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Blended Learning in Greek School Education: Students' Views in the Post-Covid Era

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Blended Learning in Greek School Education: Students' Views in the Post-Covid Era

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Abstract

This paper reports the findings of pilot research that explored high school students' experiences with remote learning during the Corona Virus Disease 2019 (COVID-19) school closure. Specifically, the present pilot research focused on how Greek secondary school students perceive and appraise the adoption of a Blended learning (BL) model in their daily school life due to the developments brought about by the pandemic. The study involved a cohort of students in the First and Second High School Grades in a provincial city in Greece. The questionnaire was used as a research tool for data gathering. This research brought to light a variety of attitudes, opinions, perceptions, and views regarding applying a mixed learning model in High Schools in Greece.

Keywords: Blended learning, Covid-19, high school students

Introduction

The emergence of the COVID-19 global pandemic caused unprecedented changes to educational practices. COVID-19 led to school closure worldwide, affecting students almost in all countries. Under these new circumstances, remote schooling became a solution for the smoothest possible transition of educational institutions into the post-Covid era.

As distance education is a growing phenomenon, the pandemic raised new challenges whose solutions can improve the educational landscape (Attard & Holmes, 2020; Dhawan, 2020; Reimers, 2022). Addressing these new education imperatives and tackling existing ones requires reconsideration of the main objectives of education, not just restoring education systems to their pre-pandemic levels of functioning but realigning them to these challenges (Reimers, 2022). The pandemic seems to be an opportunity for structural change that will ensure the quality of education and introduce new technological and pedagogical methods to the school adapted to the needs of students.

The new challenges refer to using various technologies, pedagogies, contexts and delivery modes (e.g. e-learning) to create a flexible learning strategy that will increase student success. Blended learning (BL) delivers courses designed in different modes and opens up limitless opportunities for students. In BL, the traditional lectures and tutorials may still be a vital component of a course. The courses may be supplemented by various synchronous and asynchronous activities, including forums, wikis and quizzes. BL combines the most positive aspects of traditional and distance learning to provide a stimulating and effective individual and cooperative learning environment (Weil, Silva & Ward, 2014).

Regarding the BL, Yang, Z., & Spitzer, L. (2020) claimed that its adoption in higher education in the United States is constantly increasing, while Rasheed, Kamsin & Abdullah (2020) set the principles of the 21st century as a starting point for its use by university institutions worldwide. The authors mention that the BL is considered the most effective "vehicle" for lifelong learning because of its flexibility.

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In secondary education, learning based on the BL approach is a widespread way of teaching (Wong, Hwang, Choo Goh, & Mohd Arrif, 2020). According to Park and Shea (2020), in the last ten years, there has been a significant increase in publications in scientific journals related to the BL at all levels of education. Moreover, the new data from the pandemic have resulted in research and educational interest turning to this model. The educational opportunities and possibilities it offers can be researched, studied, evaluated and adopted in the future in the best possible way.

In Greece, up until 2013, the application of the BL model has usually been limited to using digital material from simple educational digital repositories. Academic planning seems to have been absent, while the teachers are not adequately trained in issues related to its pedagogical and technological dimensions (Saribalidi, 2013 & Vorvi & Papagalou, 2013). Furthermore, recent studies highlighted that the implementation of BL before the pandemic was more limited in Greece (Mavroudi, 2021). This practice might indicate unfamiliarity with BL or a preference for traditional instructional delivery modes, such as face-to-face or formal online learning.

As the Council of European Commission (2020) stated, learning can happen entirely online or in a blended model, providing more freedom and autonomy without the restrictions created by the presence in the same space and adhering to a specific schedule. In this vein, the Ministry of Foreign Affairs in Greece adopted a set of actions and projects to support schools, such as the "Digital School II: Expansion and Utilization of the Digital Education Platform, of Interactive Books and the Repository of Learning Objects" of the National Strategic Reference Framework (Antonopoulos, 2022). Furthermore, the capacity of the BL was one of the main themes in the discussion of the two-day conference organized by the Open Technologies Alliance under the auspices of the Ministry of Education in May 2020. The BL was identified as an effective tool that can increase the effectiveness of the Greek educational curricula (https://elearnconf.ellak.gr/).

As adopting the BL model seems to be an important educational goal for Greek schools, the present research focuses on studying the Greek educational landscape in secondary education. In this context, the current pilot study investigates how Greek secondary school students perceive and deal with the adoption of this model daily due to the developments brought about by the pandemic. In particular, the advantages and possible obstacles that the specific model may bring to the learning process will be investigated. For this purpose, the following research questions will be answered:

- To what extent do secondary school students agree/disagree with the potential barriers to implementing a BL teaching model that emerged?
- To what extent do high school students agree/disagree with the potential benefits of the BL model?

BL seems to be a crucial chapter in education worldwide, too. According to Dhawan (2020), the BL learning environment can increase students' learning abilities. Students can learn anytime and anywhere, thus developing new fundamental skills in an ever-changing and dynamic world. Akkoyunlu & Soylu (2008) investigated high school students' attitudes, focusing mainly on how the hybrid model adequately serves the different learning styles, while Yang & Spitzer (2020) studied the effect of the hybrid classroom on a multilingual sample of students. At the same time, Taylor (2015), based on the emerging model of the flipped classroom, focused on issues related to the effectiveness of this model over the traditional, while Attard & Holmes (2020) explored the perceptions of teachers and students about BL in the teaching of mathematics in four grades of secondary education.

This study will explore students' views on the impact of BL on their learning motivation

and communication-collaboration skills, issues related to the emergence of new learning approaches for students and the appropriate levels of their digital skills. As the literature review identified the above factors (motivation, communication, learning patterns-paths and digital skills), additional factors-challenges that could arise from the literature will not be explored, as they are not part of the literature review. The following section analyzes how BL can improve learning as it is targeted to the above factors. Finally, the results section will present the students' opinions on whether the BL meets the above factors-challenges.

Literature Review

According to Elliot Masie, humans are by nature "blended learners". People acquire knowledge more quickly when combining different methods (Carman, 2002). Krasulia (2017) stated that the term BL could be traced back to 1960; however, its official appearance as "Blended learning" in the literature happened after 1990. In 2006, the term was made explicit through the publication of Bonk and Graham's first textbook on mixed/hybrid teaching. Rasheed, Kamsin & Abdullah (2020) consider the beginning of the 21st century as the starting point for its use by universities worldwide, judging it as the most effective "vehicle" for achieving lifelong learning because of its flexibility. Krasulia (2017) distinguishes the following different BL models depending on the population to which they are addressed and the learning objectives to be met:

- Self-blend - classroom learning and online tasks
- Online driver - students complete an entire course online
- Flipped classroom - students work first at home, and time in the school is limited to comprehension issues.

During the literature review process, four factors-challenges were identified as potential targets for the instructional design of a BL model; the learning motivation, the ability to provide learners with several different learning patterns-paths, the educational approaches to enhance cooperation and communication between learners and the appropriate academic and technological tools and skills (Figure 1).

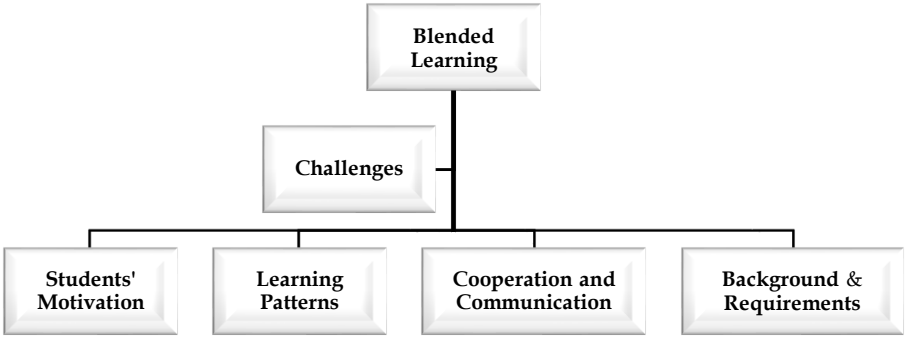

Figure 1: Challenges - Axes for the Investigation of Students' Views

Motivation is a set of goals, beliefs and feelings that positively or negatively affect learning depending on whether the student considers that the learning environment meets the appropriate conditions or not (López-Pérez, Pérez-López & Rodríguez-Ariza, 2010). For Kaur (2013), the BL, as it offers the means and tools to the students to work alone or in collaboration with others, automatically triggers them for reading, conversation, exchange of views and

reflection, offering them learning opportunities. Taylor (2015) argued that BL must motivate students to complete their activities. Lack of educational planning, where motivation is absent, can lead students to a passive attitude towards learning. In addition, the provision of a digital lesson, which for the most part, is based on lecturing, limits the learning paths for students who do not like the specific learning method (Kaur, 2013).

The second factor-challenge, "communication-collaboration", concerns students' social networking. The term "learning collaboration" for Laal, Naseri, Laal & Khattami-Kermanshahic (2012) is essentially an interaction model between different people with common goals. It is based on principles such as the division of labour, while the dominant element is the noble rivalry and the motivation for knowledge. For Lai (2011), the interaction scale can range from two to thousands of people.

Regarding the term "communication", for Gülbahar and Madran (2009), communication between students and teachers and among students is the most crucial element in an e-learning environment. In the BL approach, we can address two different communication models. The asynchronous (e.g. through forums, wikis, blogs e.t.c.) and the synchronous (e.g. via chat, live streaming e.t.c.), where it is possible to combine both aspects of communication. In the case of BL, communication, according to Gecer (2013), is a crucial element for the success of learning, as it offers the opportunity to promote face-to-face communication (offline) in combination with online communication (online) through the use of digital tools.

The term "learning patterns" refers to the way the student responds more appropriately to the learning process. The goal is educational planning to provide different learning paths to each student. According to Bishop & Verleger (2013), students' learning capability to learn and match different learning experiences with specific knowledge improve their educational outcomes. There are cases of students who are distinguished for their ability to delve deeper by processing many other points of view, but also students who use their imagination to a great extent and are innovative and collaborate creatively in groups. At the same time, many use inductive thinking and start from abstract ideas by constructing theoretical models. Some have a more practical orientation in their thinking and want to solve problems through logical, intuitive investigation (Tambunan, Silitonga & Sidabutar, 2020). For these various learning patterns, a dynamic environment is required adapted to the needs of each student (Kaur, 2013). BL can provide these capabilities because of its many different approaches and options. Taylor (2015) and Giannousi (2017) explained that this model allows students to control learning. Hence, students who learn at a slow pace also benefit as they review the learning material as often as they need to understand it best.

The last factor-challenge, "background and requirements", refers to the digital skills required to ensure a technological-educational model. It concerns challenges regarding the ability in the pedagogical and technological quality of the learning material. These issues affect the accessibility of students and teachers to the digital era (Akçayır & Akçayır, 2018). Giannousi (2016) stated that a key obstacle in the case of BL is the non-pedagogically and technologically adequate readiness of many teachers and students who will support it. This fact leads to using technology without the necessary pedagogical and technological training. At the same time, Taylor (2015) reported that students and teachers who do not like technology tend to be pessimistic about using the BL, considering that their workload is multiplied. Many teachers who have incorporated technology as an educational tool into their daily lives find the preparation of digital material a complicated and painful process.

The above attitude of many teachers and students constitutes an obstacle to implementing the BL. To this end, it should be take into consideration that using e-learning platforms can be a very time-consuming process, especially at the beginning, as it requires a period of

preparation and familiarization. Moreover, the learning platform and tools must be accessible and reliable (Kresulia, 2017). However, another crucial issue is the access to the internet and the student's ability to obtain expensive equipment, such as smartphones, laptops, tablets or computers. If the students do not possess any of the above tools, they will not be able to participate and may be excluded (Taylor, 2015).

Methodology

The current study is a first pilot investigation of secondary school students' attitudes towards the BL teaching model regarding its future opening in this community. For our sample, we used the method of selective sampling due to the limited access to a larger sample, as the study is a pilot research. The research sample was twenty-four students in the first and second grades of high school. For the children's participation, the parents' permission was requested. For this purpose, consent documents for participation in the research (letter) were established based on the specifications provided by the Institute of Educational Policy (IEP) (http://iep.edu.gr/el/ereunes-programmata).

The current study is based on quantitative data collection, and the research tool used for this purpose was a questionnaire. Its completion was done anonymously. The questionnaire included instructions for its fulfilment, the purpose and objectives of the research, a brief presentation of the BL model, and instructions regarding the code of conduct. Furthermore, instructions were given on how to complete it (e.g., it is essential to answer all the required questions etc.).

The questionnaire consisted of 20 questions, 15 of which were closed type and Ordinal scale (Likert scale), other four questions of Closed type and Category scale (1, 3, 4, 10 questions), while Question 2 was open-ended (appendix 1).

The questionnaire is divided into four parts. The questionnaire aimed to collect data about the students' opinions on the capacities of the BL model in their educational success. The first part includes demographical data (1-5 questions). The second part contains data about the perspective of BL to motivate students to learn in-depth (6-10 questions). The third part is on challenges associated with the need for additional technological knowledge (11-13 questions), and the fourth is related to the opportunities for enhancing communication and collaboration skills (14-15 questions). Finally, the last one includes questions about the ability to emerge different learning patterns-paths (16-20 questions). The descriptive statistics of the SPSS statistical package were used for data analysis.

Results

Demographical data

The survey involved 24 students in the 1st, and 2nd grades of high school, of whom 50% of the sample were boys and 50% were girls. Following Figure 2, 12 girls and 12 boys participated in the research (24 students total) from both high school grades.

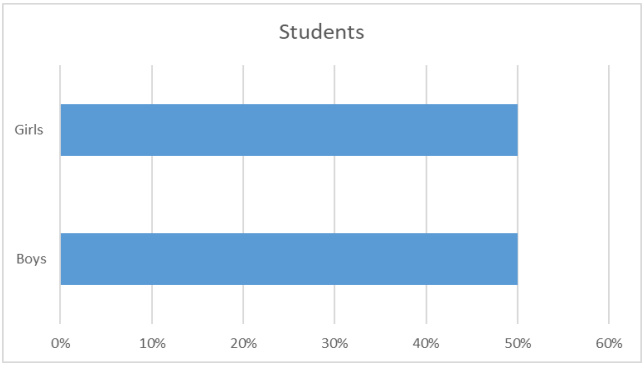

Figure 2: The gender of the students surveyed

The age of the students who participated in the research varies between three different values (15, 16, and 17 years old). Specifically, according to Figure 3, only 4 students are 17 years old, 9 students are 15 years old, and 11 students are 16 years old.

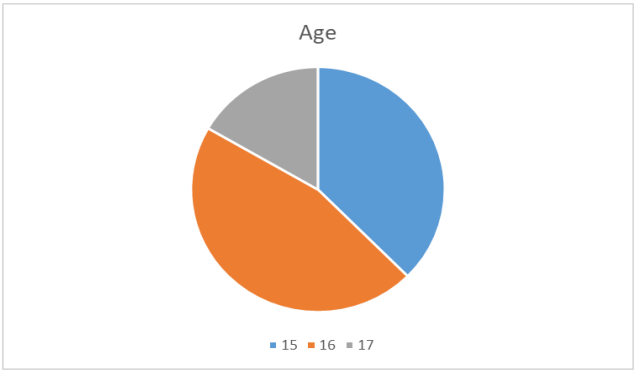

Figure 3: The age of the students surveyed

16.7% of students (1 student) in the 1st grade and 83.3% of students in the 2nd grade (5 students) have chosen studies in the field of Science (Table 1). 25% of students in the 1st grade (2 students) and 75% in the 2nd grade have chosen theoretical studies (6 students) (Table 1). 50% of students who have chosen technological studies are in the first grade (1 student), and 50% are in the second grade of high school (1 student). Finally, 8 students had not chosen an educational field yet. The 8 students were in the 1st grade of high school (8 students).

Table 1. Choice of direction and class

			Grades in high school		
			A΄ Grade	**B΄ Grade**	**Count**
Direction	Science	**Number**	1	5	6
		% per direction	16,7%	83,3%	100,0%

		% per class	8,3%	41,7%	25,0%
	Theoretical studies	number	2	6	8
		% per direction	25,0%	75,0%	100,0%
		% per class	16,7%	50,0%	33,3%
	Technological	number	1	1	2
		% per direction	50,0%	50,0%	100,0%
		% per class	8,3%	8,3%	8,3%
	I don't know	number	8	0	8
		% per direction	100,0%	0,0%	100,0%
		% per class	66,7%	0,0%	33,3%
Count			12	12	24
		% per direction	50,0%	50,0%	100,0%
		% per class	100,0%	100,0%	100,0%

Based on Table 2, 8.3% of the first-grade students (1 student) do not study at all, while 66.7% of the students study about 1-3 hours a day (8 students). Finally, 25%, of the first-grade students study about 3-5 hours a day (3 students). 33.3% of the second-grade students study for about 1-3 hours a day (4 students), and 66.7% about 3-5 hours a day (8 students).

Table 2. Daily hours of study

			Grades in high school		
			A' grade	**B'grade**	**Count**
Hours	0,00	Number	1	0	1
		% per hour	100,0%	0,0%	100,0%
		% per class	8,3%	0,0%	4,2%
	1,00-3,00	number	8	4	12
		% per hour	66,7%	33,3%	100,0%
		% per class	66,7%	33,3%	50,0%
	3,00-5,00	number	3	8	11
		% per hour	27,3%	72,7%	100,0%
		% per class	25,0%	66,7%	45,8%
Count		number	12	12	24
		% per hour	50,0%	50,0%	100,0%
		% per class	100,0%	100,0%	100,0%

The part of the motivation

Table 3 presents the outcomes of the research questionnaire about the students' opinions on the motivations provided by the BL model. Question 6 (do you consider that a BL model will encourage your learning?), investigated students' opinions about the encouragement provided to them by the BL in the learning process. The average of the answers is around 3.1, meaning more students agreed with this position. Accordingly, question 7 (do you think applying this BL model would limit the need for additional support for learning outside the school?) investigated students' opinions on the extra support of the BL in afterschool time. The average of the answers is around 2.1, meaning more students disagree with this option.

Question 8 **(**do you think that technological requirements of the specific teaching model would limit your free time?), investigated their opinions on the time-consuming learning via BL. The average is around 1.7, which means that students tend to disagree that the technical requirements of the BL would restrict their free time. This statement implies that students do not consider that using the BL would be time-consuming. Moreover, concerning question 9 (are you willing to devote time to familiarization to achieve your learning objectives?), which investigated their willingness to experiment with the BL, the average ranged to 3.2, meaning that more students agreed that they felt ready to spend time.

Finally, question 10 (is it imperative to use educational distance technology as a complementary tool for supporting face-to-face teaching?) investigated their opinions about the necessity of BL**.** The average of the answers is around 1.2, meaning that students tend not to consider distance education an essential tool of traditional education. Furthermore, per Table 3, the standard deviations are relatively small, which means that most students gave somewhat similar answers that do not deviate much from the average.

Table 3. Students' views on the motivations provided by the BL model

	Number	Minimum value	Maximum value	Mean	S.d.
Encouraging	24	2,00	4,00	3,1250	,61237
After school support	24	1,00	4,00	2,1250	,61237
Time Consuming	24	1,00	4,00	1,7917	,88363
Willing for experiment	24	2,00	4,00	3,2500	,73721
Necessity	24	1,00	3,00	1,2917	,46431
Valid number	24				

The part of educational and technological requirements

Table 4 presents students' views on whether they consider the BL model demanding regarding digital skills. Question 11 (to what extent have you had difficulty managing the technical tools of the platform used by the school unit with the close of schools?) investigated technological problems that students had to address when teaching became remote because of the pandemic. The average of answers is 3.4, which means that more students said they did not have difficulty handling the technology. Accordingly, question 12 (could this model financially burden students?) investigated the factor "equipment burden". The average is 1.6, meaning more students tend to disagree simply with the possibility of the burden. Finally, question 13 (could teachers adequately cope with the technological requirements of the BL

model?) investigated students' opinions about teachers' readiness to adopt the BL regarding their digital skills. The average of the answers is 1.6, so more were those who argued that few teachers could cope with that. In accordance with Table 4, the standard deviation for the variable "equipment-charge" is relatively large, meaning there is a relative difference in the values the students gave to this question.

Table 4. Students' views on the educational and technological requirements of the BL model

	Number	Minimum Value	Maximum Value	Mean	S.d.
Technological difficulties	24	2,00	4,00	3,4583	,72106
Equipment burden	24	1,00	4,00	1,6250	1,05552
Readiness	24	1,00	4,00	1,6250	,71094
Valid number	24				

The part of communication-collaboration

Table 5 provides students' opinions on whether they consider the BL model effective in enhancing collaboration and communication. Question 14 (Do you feel more prepared to post your views in a digital environment than in the typical face-to-face classroom?) investigated students' willingness to communicate via a digital environment than in a face-to-face class. The average was 3.1, which means most students agree that they feel ready.

Similarly, question 15 (Do you think the implementation of the BL model can limit the physical collaborative action?) investigated the isolation risks as the collaboration via a face-to-face process is absent in the BL. The average is around 3.1, so more students agree with this risk. Regarding Table 5, the standard deviations are not particularly large, which means several students have given relatively similar answers that do not deviate much from the average.

Table 5. The students' opinions on the possibilities of communication and cooperation via BL.

	Number	Minimum value	Maximum value	Mean	S.d.
enable participation	24	1,00	4,00	3,1250	,89988
Risk of isolation	24	1,00	4,00	3,1667	,81650
Valid number	24				

The part of the learning patterns

Table 6 presents students' views on the pedagogical abilities of BL. Question 16 (Do you think the BL model would support deeper learning?) investigated students' opinions that the BL supports them to learn in depth. The average is 2, with more students disagreeing that the BL model would help. Question 17 (How facilitative is the use of video to understand a school subject better?) investigated students' opinions regarding the video utility. The average is 3.9. as more students answered "very." Question 18 (Is the use of subtitles in a video mandatory for you?) investigated the usability of subtitles. The average is 1.7, so more were the students who answered "a little". Question 19 (Are there any pieces of information you do not retain

or understand during face-to-face educational teaching because of the fast pace of its conduct?) investigated the need for a more flexible self-regulation learning. The average is around 1.6, meaning more students answered "few". Finally, question 20 (Do you have problems organizing your school obligations with distance learning?) investigated issues related to the ability of students to handle the complexity of the BL approach. The average is around 1.7, meaning more students have answered "a few". In Table 6, the variable usability of subtitles shows a relatively large standard deviation, which means a relative difference in the values students gave to this question.

Table 6. The students' opinions on the pedagogical potential of the BL model.

	Number	Minimum value	Maximum value	Mean	S.d.
deepening possibilities	24	2,00	4,00	2,0417	,69025
Video utility	24	1,00	4,00	3,9167	,65386
Usability of subtitles	24	1,00	4,00	1,7500	1,03209
Learning self-regulation	24	1,00	3,00	1,6667	,56466
organizational possibilities	24	1,00	4,00	1,7083	,75060
Valid number	24				

Discussion

The research "brought to light" the views of students who argue that the BL model can enhance their motivation for learning, mainly because of the deepening it can offer. Although they do not believe that BL will limit their free time, most do not think it would replace the institution of tutorial or remedial teaching.

At the same time, in terms of whether it benefits different learning patterns, more students claimed that they think that BL promotes self-regulating learning. Perhaps the recent remote learning experience due to the pandemic has increased this view. Moreover, more students found using the video as a learning tool particularly useful. In contrast, although subtitles were generally considered "a little useful" by the students, the wide variety of answers to the specific question leads to different opinions.

The experience of e-learning during the pandemic seems to have worked encouragingly in terms of how the BL model can enhance student communication. However, the students pointed out the danger of social isolation from its implementation. The fact that students' attitude seems to be characterized by controversy in their views is probably due to and reinforced by the pre-existing experience of Covid, as some students possibly confuse the BL with e-learning.

However, the students did not consider that they would face deficits in technological knowledge, contrary to their opinion about their teachers. At the same time, they do not believe that this model would burden them financially, even though those views were detected in the literature.

In addition, the controversy of the answers is likely to bring psychological underpinnings, as reticence is a frequent phenomenon in pioneering innovations in education. For Giannousi (2016) and Taylor (2015), adapting to a new learning environment is left to the interactions between the educational context and the student's experiences. At the same time, Tom (2018)

points out that students' willingness to "welcome" such a model also plays a significant role.

The pandemic may be around for a long time. As the flexibility of blended learning supports students in learning independently, learning materials and resources can be recalibrated for students to target specific gaps in education (Tan and Chua, 2022). Lavonen and Salmela-Aro (2022) stated that the essential point to be ready for a new crisis in education is to follow a long-term education policy that focuses on the quality of education. Teachers should continuously learn digital pedagogy, and students should enhance their digital skills. Furthermore, digital platforms and virtual environments should also be used in the classroom via easy, free access to these digital tools.

Conclusion

Still, the opposing views of the students did not allow the in-depth investigation of the challenges-factors that emerged from the literature review. For this reason, the research needs to be repeated based on a wider sample. The results cannot be generalized since the sample is not representative as the sample is small, and the research's pilot character leaves no room for generalization. Moreover, the openness of this research is suggested by applying different cross-checking methods through other tools such as interviews. Conclusively, the implementation of new studies is proposed to investigate the impact of BL on populations in different primary and secondary education grades and teachers.

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