to manage social and work responsibilities and perform well in remote learning. Around 42.9% of students experienced symptoms of generalized anxiety disorders ( $GAD-7 \geq 15$ ), and 53.6% had moderate to severe functional impairment ( $WSAS > 20$ ) (Godoy et al. 2021). It is essential for students to receive emotional support to overcome negative feelings and active support to exhibit appropriate behavior and effectively participate in post-pandemic education (Popławska et al., 2023).

#### 4. Conclusion

Traditional face-to-face learning in education stimulates and motivates students to progress in their studies. The close emotional connection that appears during that process between classmate and educators perhaps is one of the main reasons, which leads to improving students' performance. Our research found that almost 81% of professors prefer traditional face-to-face teaching. Many educators have reported that the main challenges during online courses were the lack of direct contact with their students (44%) and feeling isolated from the group they teach (31%). Similarly, students have also faced similar difficulties during the pandemic, citing the isolation from their peers and the lack of direct contact with

their teachers. Nearly 45% of students indicated that their primary reason for not accepting online digital remote learning was the lack of direct contact with the teacher. The second most significant challenge for them was the sense of isolation from the group (27%). Remote digital learning during COVID-19 led to a decline in students' motivation to learn. After the pandemic, educators noted a decrease in students' performance and significant gaps in understanding the subjects. Humans are social beings and the fast-technical progress impacts adversely on their sentiments, and perhaps the capabilities to adapt. Digital remote communication, needs time to be accepted, and time for human adjustments, additionally the stressful situations, like a COVID lockdown, cause mental disorders in more sensitive persons, which can be a problem for a long time after. Hence, further investigations are necessary to obtain an accurate understanding of students' adaptation and knowledge acquisition in the implementation of new technologies in education.

## REFERENCES

- Chalim, A., Usman, F. & Mulianah, B. (2022) Effectiveness of Learning Activities in the Pandemic and Post Pandemic Era. *European Journal of Humanities and Social Sciences*, 2(2), 40-47. doi: 10.24018/ejsocial.2022.2.2.218.
- Engzell, P., Arun, F. & Verhagen, M. D., (2020) Learning inequality during the COVID-19 pandemic. SocArXiv. <https://ideas.repec.org/p/osf/socarx/ve4z7.html>
- Gałązka, A. & Jarosz, J. (2022) The Impact of Teachers' Level of Awe, Resilience, and Self-Compassion on Their Performance During the COVID-19 Pandemic. *New Educational Review*. 1(67), 196-206. doi: 10.15804/tner.22.67.1.15.
- Godoy, L. D., Falcoski, R., Incrocci, R.M., Versuti, F. M. & Padovan-Neto, F. E. (2021) The Psychological Impact of the COVID-19 Pandemic in Remote Learning in Higher Education. *Education Sciences*. 11(9), 473. doi: 10.3390/EDUCSCI11090473.
- Hernández-Sánchez, I., Caballero, S. R., Rodríguez, M. A., Herrera, G. R., Rodríguez, J. A. & Ramírez, J. (2022) *Traditional Face-to-Face Educational Modality vs. Remote Face-to-Face: Its Impact on Academic Performance in the Context of the Covid 19 Pandemic*. 266-275. doi: 10.1007/978-3-031-22131-6\_20.
- Islam, R. L. & Abiona, O. O. (2023) Impact of Remote Learning on Student Performance and Grade: A Virtual World of Education in the COVID-19 Era. *International Journal of Communications, Network and System Sciences*. 16(06), 115-129. doi:10.4236/ijcns.2023.166009.
- Morgan, H. (2022) Alleviating the Challenges with Remote Learning during a Pandemic. *Education Sciences*. 12(2), 109-109. doi: 10.3390/educsci12020109.

Popławska, A., Bocharova, O. & Sufa, B. (2023) Challenges Related to the Postulates of Students Towards Education in Post-Pandemic Times. *International Journal of Research in E-Learning*. 9(1), 1-22. doi:10.31261/IJREL.2023.9.1.07.

Quan, W. (2021) *Challenges of Online Learning During the COVID-19: What Can We Learn on Twitter?*. 524-535. doi: 10.1007/978-3-030-90241-4\_40.

Reed, B. (2021) Challenges to Medical Education on Surgical Services During the COVID-19 Pandemic: a Medical Student's Perspective. *Medical science educator*. 31(2), 1. doi:10.1007/S40670-020-01164-Z.

Velásquez-Rojas, F. J., Fajardo, E., Zacharias, D. & Laguna, M. F. (2022) Effects of the COVID-19 pandemic in higher education: A data driven analysis for the knowledge acquisition process. *Plos one*. 17(9), e0274039-e0274039. doi:10.1371/journal.pone.0274039.

Verma, S. K., Kumar, B. D., Chandra, S., Singh, N., Kumari, P. & Verma, A. (2021) Knowledge, Attitude, and Psychological Effect on Undergraduate/ Postgraduate Students in Lockdown COVID-19 Situation. *Journal of Pharmacy and Bioallied Sciences*. 13(5), 696. doi:10.4103/JPBS.JPBS\_829\_20.