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Teachers' Practices and Opinions on Distance Education: The Case of Europe

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Abstract: *The use of rapidly developing mass media in the education process has revealed the concept of distance education, the importance and necessity of which have been re-understood throughout the world during COVID-19. The purpose of this study is to determine teacher practices in distance education and to examine teacher views on distance education during the pandemic process in European countries. Data about teaching models, platforms, web tools, special methods and techniques, materials used during this process, and teacher reviews were collected from 36 teachers working in nine different European countries through a semi-structured interview form. The findings have revealed the advantages and disadvantages of various teacher practices in distance education. In addition, it is concluded that having pre-pandemic distance education experience has been an important factor that facilitated the post-pandemic distance education process.*

Keywords: distance education, web tools, teacher practices, pandemic

According to UNESCO (2020), the 2019 pandemic impacted approximately 1.6 billion students across 190 countries, resulting in the largest educational disruption in history. In response, countries opted to partially open, fully open, or completely close educational institutions, making distance education a priority issue. Perienen (2020) argued that technology and distance education, which influence all areas of the education sector, underwent a paradigm shift due to the COVID-19 pandemic. Although the concept of distance education has a long history, it was the first time that educational applications reached such large masses simultaneously across society. The literature offers various definitions of distance education. Altıparmak (2011) describes distance education as a system primarily utilized by individuals lacking financial means or the opportunity to study. It involves planned and comprehensive learning activities designed to overcome time and space constraints through special communication methods, using electronic or non-electronic systems. According to Özarslan (2008), distance education comprises four elements:

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- Providing a formal education opportunity through state institutions,
- Teachers and students can collaborate at different times and places through distance education applications,
- It can be performed both synchronously as well as asynchronously,
- Making connections between resources. Thus, it provides easier budget, design, and transmission planning.

These elements encompass various features and dimensions of distance education. İşman (2008) describes distance education as enabling teachers and students, who are separated by considerable distances, to communicate effectively both visually and audibly. Bolliger and Wasilik (2009) assert that for a course to be conducted via distance education, the learner and teacher must be in separate environments, it must be overseen by an educational institution, specific tools must be utilized, communication should be two-way, and at least 80% of the course content should be delivered through internet-based learning technologies. According to Simonson, Schlosser, and Orellana (2011), distance education is a formal, institution-based educational process where the learner and teacher are in different locations and connect with each other as well as with resources through communication technologies. When considering the mentioned definitions, distance education can also be defined by authors "planning the learning and teaching processes by using online tools and teaching through these tools without time and place limitations".

Research has identified many positive aspects of distance education. Kırık (2014) explains that distance education is crucial for developed countries due to their emphasis on lifelong learning activities. Additionally, for countries with limited physical and financial resources, distance education is essential for providing equal opportunities and ensuring the right to education. Curtis and Lawson (2001) found that online learning can foster a successful collaborative environment, comparable to face-to-face interactions. Today, technology is increasingly utilized by learners and educators for academic purposes to share experiences and connect (Hussain & Çakır, 2015).

However, distance education also has several negative aspects, as highlighted in various studies (Özgöl, Sarıkaya & Öztürk, 2017; Tryon & Bishop, 2009; Uşun, 2006; İşman, 2011; Bakioğlu & Can, 2014; Yalın, 2020). These drawbacks include a lack of social interaction, limited individual interaction, difficulties in accessing instructors, discipline issues, potential harm to student development from prolonged screen time, high costs, internet access problems, and ineffectiveness in developing affective and psychomotor skills. An evaluation of distance education in Europe during the pandemic revealed that internet connectivity in schools is unevenly distributed across countries, participation rates vary significantly in highly connected schools, and Nordic countries are generally better equipped digitally than others (Commission Europe, 2019).

The impact of the COVID-19 pandemic and the resulting digital transformation of education has highlighted the need for revisions in global education systems. This situation has led to a new research area focusing on the effects of these changes on students, teachers, parents, education stakeholders, education programs, and policies. A review of literature within the framework of European countries shows that studies mainly aim to evaluate the current situation, identify improvements for efficiency, examine decisions made by countries during the pandemic, and analyze educational practices (Grek & Landri, 2021; Vasileios, Denis & Evi, 2021; Motiejūnaitė-Schulmeister & Crosier, 2020; Bozkurt et al., 2020; Viner et al., 2020; Williamson, Eynon & Potter, 2020).

In this context, the primary purpose of the research is to determine teacher practices in distance education and to examine teacher views on distance education during the pandemic in European countries. To achieve this goal, the research seeks to answer the following questions:

In European countries,

- Which teaching models and platforms have been used in the COVID-19 process?
- What are the web tools that teachers use in distance education during the COVID-19 process?
- What are the special methods and techniques that teachers use in their lessons in distance education during the COVID-19 process?
- Which teaching materials did teachers use in distance education during the COVID-19 process?
- What are the positive teacher opinions about distance education in the COVID-19 process?
- What are the negative teacher opinions about distance education in the COVID-19 process?
- What are the problems teachers face in this process?

METHODOLOGY

RESEARCH APPROACH AND DESIGN

The research was conducted as a case study, employing one of the qualitative research methodologies. This design facilitates an in-depth examination of specific aspects of the researched topic, uncovering details that might be overlooked by alternative methods (Meriam, 2013; Punch, 2005).

SAMPLING

The study group of this research consisted of 36 teachers working in 9 European countries, participating in two different Erasmus+ projects carried out in 2021-2022. The Erasmus+ project is the European Union's grant program in the field of education, youth and sports. The criterion sampling method was utilized in the selection of teachers. The criteria in the study were determined as:

- "to be a teacher who has been actively working in a country in Europe for at least five years"
- "to teach with distance education in the 2019-2021 academic periods during the COVID-19 process"

Information on each European country regarding the working group is presented in Table 1:

Table 1
Information on The Study Group

Country	Number of participants	Gender	Subjects	Professional experience (in years)
Iceland	2	2K	1 Mathematics 1 Social Sciences	11-15: 1 16-20: 1
Spain	2	1K 1E	1 English 1 Physical Education	16-20: 2 20+: 3
Portugal	3	1K 2E	1 Mathematics 1 Geography 1 Art and Multimedia	
Greece	5	4K 1E	1 French 1 History 1 Physical Education 1 Mathematics 1 Physical Education 1 Information& Technology	5-10 2 11-15: 2 20+: 1
Sweden	3	3 K	1 English 1 Swedish 1 Visual Art	5-10:1 20+: 2
Norway	3	1K 2E	1 Physical Education 1 Information &Technology 1 Building & Construction	5 to 10: 1 20+: 2
Turkey	6	3K 3E	3 English 3 Biology	5-10:1 11-15: 1 16-20: 1 20+: 3
Romania	6	4K 2E	2 Guidance& Counselling 1 English 1 Physical Education 1 Romanian 1 Religious Culture	5-10: 2 11-15: 1 16-20: 2 20+: 1

Italy	6	4K 2E	1 Italian 4 English 1 Information &Technology	16-20: 2 20+: 4
Total:	*36*	*19K 11E*		

An examination of Table 1 reveals that the study group comprises 36 participants from nine European countries (Iceland, Spain, Portugal, Greece, Sweden, Norway, Turkey, Romania, and Italy), with 19 female and 11 male teachers. The teachers represent 17 different teaching disciplines. The most represented subjects were English (n = 10), Physical Education (n = 5), Mathematics (n = 3), Biology (n = 3), and Information and Communication Technology (n = 3). The experience levels among the teachers varied: seven had 5-10 years of experience, five had 11-15 years, eight had 16-20 years, and 16 had over 20 years. Within the study group, all schools were public except for one private school in Greece, and only the Norwegian teachers worked at a vocational school. The teachers taught students aged 12-17.

Data Collection Methods and Tools

In this study, data were collected through semi-structured interview forms created by two authors who are experts in learning-teaching processes and educational technologies. During the pilot study, the initial form was tested with three easily accessible English teachers. Based on feedback from this pilot, some items were corrected, added, and translated, resulting in the final version of the interview form. The form consisted of four parts.

The first part examined the descriptive and demographic characteristics of the participants, including country, gender, experience, and branch. The second part contained questions about the distance education process during the COVID-19 pandemic, addressing teaching models, platforms used, web tools employed, special methods and techniques, and teaching materials. The third part included a question regarding the positive aspects of distance education during the COVID-19 pandemic, while the fourth part focused on the negative aspects and the challenges encountered.

Validity and Reliability

The semi-structured interview form was crafted by two researchers esteemed in the field, and its clarity and translation underwent scrutiny in a pilot study involving three English teachers. In ensuring validity, meticulous documentation of the data collection and analysis processes is imperative (Yıldırım & Şimşek, 2006). Consequently, this study elucidates the comprehensive process of data gathering and analysis. Furthermore, the findings section incorporates participant quotes representing each sub-category. To uphold reliability, consistency across sub-categories was cross-checked by consulting two field experts. Reliability was assessed using the formula proposed by Miles and Huberman (1994), where reliability is determined by the ratio of agreements to the total of agreements plus disagreements. According to Miles and Huberman (1994), a consensus rate of at least 80% is expected among coders. In this study, the consensus ratio stands at 91%, indicating a high level of reliability.

Data Collection Process

In the research, data were gathered as part of two Erasmus+ project activities, in which I, the first author, participated in terms of using the interview method, a qualitative data collection technique, and a semi-structured interview form. The interviews were conducted face-to-face. Before data collection, the researcher obtained written permission from two different project coordinators and provided general information about the research to the volunteer teachers who met the criteria. All volunteer teachers signed a consent form agreeing to the publication of the research. The initial data were collected by interviewing five teachers daily (a total of 20 teachers) following the completion of the Erasmus+ project activities at the host school in Greece in October 2021. Additional data were collected from 16 teachers participating in the Erasmus+ project in Turkey in December 2021.

DATA ANALYSIS

The content analysis method was employed in the analysis of the data. In the content analysis method, it is essential to collect similar information within the framework of a certain subject and to find a way to make it understood by the reader. A definite idea is reached in the explanation of the data obtained (Yıldırım & Şimşek, 2013). In the study, data analysis was carried out in the following stages:

- Coding the semi-structured interview forms of the participants with country abbreviations (such as 1TR, 2TR, 31RO, 32RO, 25IT, 18NO….)
- Checking the given answers for relevance. There is no invalid interview form in the research.
- Tabulating the data obtained from the second part of the semi-structured form based on countries
- For the third and fourth parts of the semi-structured form; grouping the answers given under the heading of positive/negative impact statements according to their similarities and differences.
- Obtaining participant confirmation by applying to specific participants again for unclear concepts
- Coding the answers under the heading of positive and negative impact statements and creating categories
- Creating sub-categories according to the common meanings in the categories and placing the answers into sub-categories appropriately (Ekici,2016, a, b)

RESULTS

TEACHER PRACTICES REGARDING DISTANCE EDUCATION DURING THE COVID-19 PANDEMIC PROCESS

Upon examination of Table 2, which scrutinizes the teaching models implemented during the COVID-19 pandemic across European countries, it was observed that only Spain and Greece exclusively adopted online education, while a hybrid approach (combining face-to-face and online instruction) was employed by seven other European nations. In terms of platforms utilized for distance education, "Zoom" emerged as the most favored, with 6 instances, followed by Google Meet (n=5), Google Classroom (n=2), and Microsoft Teams (n=2). Various web tools were employed by teachers during distance learning, with Google tools being the most prevalent (n=11), followed by Kahoot (n=5), Microsoft Office (n=3), and Canva (n=2). Notably, Google

web tools were utilized by educators from all participating countries except Spain, Portugal, and Turkey.

Table 2
The Practices of the Participants Regarding Distance Education during the COVID-19 *Pandemic Process*

Countries	Teaching model	Platforms used	Web tools used	Special methods and techniques used	Teaching materials used
Iceland	Hybrid	Zoom Google meet	Google Classroom Iceland education website	-Since it was a hybrid system, usual methods were used.	iPad, E-books, Different kinds of apps
Spain	Completely online	Zoom Google Classroom	Online games YouTube School Blog	-Usual methods	Pdf files Books Tablets PC, Phone
Portugal	Hybrid	Zoom Microsoft Teams	PPT Microsoft Office Canva, Kahoot, Shotcut, Audacity	-Project-based learning method	Quizzes, Applets, Books, Maps, Charts, Worksheets, Video, Audio
Greece	Completely online	Zoom Skype Google Classroom Webex	Google Damboard Kahoot Google forms Scratch / Slides Mentimeter Interactive books Wordwall Quizzes	-Online games -Quiz -Educational games with quiz -Interactive group work -Digital exercises -YouTube content	Videos PPT Notes Music, movies Online games Virtual tours at the museum Digitizer
Turkey	Hybrid	Zoom	Canva PPT Quiz Kahoot	-Flipped classroom -Using digital tools	PPT Video Online books PDF files

			YouTube Virtual museum website Human Anatomy 3D	-Group working -Cooperative learning -Discussion - Question-answer -Task-based learning	Media player files Microsoft Office
Romania	Hybrid	Google meet Zoom	YouTube/ Padlet Jamboard / Lino Kahoot / Wordwall / Google forms	-Brainstorming -Therapeutic story -Roleplay -Questioning -Online Games -Dramatization Problematization	Bluetooth Speaker Links Puppets Platforms
Italy	Hybrid	Google Meet	Classroom software app, Google Suite, Kahoot, Google Classroom, Google platform	-Flipped classroom -Cooperative Learning -Digital story-telling	Google forms Online Websites (British Council, TED Ed.) YouTube /PPT / eBooks / Module Google

In the fourth segment of Table 2, teachers were asked to specify any special methods and techniques they employed in distance education during the pandemic. Analysis revealed that teachers from Iceland and Spain predominantly utilized conventional methods, while others favored innovative approaches such as cooperative learning & group work (n=4), online & educational games (n=3), digital tools (n=3), flipped classrooms (n=2), task-based learning (n=2), and questioning (n=2). Additionally, techniques such as project-based learning, synchronous & asynchronous online courses, check-in & exit, discussion, brainstorming, therapeutic story, dramatization, problematization, and role-play were also mentioned.

In the fifth section of Table 2, the teaching materials and web tools utilized by teachers in distance education lessons were scrutinized. This analysis underscored the wide array of materials employed by teachers.

Positive and Negative Teacher Opinions on Distance Education During the COVID-19 Pandemic Process

In this study, when the views of teachers on the advantages and disadvantages of distance education during the COVID-19 pandemic process in Europe were examined, 11 out of 36 teachers stated that distance education did not offer any advantage (12SP,6IC,11GR,14PO,15PO,21SW,17NO,23IT,24IT,26IT,27IT). There was no opinion stating that there was no disadvantage to distance education.

Table 3

Statements of Teachers Regarding the Positive/Negative Effects of Distance Education during the COVID-19 Pandemic Process

Positive expressions	**f**	**Negative expressions**	**f**
Giving students more time to do research (2TR)	1	Students' inability to socialize/isolate (2TR,5IC,6IC,7GR,9GR,12SP,17NO,19NO,22SW ,23IT,25IT,26IT,27IT,28IT)	14
Time and place limits (1TR,29RO,30RO,31RO,32 RO,33RO)	6	Students' motivation problems (2TR,8GR,10GR,12SP,21SW,22SW,26IT,28IT)	8
Being practical and easy to reach students (4TR, 34RO)	2	Internet access problems (1TR,7GR,8GR,14PO,23IT,24IT,27IT,29RO,30R O,32RO,33RO,35TR,36TR)	13
Saving time (3TR,10GR,16PO,35TR,36 TR	5	Technological device access problems (such as computers and tablets) (1TR,8GR,32RO,33RO)	4
Easier classroom management (3TR)	1	Low student participation in classes (3TR,35TR,36TR)	3
Making the lessons more concrete and understandable by means of digital materials (3TR)	1	Students being quiet in classes (3TR)	1
Flexibility of lesson hours (4TR)	1	Failure to properly evaluate the course (3TR,14PO,18NO,21SW,35TR,36TR)	6
Students can study the material based on their own learning speed (5IC,13SP,18NO,36TR)	4	Concentration problems of students (4TR,7GR,11GR)	3
Enabling creative learning (7GR)	1	The inability of teachers to control students remotely	6

		(4TR,10GR,11GR,14PO,35TR,36TR)	
Being comfortable (7GR,16PO,35TR)	3	Inability to get help from the family on how to use their technological devices (8GR)	1
Hardworking students adapt very easily (8GR)	1	Students getting bored in lessons (9GR)	1
Allowing the use of extra digital tools and materials in lessons (9GR, 10GR)	2	More tiring for students and teachers (11GR,15PO,31RO)	3
Allowing lessons to be more interesting and interesting (9GR)	1	Causing inequality among students (12SP,13SP)	2
Students feeling safer at home (19NO,18NO,32RO,33RO)	4	The inability of students to organize time (14PO)	1
Developing teachers' digital skills (18NO,22SW,25IT,36TR)	4	Depression among students (18NO)	1
Allowing teachers to acquire new methods and approaches (22SW)	1	Students not being able to manage the process well (21SW,18NO,20SW,33RO)	4
Increasing student achievement (20SW)	1	Teachers' poor communication with their students (21SW,36TR)	2
		Spending a lot of time in front of the screen (25IT)	1
		Teachers' lack of technology (33RO)	1
Total	39		75

In this study, the participants were coded with the abbreviations of the countries they worked in: TR: Turkey, NO: Norway, RO: Romania, IT: Italy, SW: Sweden, GR: Greece, PO: Portugal, SP: Spain, IC: Iceland

In Table 3, when the statements of teachers regarding the *positive effects* of distance education during the COVID-19 pandemic process were examined, a total of 39 opinions were expressed, with the most frequently used expressions being "no time and space limits" (n = 6), "saving time" (n = 5), "students' ability to study the material based on their own learning speed"

(n = 4), “students feel more secure” (n = 4) and “teachers improve their digital skills” (n = 4). When evaluating the viewpoints regarding the adverse impacts of distance education during the COVID-19 pandemic, a total of 75 opinions were voiced. The most commonly utilized expressions included: " inability of students to socialize/being isolated" (n = 14), "Internet access problems" (n = 13), students' motivation problems” (n = 8). Upon examination of the countries of origin of the teachers expressing these perspectives, a significant diversity was noted. Consequently, the negative opinions voiced by the teachers could be interpreted as the challenges they encounter prominently within the distance education process.

Expressions regarding both the positive and negative impacts of distance education during the COVID-19 pandemic were analyzed and categorized based on common themes. Table 4 encompasses positive categories and subcategories, while Table 5 delineates negative categories and subcategories:

Table 4

Distribution of the Positive Effects of Distance Education by Category and Subcategories during the COVID-19 Pandemic Process

Category / *Subcategory*	*Flexibility*	*Digitality and Innovation*	*Individuality*	*Ease*	*Comfort*
Teacher		- Allowing teachers to acquire new methods and approaches (22SW) -Developing teachers' digital skills (18NO,22SW, 25IT,36TR)		-Easier classroom managem ent (3TR) - Practical and easy-to-reach students (4TR, 34RO)	
Student		-Allowing creative learning (7GR)	-Students can study the material based on their own learning speed. (5IC,13SP,18 NO, 36TR) - Giving students more time to do research (2TR) - Increasing student	Hardwork ing students adapt very easily (8GR)	-Students feel safer at home (19NO, 18NO, 32RO,33R O)

			achievement (20SW)	
Materiel		-Digital materials make the lessons more concrete and understandable (3TR) - Allowing the use of extra digital tools and materials in lessons (9GR, 10GR)		
Contents		-Allowing the lessons to be more interesting (9GR)		
Period	-No time and place limits (1TR,29RO, 30RO, 31RO,32RO, 33RO) - Flexibility of lesson hours (4TR) - Time saving (3TR,10GR, 16PO, 35TR,36TR)			-To be comfortable (7GR,16PO ,35TR)

According to Table 4, five positive categories were determined when the common meanings of the opinions expressed by the teachers were analyzed. These categories are: *flexibility, digitality, innovation, individuality, ease, and comfort.* Teachers opined that each category had a relationship with one or more of the sub-categories of *student, teacher, material, content, and process.* In this case, the category of *flexibility* of distance education in the COVID-19 was related to the *process*. It encompassed the views of "no time and place limit", "flexibility of course hours" and "saving time". Only teachers from Turkey and Romania mentioned the absence of time and

place constraints, while only teachers from Turkey cited flexible course hours. Examples of these perspectives are provided below:

> *"There is no limit of time and place for online lessons during COVID-19 and this is really advantageous."* **(1TR)**
> *"You can teach your students anytime, anywhere. The only thing you need is the internet and PC. It's practical."* **(4TR)**

The category of providing *digitality and innovation was related to teacher, student, material, and content*. It included views such as "enabling lessons to be more interesting and interesting", " developing teachers' digital skills" and "enabling creative learning", "enabling teachers to acquire new methods and approaches". In this category, opinions were mostly expressed by teachers from Turkey and Greece. Examples of these views are given below:

> "*You have to be creative to figure out how to teach online. I developed my technical skills and new approaches to the subject."* **(22SW)**
> *"We got better digital skills."* **(18NO)**

Providing *individuality* pertained to the *student* sub-category and included the views of "students can study the material based on their own learning speed", "give students more time to do research" and "increase student achievement". Among these perspectives, Swedish teachers were the only ones to emphasize increasing student achievement, while Turkish teachers were the only ones to express the idea of granting students more time for research. Instances of these perspectives are provided below:

> *"Students can go through the material on their own pace."* **(5IC)**
> *"It gives an opportunity for students to study individually"* **(36GB)**

The category of *ease* pertained to the *teacher* and *student* sub-categories and included the views of "easier classroom management", "hardworking students adapt very easily" and "reaching students is practical and easy". In this category, opinions were expressed only by teachers from Turkey, Romania, and Greece. Examples of these views are given below:

> *"It helps teachers manage the class in an easier way since the participation rate of the class was lower than normal."* **(3TR)**
> *"Students that are intelligent can easily adapt and get better."* **(8GR)**

Enabling *comfort* pertained to the *student* and *process* sub-categories and included the views of "students feel safer at home" and "comfort". The opinions of students feeling more secure in the home environment were expressed only by teachers from Norway and Romania. Illustrations of these views are provided below:

> *"Some shy children have become more courageous at their homes."* **(32RO)**
> *"It's very comfortable."* **(7GR)**

Table 5

Distribution of the Negative Effects of Distance Education into Categories and Subcategories during the COVID-19 Pandemic Process

Category / *Subcategory*	*Social Problems*	*Technology Related Problems*	*Problems With Success*	*Psychological Problems*	*Problems of Managing the Process*
Teacher	Teachers' poor communication with their students (21SW,36TR)	Teachers' lack of technological knowledge (33RO)			Teachers not being able to control students remotely (4TR,10GR,11GR,14PO,35TR,36TR) Spending a lot of time in front of the screen (25IT) More tiring for students and teachers (11GR,15PO,31RO
Student	Failure of students to socialize/ isolate (2TR,5IC,6IC,7GR 9GR,12SP,17NO,	Inability to get help from the family on how to use their technological devices (8GR)	Students' motivation problems (2TR,8GR,10GR, 12SP,21SW,22SW,26IT,28IT) Low student participation in	Making students depressed (18NO)	Students' inability to organize time (14PO) Spending a lot of time in

	19NO,22SW,23IT 25IT, 26IT,27IT,28IT)		classes (3TR,35TR,36TR) -Students' silence during the lessons (3TR) -Concentration problems of students (4TR,7GR,11GR) -Students getting bored in class (9GR) -Causing inequality among students (12SP,13SP)	front of the screen (25IT) - More tiring for students and teachers (11GR,15PO,31RO) - Students not being able to manage the process well (21SW,18NO,20SW, 33RO)
Material		- Internet access problems (1TR,7GR,8GR,14PO,23IT, 24IT,27IT,29RO,30RO, 32RO,33RO,35TR,36TR Technological device access problems (1TR,8GR,32RO, 33RO)		
Evaluation			Failure to properly evaluate the course (3TR,14PO,18NO, 21SW,35TR,36TR)	

According to Table 5, when the common meanings of the opinions expressed by the teachers were correlated, five negative categories were identified: *social problems, technology-related problems, problems with success, psychological problems, and problems related to managing the process.* As per the opinions expressed by the teachers, each category had a relationship with one or more of the sub-categories of *student, teacher, material, and evaluation.* In this scenario, the category that distance education caused *social problems* during the COVID-19 pandemic process was about *the teacher and the student subcategories*. It was inclusive of the views of "teachers weakening their communication with their students" and "failure of students to socialize/isolate." The notion that students lack opportunities for social interaction was a particularly emphasized viewpoint among teachers, as it was reiterated by teachers from seven out of the nine participating countries. Examples illustrating this perspective are provided below:

"The communication levels between teachers and students are low." **(36TR)**
"There was very little social contact and this made students feel lonely." **(17NO)**
"Lack of interpersonal relationships is a really big problem." **(23IT)**

The *technology-related problems* category was related to *teacher, student, and material* subcategories. It included the views of "technological equipment access problem", " teachers not being enough about technology", "problems with internet access" and "not being able to get help from family on how to use technological tools". While concerns regarding internet access were predominantly voiced by participating teachers from Turkey, Italy, and Greece, issues related to access to technological devices were highlighted by teachers from Romania, Greece, and Turkey. Examples illustrating these perspectives are provided below:

"Students couldn't get assistance from homes on how to use technology devices and programs." **(8GR)**
"Technological problems obscured the lessons ' rhythm'." **(7GR)**
"Most of the children only had a smartphone to get in touch with teachers. Even now, there are students who don't have access to the internet." **(33RO)**

Problems with success category pertained to the student and assessment sub-categories and included views such as "students' motivation problems", "students' concentration problems" and "course assessment not being done properly". Only teachers from Turkey emphasized the low student participation in lessons and the students' silence, whereas the notion that this phenomenon led to student failure was exclusively mentioned by teachers from Spain. Examples illustrating these perspectives are provided below:

"Although I tried to motivate students by using games and songs, they have problems being motivated." **(2TR)**
"Some of the students showed indifference towards the online lesson and did their own thing. **(10GR)**
"It's difficult to ensure proper test conditions." **(21SW)**

Psychological problems category was related to the *student* sub-category. This category included the view that "it drives students into depression". This view was only expressed by one teacher from Norway. An example of this view is given below:

> *"It was hard to perceive if there was something that bothers them. And some of the students were depressed."* **(18NO)**

Problems in the management of the process pertained to the *sub-categories of students* and *teachers* and included the views of "teachers not being able to control students remotely", "spending a lot of time in front of the screen", "students not being able to organize time". The observation that students cannot be supervised remotely was predominantly articulated by teachers from Turkey and Greece, whereas the concern about spending excessive time in front of screens was voiced solely by a teacher from Italy. Additionally, the notion that students struggle with time management was exclusively mentioned by teachers from Poland. Examples exemplifying these viewpoints are provided below:

> *"You cannot see your students face to face and you aren't sure whether they really listen or not."* **(4TR)**
> *"Students focus on the screen for long periods."* **(25IT)**
> *"I couldn't see my students, and some students don't know how to organize their time."* **(14PO)**
> *"In the beginning, students didn't take their studies seriously. They weren't working as efficiently as they could."* **(20SW)**

Discussion, Conclusion, and Recommendations

Limitations of the Study

In this study, some concrete results were obtained, although it is important to mention some limitations of the study:

- The results of the study may not be generalized broadly due to its small sample size, which is typical of qualitative designs.
- This study is limited to teachers participating in the Erasmus+ project.

Conclusion and Discussion

In drawing conclusions aligned with the primary sub-goal of our research, which investigates the teaching models and platforms employed during the COVID-19 pandemic, teachers provided insights into the teaching models and platforms utilized in distance education. Notably, teachers from seven out of nine European countries (Norway, Sweden, Italy, Turkey, Romania, Iceland, and Portugal) indicated the adoption of hybrid models. Examining the platforms used for distance education across European countries, it becomes evident that synchronous platforms—where teachers and students engage simultaneously—were favored. This preference suggests a desire among teachers for increased control over student activities, facilitating real-time monitoring of learning progress and immediate corrections when needed. Notable platforms utilized include "Zoom" (n = 6), Google Meet (n = 5), Google Classroom (n = 2), Microsoft Teams (n = 2), Skype (n = 1), Webex (n = 1), Messenger (n = 1), and Its Learning (n = 1).

Corroborating these findings, a study by Sidpra et al. (2020) focusing on web-based platforms providing synchronized distance education during the pandemic identified Zoom, Skype, and GoToMeeting as the three most utilized live platforms. The research also highlighted Microsoft Teams as a cost-effective option for small groups due to its enhanced capacity and additional features. However, concerns were raised regarding Zoom's failure to meet security standards concerning end-to-end encryption. Consequently, the selection of an appropriate platform for online learning necessitates careful consideration of factors such as cost, security measures, group capacity, and the ability to record lessons for review.

In alignment with the secondary sub-goal of our research, aiming to explore the web tools employed by teachers in distance education during the COVID-19 pandemic, participants underscored the wide array of web tools utilized in this context. Alongside the prevalent use of Google tools (n = 11), alternatives such as Kahoot (n = 5), Microsoft Office (n = 3), and Canva (n = 2) were also favored. Echoing these findings, Rachmatunnisa (2020) identified Google Classroom as the most downloaded online learning application during the pandemic. These preferred web tools primarily serve to enhance the visual richness, facilitate learning, and make the assessment process engaging. This sentiment is supported by prior studies emphasizing the pedagogical benefits of various digital tools (Wang & Tahir, 2020; Zhang & Yang, 2021; Setiawan & Soeharto, 2020; Yuen & Yaoyuneyong & Johnson, 2011; Usluel & Mazman, 2009; Conole, 2010). Additionally, insights from authoritative sources such as Google (2022), Microsoft (2022), Wikipedia (2022), Educational Technology (2022), and Protapars (2022) corroborate the prevalence and utility of these digital resources in educational settings.

Aligned with the third sub-objective of our research, participants were queried about any special methods and techniques utilized during distance education amid the COVID-19 pandemic. Notably, teachers from Iceland and Spain reported employing conventional methods. Conversely, teachers from other countries predominantly employed innovative approaches such as cooperative learning & group work (n = 4), online & educational games (n = 3), digital tools (n = 3), flipped classroom (n = 2), task-based learning (n = 2), and questioning methods (n = 2). Additional methods and techniques included project-based learning, synchronous & asynchronous online courses, check-in & exit strategies, discussions, brainstorming, therapeutic storytelling, dramatization, problematization, and role-play.

Upon analysis, it became evident that teachers adopted a collaborative and task-based approach, integrating online games and digital tools to foster active student participation in the distance education process. Findings from a study conducted by Tang et al. (2020) on distance education during the COVID-19 pandemic corroborate this approach. In this study, content was delivered to students via pre-prepared videos and worksheets, followed by face-to-face sessions where activities aimed at practice and higher-level cognitive skills were conducted using flipped sheets. This learning model proved highly effective in enhancing student learning outcomes, attention, and the evaluation of learning.

In accordance with the fourth sub-objective of our research, which investigated the teaching materials utilized by teachers in distance education during the COVID-19 pandemic, participating teachers employed a variety of teaching materials alongside the tools used during lessons (such as iPads, PCs, tablets, phones, and Bluetooth speakers). These materials encompassed PDF files, YouTube videos, digital books, ICT tools, slides, online documents, films, e-books, links, puppets, online websites, media player files, online games, virtual tours, music, videos, online maps, graphics, Google web tools, and PowerPoint presentations. Examination of literature on a European scale revealed similar findings (Kerres, 2020; Burke & Dempsey, 2020;

Motiejūnaitė & Crosier, 2020; Grek & Landri, 2021). However, utilizing such materials effectively for both hybrid and face-to-face lessons may necessitate ongoing teacher training sessions (e.g., annual sessions), as some teachers encounter difficulties with technological proficiency. Additionally, given the rapid advancements in educational technology tools, keeping pace with these developments can pose challenges for educators.

In alignment with the fifth and sixth sub-objectives of our research, which explored teachers' positive and negative opinions about distance education during the COVID-19 pandemic, the positive effects of distance education were categorized into five distinct categories: *flexibility, digitality and innovation, individuality, ease, and comfort.* According to the statements made by the participating teachers, the *flexibility of distance education* was related to the process, the need for *digitality and innovation* was related to the teacher, the student, the material, and the content, *individuality* was related to the student, *ease* was related to the teacher and the student, and *comfort* was about student and the process. In line with these positive effects, several studies in the literature have garnered teacher opinions. According to Kaden (2020), the hybrid model offers increased *flexibility*, particularly benefiting older students by allowing them to allocate time to their interests and hobbies. Consequently, it may be inferred that for high school students, adults, and learners at higher levels of education, certain lessons, primarily theoretical ones, could be exclusively conducted online within school systems, providing them with enhanced comfort and flexibility. Moreover, online activities and assignments may better accommodate the individual pace of each student, as highlighted by Iwai (2020), who noted that the pandemic has spurred greater technological awareness within education systems.

Numerous studies have indicated that the integration of technology and digitalization during the pandemic has bolstered the efficiency of both learning and teaching (Karakaya et al., 2021; Bakioglu & Çevik, 2020; Grek & Landri, 2021; Burke & Dempsey, 2020; Daniel, 2020; Doghonadze et al., 2020; Basilaia & Kvavadze, 2020).

Negative effects of distance education are collected in five categories: *social problems, technology-related problems, problems with success, psychological problems, and problems related to the management of the process.* According to the statements made by the participating teachers, the fact that distance education causes *social problems* pertained to teachers and students. Online ways to socialize, that involve both teachers and students, such as virtual museum and gallery tours, virtual chit-chat cafes, and online speaking clubs, could serve as valuable solutions to address these issues. Educational institutions should explore effective means of communication with students and teachers, such as offering online counselling programs facilitated by experts who can provide guidance and support. *Technology-related problems* related to teachers, students, and materials.

At this juncture, developing and implementing online teaching tools should not pose an insurmountable challenge for teachers. Moreover, they should be equipped to assist students encountering technological difficulties. How can this be achieved? Teachers must be afforded increased opportunities for technological skill development through participation in both national and international training programs, whether conducted face-to-face or online. *Success problems* were related to student and evaluation. In this case, online evaluation methods may be more process-oriented not product, and should be diversified in terms of alternative assessment methods such as online portfolios, online performance tasks, and online evaluative games. *Psychological problems* pertained to the student, so school counsellors played important roles in order to organize online "support" sessions with students. Lastly, *problems of managing the process* were related to the teacher and the student. Similar to these negative effects, various studies in the literature

obtained teacher opinions. Kaden (2020) highlights those disparities in digital access and internet connectivity, particularly prevalent in rural areas, have led to significant inequality issues. Similarly, Carillo and Flores (2020) found that students lacking access to technological devices and internet connectivity at home are experiencing setbacks compared to traditional face-to-face education.

Recommendations

Based on the findings of this research and extensive literature review, the following recommendations can be drawn:

- Distance learning is a concept that should always be on the agenda not only in crises such as pandemics, climate-related problems, and intense population growth but also in order to provide students with information, communication, and technology literacy within the scope of 21st-century skills and to prepare the ground for lifelong learning.
- It should not be forgotten that success in education systems is directly related to the familiarity of the teacher and the student with the system. Having pre-pandemic distance education experience has been a factor that facilitated the post-pandemic distance education process of practitioners (Marek, Chew & Wu, 2021). The fact that teachers from Norway and Sweden didn't state any technological problems is because they integrated distance education into their lessons before the COVID-19 pandemic, they are technologically equipped and they experience fewer internet access problems. In addition to the inclusion of distance education in pre-service and in-service processes, minimizing the technological problems experienced within the scope of distance education is one of the issues that decision-makers should invest in.
- Future research about minimalizing the negative aspects of distance education can be conducted, especially in the fields of psychology and sociology to enhance the learning process. In terms of curriculum development, more hybrid model education programming and applications for a special subject (such as math, history, language, etc.) can be studied in detail in terms of teaching methods, online tools, online activities, and evaluation methods. Thus, teachers may take advantage of this kind of search and apply it to their lessons.

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