

doi: 10.26529/cepsj.1103

Through Thick and Thin: Lower Secondary School Students' Barriers to Learning under Covid-19 Conditions

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At the global level, the Covid-19 pandemic has affected the whole education system, ranging from pre-school to higher education. Without any prior preparation, the teaching process has undergone a massive transition from face-to-face to distance learning. This transition has posed many challenges. This article aims to reveal what barriers to learning lower secondary school students face and how schools can minimise these barriers. A systematic review of the academic literature from two well-known databases, EBSCO and ScienceDirect, was performed to identify and determine the prevailing consistencies and gaps. The empirical study follows a qualitative research design: an explanatory case study. The data were collected through observations of online lessons, interviews with teachers and the school principal, and students' reflections. In addition, an inductive thematic analysis was employed. The empirical results help to identify secondary school students' barriers to learning in terms of learning accessibility and technological literacy; planning and reflections on learning; self-regulated learning and active involvement; and emotional as well as psychological well-being. Furthermore, the study highlights how a school can minimise these barriers.

Keywords: Covid-19, barriers to learning, lower secondary school, students

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V dobrem in slabem: ovire osnovnošolcev pri učenju med covidom-19

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~ Na svetovni ravni je pandemija covid-19 prizadela celoten izobraževalni sistem, od predšolskega do visokošolskega izobraževanja. Brez kakršnih koli predhodnih priprav se je zgodil obsežen prehod učnega procesa z neposrednega učenja na učenje na daljavo. Ta je prinesel številne izzive. Namen članka je predstaviti, s katerimi ovirami pri učenju se spoprijemajo učenci višjih razredov osnovne šole in kako lahko šole te ovire čim bolj zmanjšajo. Sistematično smo pregledali znanstveno literaturo iz dveh znanih podatkovnih zbirk, EBSCO in ScienceDirect, da bi ugotovili in določili prevladujoče skladnosti in vrzeli. Empirična študija temelji na kvalitativnem raziskovalnem načrtu, tj. pojasnjevalni študiji primera. Podatki so bili zbrani z opazovanjem spletnih učnih ur, intervjuji z učitelji in ravnatelji šol ter z refleksijami učencev. Poleg tega je bila uporabljena induktivna tematska analiza. Empirični rezultati pomagajo opredeliti ovire osnovnošolcev pri učenju z vidika dostopnosti učenja in tehnološke pismenosti, načrtovanja in razmišljanja o učenju, samoregulativnega učenja in aktivnega vključevanja ter dobrega čustvenega in psihološkega počutja. Poleg tega raziskava poudarja, kako lahko šola te ovire čim bolj zmanjša.

Ključne besede: covid-19, ovire pri učenju, višji razredi osnovne šole, učenci

Introduction

The Covid-19 pandemic has affected all spheres of life. Globally, the field of education has faced unprecedented challenges. More than 1.5 billion learners worldwide have been affected by school closures (UNESCO, 2020). The teaching process unexpectedly and without any prior preparation has undergone a massive transition from face-to-face to distance learning. This posed several challenges: teacher adaptation to distance learning (König et al., 2020; Kruszevska et al., 2020); individual and institutional readiness to transition to distance education (Howard et al., 2020); students' capability to complete learning tasks independently (Lau & Lee, 2020); impact on student disengagement and early school-leaving rates (Espinosa Castro, 2020), and similar.

Moreover, as noted by the Human Rights Council of the United Nations (2020), under Covid-19 pandemic conditions 'students with disabilities are facing barriers on account of the absence of required equipment, access to the internet, accessible materials and support necessary to permit them to follow online school programmes. As a result, many students with disabilities are being left behind, particularly students with intellectual disabilities' (p. 6). However, there has been a lack of exploration in the scientific literature on how the pandemic has affected not only different sectors of education but also its different participants (teachers, students, parents, school principals, etc.).

Prior to the pandemic, students faced learning difficulties and barriers regardless of special educational needs (SEN). We perceive barriers to learning as difficulties that arise within the education system as a whole, the learning site and/or within learners themselves, which prevent access to learning and development (McManus et al., 2017). Learning barriers are faced not only by students with special educational needs but by all students (Booth & Ainscow, 2002). Sayed and Baker (2014) claim that potential learning barriers can be found in understanding, identifying the key points, processing information, comprehending the task, implementing the task, autonomous learning, and reporting on the task. According to Meyer et al. (2014), five groups of barriers to the learning process exist: in teaching methods, in learning goals, in materials, in assessments, and in context/learning environments. Scientific studies conducted prior to the Covid-19 pandemic reveal that barriers to learning are best mitigated by teachers' mentoring, supervision, support for students, and similar measures (Martinez et al., 2016; Wyness & Lang, 2016). Hence, the focus of the present article is on *how the pandemic has affected different students, what learning barriers they have faced, and how the school can help overcome these learning barriers*. In the following sections of the article, we first introduce the results of the systematic literature review

on scientific studies on barriers to learning at the lower secondary school level. Then, the research methodology is presented, which is an explanatory case study. Finally, the results of the research and a discussion are provided on the basis of the performed inductive thematic analysis.

Systematic literature review of distance learning under pandemic conditions

The Covid-19 pandemic has been a rapid and unexpected change that has affected educational systems worldwide. Thus, studies are emerging to analyse the impact of the pandemic on the education sector. Seeking to make an overview of the scientific research on how this unexpected change has affected education at the lower secondary school level, we conducted a systematic literature review based on a well-designed data search procedure (see the methodological part of this article). As a result, 232 articles were found, dating from the start of the pandemic (2019 to 2020). Among them, 10 articles were identified as relevant for this study (see Table 1). The following section provides a summary of these articles and their key findings.

The analysis of the articles reveals two main directions of research. One direction focuses on the learning conditions of students and the challenges experienced under pandemic conditions. For example, Pietro and Madonna (2020) emphasise the realities of educating students with special educational needs. Their research shows that distance learning affects academic abilities, leisure activities, weight gain, and other factors. The authors cite the use of various relaxation techniques (e.g., Jacobson's relaxation technique) to overcome the effects of distance learning as being extremely effective. Dube (2020) calls for attention to be paid to the existing learning conditions of students living in rural areas. The author notes that these students are excluded from the teaching and learning process due to technological issues. In addition, other authors claim that the transition of students to distance learning could be facilitated by the application of certain teaching strategies (e.g., Gameful instructions) (see Petefki & Rogers, 2020) and online teaching/learning tools (e.g., Moodle, EBA) (see Acar & Kayaoglu, 2020; Tanık-Önal & Önal, 2020), previous experience, and digital skills (see Bhaumik & Priyadarshini, 2020).

The second direction focuses on the teacher and the changed working conditions of the teacher. For instance, the scientific insights provided by Sari and Nayir (2020) demonstrate that teachers are not ready for the distance education process. Furthermore, the authors note that teachers lack both knowledge and practice in working remotely. Meanwhile, Midcalf and Boatwright

(2020) emphasise that teachers in the US had little time (between 24 and 72 hours) to prepare to teach entirely online. Naturally, such a sudden transition posed many challenges. Finally, Kaden (2020) draws attention to the changed workload of teachers, noting that teachers spend much of their time instructing students in real-time on Zoom, planning for instruction, and giving feedback.

Table 1

Papers related to distance learning at the lower secondary school level

Author(s) (year)	Country	Research strategy, method(s)	Participants	Research focus
Pietro, Madonna (2020)	Italy	Qualitative (interview)	Students ($N = 20$)	The effects of Covid-19 lockdowns on SEN students' transition to distance learning
Dube (2020)	South Africa	Qualitative (participatory action research)	Students ($N = 10$), teachers ($N = 5$)	Challenges faced by rural learners and enhancement of online learning in the context of the Covid-19 pandemic; social empowerment and inclusion of all learners
Acar, Kayaoglu (2020)	Turkey	Mixed (quasi-experiment)	Students ($N = 44$)	The use of Moodle as an online teaching/learning tool for EFL lessons and its effect on student achievement
Sari, Nayir (2020)	Turkey	Qualitative (interview)	Teachers ($N = 65$)	Distance education during Covid-19 and the challenges, such as lack of internet access and infrastructure, classroom management, human resources, etc., faced by teachers and students, and strategies to overcome them
Tanik-Önal, Önal (2020)	Turkey	Qualitative (interview)	Parents ($N = 17$)	Parents' views on learning science at home in the context of the Covid-19 pandemic
Bhaumik, Priyadarshini (2020)	India	Quantitative (questionnaire survey)	Students ($N = 100$)	E-readiness of senior school students for the transition to online learning in the context of Covid-19 and their views on this mode of learning
Petroski, Rogers (2020)	US (Connecticut State)	Qualitative (textual analysis)	Students ($N = 122$)	Impact of the transition to online learning through analysis of student emails and the choice of teaching approaches
Hosszu, Rughinis (2020)	Romania	Qualitative (discourse analysis)	Online articles ($N = 152$)*	Advantages and challenges of online and distance education experienced by teachers, students and civil society, focusing on the way online education reshaped social inequality
Kaden (2020)	US (Alaska)	Mixed (observation, interview, artefact, conversation)	Teacher ($N = 1$)	Covid-19 school closure-related changes to the professional life of secondary school teachers, including changes to workloads and support for learners
Midcalf, Boatwright (2020)	US (South Carolina)	Qualitative (questionnaire survey)	Teachers ($N = 40$), parents ($N = 35$)	Experience of teachers and parents during school closures in the period of the Covid-19 pandemic, which included teaching and learning challenges, student engagement and support systems

All the analysed articles emphasise the challenges faced by education participants in the transition to distance learning. Among the most commonly identified challenges encountered by teachers are an increase in their workload (see Kaden, 2020), lack of internet access (see Bhaumik & Priyadarshini, 2020; Sari & Nayir, 2020), poor infrastructure, difficulties in classroom management (see Sari & Nayir, 2020) and student engagement (see Midcalf & Boatwright, 2020), as well as provision of support to individual students (see Kaden, 2020). Furthermore, the challenges faced by students include the new mode of online learning (see Hosszu & Rughinis, 2020; Petroski & Rogers, 2020), unequal opportunities to quality distance education that arise due to a lack of internet access, low-tech applications (see Dube, 2020), exclusion of individual learners from the educational process, lack of motivation for learning (see Midcalf & Boatwright, 2020; Sari & Nayir, 2020), and similar factors.

It is noteworthy that three of the ten articles are from the United States; the same number of articles concentrating on Covid-19 issues comes from Turkey. Only one article explores the situation in an European Union country (Italy). The common findings (results identified by more than one article) reveal that: 1) the majority of the publications focus on the challenges that occurred due to the Covid-19 pandemic; 2) interview is the major research tool; 3) the most popular research topics include challenges faced by various education participants (teachers, students and their parents) as a result of the Covid-19 pandemic.

However, the above review also reveals the following research gaps: 1) most studies concern distance learning at secondary school and analyse the challenges faced from the perspective of one group of participants (i.e., only from parents', students' or teachers' perspectives); 2) the minority of articles provide possible ways or strategies for overcoming challenges caused by the Covid-19 pandemic. Hence, the present study seeks to fill a research gap concerning how schools are facing and responding to the pandemic.

Method

This study employs a qualitative approach through an explanatory case study (Yin, 2014). As Brown (2006) notes, this type of research is mainly used for unexplored areas and problems. An exploratory research approach is used to explore what barriers to learning students face during the Covid-19 pandemic and how the school can mitigate these barriers.

Participants

The case study research was performed, and field notes were taken in a Lithuanian lower secondary school located in the capital. The school provides primary (Grades 1-4) and lower secondary (Grades 5-8) education programmes. The school has 1,176 students in total.

The case study was conducted in the spring (2019/2020) and autumn (2020/2021) semesters. The study included one class of Grade 7-8 students, 27 students: 15 boys and 12 girls. All of them were aged 12–13. Based on information gathered from the school, there were two students with special educational needs (with hearing impairment (cochlear implant); specific learning (reading, writing) disorders). Three students had experienced physical, social and/or psychological trauma. Five students were classified as gifted, and four were less motivated to learn. The class is also has a heterogeneous ethnic background.

The study also involved two teachers (of English and of Lithuanian language and literature) and the school principal. All of them were females, aged 47 on average, with about 20 years of experience each. Both teachers hold master's degrees. The teachers were involved in the study to reveal how the teacher can minimise the barriers to learning faced by students. The school principal was invited to the study to reveal how the school could support students when teaching was affected by the pandemic.

Data collection

The data on which this paper is based were collected from several sources: observations ($N = 18$), interviews ($N = 3$) and reflections ($N = 15$). The data were collected from 1 April 2020 to 9 December 2020. The interviews with the teachers and the school principal allowed for a more accurate interpretation of the observation data. The developed observation tool was applied to observe the teacher-designed setting in the educational process. The teachers' reflections largely focused on their experience while organising distance teaching and focusing on the barriers faced by the students. Observation of the educational process and written reflections of students allowed us to identify the barriers to learning encountered by the students. The interviews with the teachers and the principal enabled us to identify how the teachers could minimise barriers to learning under Covid-19 conditions.

A systematic review of the academic literature was also conducted to identify the scientific studies on distance learning during the Covid-19 pandemic at the lower secondary school level (ISCED 2). The review included a search in the well-known databases *EBSCO* and *ScienceDirect*. The search terms were: 'online learning OR e-learning OR distance learning' AND 'Covid-19 OR

coronavirus OR 2019-ncov'. The main criteria for the search were full text, peer-reviewed research articles from scholarly journals, and written in the English language. The publication period ranged from 2019 to 2020 (November). A total of 232 papers were collected for the data screening process: 1) reading the title; 2) reading the abstract/summary; 3) reading the full article. After all the screening stages, the number of articles was reduced to 10 based on the exclusion criteria: 1) papers that focused on examining issues in fields other than education; 2) papers that focused on examining issues at education levels other than that of secondary school; 3) papers containing no empirical research; 4) duplicated articles that were extracted from different databases; 5) papers that did not analyse pandemic-driven challenges in education.

Data analysis

An inductive thematic analysis was employed for qualitative data analysis (Braun & Clarke, 2006). The thematic analysis was performed with the following stages: transcription, reading and familiarisation, coding, searching for themes, reviewing themes, defining and naming themes (Braun & Clarke, 2006). The data were analysed, and the findings were structured according to the main theme: *lower secondary school students' barriers to learning in the context of the Covid-19 pandemic*. The following sub-themes emerged from the analysis of the qualitative data: *learning accessibility and technological literacy; planning of learning and feedback; self-regulated learning and active involvement; emotional and psychological well-being*. The following section is a summary of the main findings from the case study.

Validity and reliability of the study

Validity and reliability in qualitative research are represented by trustworthiness (Korstjens & Moser, 2018). The trustworthiness of this study was established in several ways. To increase the credibility of the study, triangulation was employed. It was ensured through the inclusion of data from observation, interviews, and reflection.

All transcripts and written materials were examined carefully several times by two researchers separately. The thematic method provided steps to thoroughly identify, analyse, and summarise themes across the data set to find repeated patterns of meaning. In addition, the research team critically reviewed sub-theme schemes compiled by the researchers; comparative analysis was performed, and a unified approach was developed. In this way, the confirmability and dependability of this study were ensured.

Transferability is the last component of trustworthiness, which was attained by the fact that the very context of the pandemic provided preconditions for applying the research study findings to other contexts, circumstances, and situations.

Results

After the announcement of the lockdowns and the transition to distance learning due to the spread of the coronavirus SARS-CoV-2, the normal learning process, planning and styles of teacher and student work, as well as opportunities to overcome problems, changed. In Lithuania, distance learning was introduced very quickly, making students, teachers and parents adapt to this situation. However, new challenges created barriers to learning. Thus, the main topic of concern in the data analysis is *the barriers to learning that emerged during the Covid-19 pandemic*, which will be revealed in the context of four sub-themes.

Sub-theme 1: Learning accessibility and technological literacy

In distance education, problems related to the use of IT, internet connections, insufficient handling of equipment, and a lack of computer literacy skills are inevitable. This study helps identify students' learning barriers related to technology resources at schools and in families. During an interview, a teacher noted that some barriers to learning had been experienced by students growing up in large families:

'If there are two or three children in the family, they must have two or three computers, which should be in good condition, they must have good internet access; not all the internet connections can 'service' three computers. [...] Obviously, the school provided tablets, but it turned out that the tablets could not normally support the google classroom, [...] then the children took the tablets to the IT specialist's home, and he installed the programme for them. Then suddenly we realised that the headphones or the cameras were not working. Meanwhile, the school required both vision and sound. The children tried to work on the tablet and over the phone – two means of communication. The first phase [spring, the first phase of the covid pandemic] was a nightmare in the sense that everyone had to figure out technical issues and buy cameras. Definitely, half of the children didn't have cameras, because they didn't need them. [...] Now [autumn, the second phase of the covid pandemic] everyone is ready, there are only individual unprepared students, and often no problems arise' (Teacher A).

Within a few months of moving from the first stage of the covid-19 pandemic-caused lockdown to the second, the problems of providing students and teachers with IT tools, choosing a virtual teaching platform, and remotely organising the educational process were solved in Lithuania. In addition, documents and recommendations were developed at the national and school levels. During the interview, the school principal claimed that the school itself carried out most work in improving the quality of distance education.

'School efforts and resources are absolutely an intellectual product of the school... video lessons were prepared [...] Emails were created for all students. [...] We organised separate instructions for teachers; I taught the teachers myself. IT professionals then filmed the steps on how to use the system. Now everyone is doing their best without interruption. Parents and children are sent videos about logging in; families are equipped with IT equipment, class teachers are constantly connected and ask if students need any help. If problems arise, we try to solve them immediately' (the School Principal).

Both teachers noted that it was easier to work and organise the teaching process during the second wave of the Covid-19 pandemic. The experience gained by the teachers and the readiness of the school facilitated these achievements. More attention was paid to aspects of lesson organisation and the use of technological opportunities rather than ensuring connections to the remote platforms.

'By the end of May, it was already clear to me how I would work and what I would do. And now, in the case of the second wave of covid, I do not feel any stress; I know everything; I try to take advantage of the technical possibilities to ensure that the text, sounds and images are available to the students. [...] we learned together, the tool changed, it improved in the course of time, new functions emerged, there was communication among teachers, their needs were considered. The possibility to correct works, record results, and provide fast feedback appeared [...] The children see all their assignments and assessments in one place, there is a possibility to create tests and surveys, the assignments are immediately corrected, so I don't need to correct them by hand, and I can do error analysis. I study the mistakes, and I plan how we'll work in the next lesson' [...]. (Teacher A)

Speaking about the positive changes, the other teacher pointed out that *'Now the barrier associated with the system has been reduced, [...] making the teaching run more smoothly. There are now fewer platforms; students*

can get information from videos, they learn how to use the system in information technology lessons' (Teacher G).

Thus, it is obvious that at the beginning of distance learning, students experienced barriers to accessing learning caused by difficulties in using information technologies and problems around internet connection. During the research, the problems associated with accessibility, transfer and reception of the educational content were identified. It is noteworthy that in a targeted response to the changes brought about by the epidemic, this barrier was minimised by the efforts of the entire school community.

Sub-theme 2: Planning of learning and feedback

In the pandemic situation, educational tasks were provided using technical means (computers/mobile phones/the internet), virtual learning environments, ICT tools (electronic record books, etc.), collaboration networks (email systems, social networks, websites, etc.), video conferencing tools, and others. Therefore, there were plenty of opportunities to convey information and communicate with the students. However, in one of the interviews, the teacher distinguished a

'challenge of how to explain very difficult topics remotely, how to offer kinesthetic activities in lessons [...] there is a great lack of time to lead lessons at a distance' (Teacher G).

During the interviews, it was determined that due to the lack of cooperation between teachers, the learning load of students was not optimally balanced. This also caused students' fatigue, inattention, changes in emotions, and long working hours at the computer. A teacher noted that

'[...] we, as teachers, do not weigh the amount of work [assigned to students]. A slower child does not process the information they have to process, master it and produce a result. If it includes all the school subjects, and if the child does not know how to plan the time, it becomes a problem' (Teacher A),

thus highlighting the problem of dealing with the volume of the learning content.

It is undisputed that communication and collaboration through the application and combination of learning methods are crucial in attracting and retaining students' attention, promoting their self-regulation through group learning, and motivating them to attain personal goals matching the goals of other group members (Wiliam, 2011). Following observations of the lessons

over a month, it was determined that the teachers tried applying traditional learning methods in the observed virtual lessons. The school principal noted, 'The use of methods has changed both in the classroom and in the virtual settings; student inclusion has also altered. The variety of educational methods has been narrowed and minimally applied by the teachers. The children are less involved; group work has decreased; the teachers are reluctant to organise pair or group work in distance learning as they are afraid of being unable to manage the process. While providing feedback, the teachers mainly restrict themselves to the written format as they cannot communicate live with every child.'

The role of a teacher is important in promoting learning in small groups. The focus is on how students can learn from their peers during small-group work, how teachers can prepare students for collaborative group work, as well as the role of teacher activity and classroom norms (Webb, 2010). In the case of distance learning communication, this is not a routine and easily organised activity. A teacher regretted, 'We cannot work in the usual ways: work in groups or pairs, because this system has no groups. And I miss it very much because language is a dialogue' (Teacher A). The other teacher emphasised that 'it is now difficult to use kinaesthetic activities. After moving to the virtual environment, they [students] generally lack movement. Vitality and vigour declined when they returned after the first lockdown' (Teacher G).

Students need to think about how to apply their knowledge and create new ideas. In this case, learning becomes constructive and self-regulating. Educational strategies must enable the student to construct knowledge, interpret it and relate it to other knowledge. It is important to know how to perform a task and how that task can be adapted to new situations (Chapman & Mitchell, 2020). During the interview, a teacher mentioned that in distance lessons, the students were less motivated to be involved in the lesson activities and used their creative powers moderately in performing the tasks.

'The class refuses any creative work. If they can only choose between a standard and creative task, they start feeling insecure. "I'd better write a few words" – and that's it. If they need to improvise, they leave their comfort zone and become afraid to be recorded. They don't want to be filmed, listen [to their recordings], or talk' (Teacher A).

It is important to note that each conversation with students and their various performances is a response for the teacher about the students' knowledge and understanding and the effectiveness of the selected teaching methods (Kang & Keinonen, 2018). This information is an important basis for planning and individualising future teaching and learning activities.

'Now you have to come up with a way for communication to take place without the usual group work. I'm trying to apply the flipped classroom – it works out very well. The kids that need more time can do the tasks at home, at their own rhythm and pace. Some children just need to check every second word; others need to check only one. You then model the workload: ask the weaker students to answer one question, the excellent ones to answer three questions. This poses greater demands for the teacher to come up with the tasks, to choose the online materials to present to the students so that they can get involved in learning more actively' (Teacher A).

Formal and informal verbal assessment is very important in motivating students. It is more difficult for a teacher to demonstrate support and provide feedback to students in a distance learning situation. Therefore, the emotion conveyed by the teacher is of great importance. In the observed lessons, the students received feedback on mistakes and aspects of learning to be corrected, yet the emotional content conveyed by the teachers was not as deep.

'Students get an answer quickly, here and now. The student sends me the work, and I get a message, then I note the mistakes and write comments and remarks. If they need revision, the students can find everything on the current topic. I mark the wrong place and send it back for them to correct' (Teacher A).

It is noteworthy that during distance learning, the teachers were more likely to choose quick programmed feedback and written comments confirming what the student was doing correct and focused on improving the work. In the pedagogical process under analysis, the obvious activities of teachers were related to the identification of errors/knowledge gaps and the students' motivation to correct them.

Another problem associated with distance learning was the monitoring of students' individual progress. 'Teachers cannot guarantee children's fair work in the classroom. Tests take place online. The teacher does not see what the child is doing, if he/she has any additional gadgets, or if someone tells them the correct answers,' noted the school principal.

After discussing the content of this sub-theme, it should be noted that the students encountered barriers to adapting to the changes in the organisation of the curriculum. 'Learning behind the screen' in the home environment leads to insufficient involvement of the students in the educational process and reduces their motivation to participate, collaborate and create actively while performing the tasks. However, distance learning allowed for quick and

objective feedback from the teachers and encouraged the students to monitor their learning progress purposefully. However, students received less verbal formative assessment as a means of supporting their learning process.

Sub-theme 3: From self-regulatory learning to active involvement

Independent and self-directed learning is directly linked to student development. Independent work and learning build self-confidence (Chen, 2020). This develops the student into a motivated and individually experimenting student. One of the positive sides of independent learning is the students' ability to work on their own with confidence and minimal guidance. Distance learning creates preconditions for autonomy in the learning process and gives students greater opportunities to plan and manage their learning (Liman & Tepeli, 2019).

Nevertheless, these circumstances cannot always be treated as positive. The interview data revealed that some students experienced difficulties planning their time for independent learning while distance learning. A teacher noted, 'The students work differently on their own. They sit at home; they can go and eat any time; after they have eaten, the lesson is over, and the work has not been done yet. [...] They are unable to plan their time; if they are slower and no one helps them to follow the pace, they develop no skills to learn on their own. The problem is that they spend time meant for self-study doing something else or fail to learn and do the work on time' (Teacher A).

Another aspect identified as a barrier to learning was the assurance of a work and rest balance. A long period of learning at computers, decreased activeness, reduced time in the fresh air, and a lack of a consistent schedule affect the balance of work and rest periods for students, which leads to difficulties in independent learning. The teacher claimed in frustration:

'The children just work violating the normal standards studying. They have lost the sense of time: they reply to my letters at eleven at night [...] but what can I do if they choose that style of working themselves... It is their own [students and their families] decision to be constantly online. (Teacher G).

The school principal distinguished problems related to the education of children with special educational needs.

'Most students do not like contactless learning, and it is difficult for them to learn 'through the screen'. Such a mode of learning is suitable for individual children only. The majority try to connect and work with assistants. The teacher assistants receive assignments from the subject teachers, schedule their time and work with these students' (School Principal).

The study identified teacher efforts to motivate students to set learning goals for themselves and to achieve better outcomes. The teacher mentioned using *Liveworksheets* in the educational process, which are online exercises designed according to the student's level.

'I use virtual task sets, where children can check if they have done well while working. Seeing their errors, they can correct themselves multiple times. It helps to strengthen their self-motivation for learning. I can track their progress and see how stronger students work up to get a ten [a ten-point assessment scale is used in Lithuania], whereas weaker ones do the tasks and send them even with mistakes [...] Distance [learning] enables children to assume responsibility for their own results and do as much as they want...' (Teacher A).

After completing the task, the students could review their work, the errors were marked automatically, and thus, they could redo the task as long as they achieved the desired result. Afterwards, they had to send it to the teacher for final evaluation. One of the students commented,

'While learning, I really like to complete those Liveworksheets because you can do them and find out what you did wrong. I also like watching videos and discussing them later' (Student G).

It is noteworthy that the more independent students are, the easier it is for them to set learning goals, make decisions, identify their learning needs, take responsibility for developing and implementing their own learning, monitor their progress towards their learning goals, as well as self-assess their learning outcomes.

However, in the interview, a teacher maintained that the students reflected less and avoided giving their opinion.

'We have a communication "window" in which I ask them to vote, record, and express their opinions, raise their hand [...], they do not reflect; there is no such habit. During the lesson, I ask them to send me a short reflection, and it happens that some of them do not send it at all' (Teacher A).

Reflection allows understanding the direction of one's progress in learning. By ignoring this stage of learning, the opportunity to personally reflect on and verbalise learning gaps and difficulties is decreased (Hall & Simeral, 2017). As a result, it is more difficult to learn in a motivated and purposeful way and get actively involved in the learning process. The barrier to student involvement in the learning process is determined by the transformation of communication

with students and teachers from direct social interaction-based communication to communication through a 'flat-screen mediator'. During such communication, there is much 'side noise' and other factors that limit the purposefulness of self-regulated learning. They include invisibility behind the screen, opportunities to use the phone or to play, and similar factors. As a result, the student's responsibilities towards the teacher, other students, and their own participation in the learning activities are lost. This means that the home environment turns into a limited educational environment.

Sub-theme 4: Emotional and psychological well-being

The difficult situation of the pandemic revealed that distance learning should still involve human relationships, community, emotional health and well-being. However, in distance learning, the need for social communication and group communication, especially relevant for students, remains an acute barrier to learning.

'The lack of social contact is felt very much. Everyone expected the second stage to last just a couple of weeks. But when they passed, and the lockdown was extended, all the students I work with said, "We want to learn live; we want to sit down and chat." They can stay in the system to talk, but that's not real. Communication is narrowed to a flat screen. This is definitely a problem for them' (School Principal).

Restricted social relationships lead to a significant reduction in the influence of the peer group as a social network. After losing these direct socio-emotional relationships, students encounter learning barriers related to the changes and disorders in emotional and psychological states.

'Now there really are children who need psychological help. Some have become even more closed: if some of them joined the lessons at the beginning of the pandemic, they stopped in about the sixth week. They are emotionally vulnerable, and psychological help is provided [by the school psychologist], yet that is not enough. They are often distanced from everything' (the School Principal).

During the interview, the teacher distinguished existential anxiety and a fear of falling ill. An adult and more experienced person can more easily understand and verbalise the emotions associated with the complex pandemic situation. However, in students, they are not always recognisable and expressed.

'Two students brought covid from the sports club. It's good that no one got infected, thank God – nobody got infected! I was de facto isolated <...>. I

discovered that I isolated myself too late. So, we experienced a bit of existential anxiety. Although the children did not say that, I think they were also a little shocked that they could have fallen ill' (Teacher G).

Students are often afraid to try new and challenge-based ways of learning offered by teachers. Students must go beyond their personal comfort zones. The teacher noted that

'[...] less capable children are afraid to ask. In the real lessons, you would come close, talk, and answer the question in person. Everything here is like on stage; the children don't even write in the chat. So, I suggest that when we stay in a group with a few students, we will discuss the issues that are important to them' (Teacher A).

The study revealed teacher support for students to ensure a safer and supportive relationship. The efforts of the teachers to motivate students to establish and maintain a safe and adequate relationship with the environment, not to be afraid of environmental pressures, were observed.

Not all the circumstances in the distance learning process are conducive to achieving what has been planned. However, it is obvious that in the distance learning process, the students faced situations when the help of another person was needed. The following excerpt from a distance learning lesson reveals teacher and class support for the student during an online English lesson:

Student M: 'Oh, I can't turn it on my camera keeps turning off.' The student is reading what he has written, with a lot of difficulty and numerous pauses, frequently mispronouncing. The teacher is listening. The student: 'How is "meduolis" [gingerbread] in English?' The teacher tells him. The teacher asks the student in English what the end of his story is. He answers nothing and keeps silent for a long time. [it is unclear whether he did not understand what the teacher was asking or disconnected]. Student M joins again and says in Lithuanian: 'My phone is discharged. I will tell you the end soon'. He fumbles for a long time, sighs, and finally starts reading. The teacher helps him by asking questions in English (from lesson observation).

This episode demonstrates how the student-teacher interaction reveals a relationship based on trust: the student felt safe to make mistakes and ask questions; the teacher was benevolent and helpful during the student's performance. Student-student interactions also disclosed generous and sincere support from the group to the student who found it more difficult to present his work.

The study also highlighted cases of successful adaptation of SEN students to distance learning, which was partly due to the sense of emotional and psychological security. For example, the teacher noted that distance learning developed the students' sense of self-confidence.

'Student N [a student with special education needs] actively participates in the lesson. Although he does not know the answer, he does not hear other students' remarks and feels more encouraged. I would say his emotional state is different when he doesn't hear other students. It seems to me the screen gives a sense of security: if you ask them, they have time to arrange their thoughts before they turn the sound on. The children see everyone's faces, and you see their emotions, that's an advantage' (Teacher A).

It appeared that class and other teachers had to allot much attention while ensuring a positive relationship with parents, identifying the students' emotional-psychological problems, and searching for ways to support the students. The school principal stated

'The class teachers monitor the teachers' comments, call parents and ask what has happened so that the child does not join the lesson. Parents claim that the children need psychological help. We respond to their claims: we contact the school psychologist, and she provides help to the students' (the School Principal).

During the research, it was determined that the unusual distance learning situation caused emotional stress or exacerbated psychological problems for some students. Some students became more emotionally vulnerable, especially if they did not receive caring and sensitive support from their families. Others found it more difficult to participate adequately in the learning process or set or follow their own rules for engaging in a lesson, doing homework, or following daily routines.

Discussion and Conclusions

The purpose of this study was to examine the barriers to learning caused by COVID-19 at the lower secondary school level. Moreover, attempts were made to reveal how these barriers could be minimised by the school. The main theme, *lower secondary school students' barriers to learning in the context of the COVID-19 pandemic*, was concretised in the following sub-themes that emerged from the research data: *learning accessibility and technological literacy; planning of learning and feedback; self-regulated learning and active involvement;*

emotional and psychological well-being. The study revealed important context-related barriers to learning and the school's performance in overcoming them under lockdown conditions.

Firstly, the study's findings confirmed the findings of other researchers (Bhaumik & Priyadarshini, 2020; Dube, 2020; Sari & Nayir, 2020) that a major obstacle to distance learning under lockdown conditions is a lack of IT devices and insufficient IT skills. The case study revealed that the transmission of the curriculum and lack of IT skills of both students and teachers created a barrier to learning. High-quality use of information technologies leads to consistency of the educational process organisation and avoids content delivery and information reception problems. However, it is important to note that in the case of Lithuania, unlike in other countries (e.g., South Africa, Turkey, India), internet access is not itself a barrier.

Secondly, the study revealed the students' insufficient involvement in the educational process, their loss of interest and motivation, and their unwillingness to participate and cooperate actively in performing the tasks. Saphier et al. (2008) note that students' self-motivation to continue their activities in the face of challenges is an important part of self-regulated learning. In the present research, it was also identified that during distance learning, the students who participated in the study had few opportunities to work in groups, and to discuss and express their opinions, chose the usual, and therefore acceptable learning methods. These results align with other study results on the Covid-19 pandemic and distance learning (e.g., Ebner & Gegenfurtner, 2019). Furthermore, the authors note that students were less engaged in learning during the lockdown. Furthermore, when student involvement in the educational process decreases, it becomes more difficult to identify their understanding of the covered material and the effectiveness of the selected teaching methods. Therefore, it is important to look for strategies and ways to ensure student engagement and active participation in distance learning.

Thirdly and most importantly, the studies accomplished by other researchers reveal that the pandemic and lockdowns caused mental and socio-emotional problems (Bhaumik & Priyadarshini, 2020; Elmer et al., 2020;). In this study, it was also noted that students' emotional and psychological health deteriorated: the students became more closed, sensitive, and vulnerable while learning remotely. Meanwhile, for the students prone to psychological problems, these only intensified and became more pronounced during the pandemic and lockdowns. Thus, it is important to focus not only on ensuring the learning and knowledge acquisition processes of learners but also on maintaining and strengthening their mental health.

Last but not least, there is still a lack of research analysing how the Covid-19 pandemic and lockdowns have affected various areas of education and its participants. Existing research is focused on a single level of education or participants. Meanwhile, studies on how the pandemic and lockdowns have affected the entire education system are insufficient (Harris & Jones, 2020). Furthermore, we believe that no guidelines or strategies for operating in a pandemic environment exist. In the case of our research, the following school strategies for minimising barriers to learning were highlighted: technical (supply of IT tools; preparation of video material on how to work/learn remotely); pedagogical (application of various tools (e.g., liveworksheets); provision of timely feedback); managerial (creation of a timely student support system; positive and frequent communication with parents; establishment of an IT specialist-consultant position), etc. Similar tools to address the challenges posed by the pandemic and lockdowns have been used or proposed by other researchers. For instance, Dube (2020) places a particular emphasis on providing devices for both teachers and learners to enable rural students to engage in an online learning process, whereas Bhaumik and Priyadarshini (2020) highlight the importance of 'hardware support' for all participants in the educational process. Similarly, Sari and Nayir (2020) propose to reduce the workload of teachers and students by introducing digital learning platforms, supporting the learning process with e-books, v-blocks and social media. Furthermore, such teaching/learning methods as case studies, discussions, experimental learning, brainstorming sessions, and games can be employed to make lessons more efficient and effective in a pandemic context.

One of the limitations of the present research is its locality (i.e., the case of one school). Moreover, some conclusions and insights (e.g., concerning the barriers to learning that emerge due to students' emotional well-being) are primary and require more in-depth research. However, as mentioned before, no universal formulas to ensure operational efficiency in the pandemic environment exist. Furthermore, the handling of the pandemic itself is contextual. Thus, the study's findings may be relevant to other secondary schools facing similar barriers to learning. The findings of this case study also provide guidelines for further studies. Future studies could focus on a systemic approach to eliminating barriers to learning caused by the pandemic, which could provide greater insights into how to deal with barriers to learning caused by unexpected and rapid changes in education.

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