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Virtual Classroom Management: An Analysis of Virtual Classroom Management Dynamics and Strategies of Teachers

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Abstract

Digital learning platforms and virtual classrooms are growing more widespread, so virtual classroom management is gaining more importance to ensure student engagement, involvement, and achievements in an online learning environment. The research examines virtual classroom management dynamics and explores the factors that render teachers' virtual classroom management practices, strategies, and expectations in this regard. The study is phenomenological research, and data was collected through open-ended questions with 22 lower secondary school teachers working in Istanbul. The findings were gathered under four themes: virtual classroom management process, professional development, opportunities and challenges of virtual classrooms, and solutions to virtual classroom management problems. These results highlight the significance of engagement and motivation toward virtual classrooms and propound teachers' digital competencies and classroom management skills as two fundamental factors in fostering students' engagement in virtual classrooms.

Keywords: virtual classroom, classroom management, online learning

Sanal Sınıf Yönetimi: Öğretmenlerin Sanal Sınıf Yönetimi Dinamikleri ve Stratejilerinin İncelenmesi

Öz

Her geçen gün dijital öğrenme platformları ve sanal sınıflar daha yaygın hale gelmekte ve bu doğrultuda öğrencilerin çevrimiçi öğrenme ortamlarına dahil olmaları, derse aktif katılımları ve başarılarını artırmaya yönelik sanal sınıf yönetimi becerileri ve stratejileri daha fazla önem kazanmaktadır. Bu araştırma, sanal sınıf yönetimi dinamiklerini incelemekte ve öğretmenlerin sanal sınıf yönetimi uygulamalarını, stratejilerini ve bu konudaki beklentilerini etkileyen faktörleri araştırmaktadır. Araştırma fenomenolojik desende olup, veriler İstanbul'da görev yapan 22 ortaokul öğretmeninden açık uçlu sorular aracılığıyla elde edilmiştir. Bulgular dört tema altında toplanmıştır: sanal sınıf yönetimi süreci, mesleki gelişim, sanal sınıfların sunduğu fırsatlar ve zorluklar ve sanal sınıf yönetimi sorunlarına karşı çözümler. Bu sonuçlar, sanal sınıflarda etkin katılımın ve motivasyonun önemini vurgulamakta ve öğretmenlerin dijital yeterliliklerini ve sınıf yönetimi becerilerini, öğrencilerin sanal sınıflara etkin katılımını teşvik eden iki temel faktör olarak öne sürmektedir.

Anahtar kelimeler: sanal sınıf, sınıf yönetimi, çevrimiçi öğrenme

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INTRODUCTION

The World Health Organization (WHO) announced Covid-19 as a global pandemic in March 2020 (WHO, 2020), and then schools in Turkey switched to distance education. In this process, schools mostly preferred the Zoom platform since the Education Information Network (EBA), the official distance education software of the Republic of Turkish Ministry of National Education (MoNE), was insufficient for synchronous education. In time, MoNE made improvements and investments for EBA, and it even ranked first on the global scale according to its users and internet traffic in the first term of the 2020-2021 school year (MoNE, 2023a). According to the MoNE coronavirus measures, during the 2020-2021 school year, only the students from villages and sparsely populated settlements could attend five days of full-time education. Other schools were partially open, and students at all primary schools, pre-schools, and the final year of secondary and tertiary schools went to school twice a week. Parents who did not want to send their children to school for face-to-face education had the right to give written consent, and these students could continue their education through distance learning (MoNE, 2023b).

Technology, remote learning, online learning, and distance learning are not new in the world of education, and their use has increased rapidly in the 21st century. The Covid-19 process, and the emergency remote teaching have accelerated the digital transformation of education and the use of online classrooms. Higher education institutions and K-12 schools have all tried to adapt their systems. During the new normal, they quickly embraced online classroom platforms (e.g., Google Classroom, Teams, Moodle, EdMono, Blackboard) and video conferencing tools (e.g., Zoom, Google Meet, Skype). Currently, online education has emerged as a reality for everyone. Now, there are several efforts, investments, and initiatives for an ongoing digital transformation in education (Li & Lalani, 2020; Nousopoulou et al., 2023; Soykan et al., 2023) and the active use of online learning, blended learning, and virtual classes (Dos Santos, 2022; Future Learn, 2022). According to literature (Albashtawi & Al Bataineh, 2020; Can, 2020; Clark & Kwinn, 2007; Kaya, 2011; Mashhadia & Kargozarib, 2011), virtual classrooms offer various benefits for learners and teachers. The dimensions of virtual classroom management bear similarities to those of traditional classroom management, yet they differ following the diversity inherent in the digital teaching environment (Can, 2020; Brophy, 1998; Egeberg et al., 2021). Managing a virtual classroom requires a unique approach to classroom management. For this reason, it is highly considerable to recognize the online classroom environment, make sense of its processes, and specify virtual classroom management dynamics and strategies.

After the outbreak of Covid-19, we could say that there has been an increase in the number of studies on managing virtual classes (e.g., Arslan & Sumuer, 2020; Can, 2020; Cortes et al., 2022; Keshavarz et al., 2022; Karakaya et al., 2020; Sari & Nayir, 2020). In the Turkish context, there have been several studies on virtual classroom management, too. Can (2020) researched principles and practices related to virtual classroom management. Arslan and colleagues (2021) provided suggestions on how to address classroom management challenges. Similarly, Can (2020) and Ceylan (2020) focused on teacher competencies in this field. Atabay and colleagues (2023) explored the virtual classroom management processes. Virtual and traditional classrooms have distinct characteristics, resulting in different management approaches (Can, 2020). The literature suggests that the virtual classroom management process and dimensions are not yet fully established (Atabey et al., 2023), as it is a relatively new area compared to traditional classrooms. Therefore, there is a need to develop a better understanding of virtual classroom management processes. With this study, we aimed to reach the teachers who taught in the virtual classroom and experienced classroom management and to make sense of the virtual classroom management phenomenon from their perspective. It is crucial to reveal what teachers do in practice, what they care about, what their strategies are, what they find problematic, how they come up with solutions to these problems, and what their expectations for the future are. For this reason, the following research questions guided our study:

RQ1: What are the views of teachers regarding virtual classroom management?

RQ2: What are the expectations of teachers regarding virtual classroom management?

Virtual classroom

Virtual classroom extends the classroom from its four walls and allows students to attend classes wherever they want. It provides flexibility of time and place (Smedley, 2010). In online classrooms, students and teachers do not need to be at the same location. They could meet from different places at the same time (synchronous) or at different times (asynchronous) under the supervision of the teacher and use different communication tools (Can, 2020; Clark & Kwinn, 2007; Kaya, 2011; Mashhadia & Kargozarib, 2011). Virtual classrooms could offer students self-directed learning environment at their own pace and plenty of interactivity as students who are spatially and

temporally apart (Mashhadia & Kargozarib, 2011). These features could increase students' satisfaction and lower their stress (Arkorful & Abaidoo, 2015). Besides, virtual classrooms could decrease the cost of education. They provide up-to-date education materials, eliminate transportation difficulty, and provide access to education in disadvantaged areas (Arkorful & Abaidoo, 2015; Can, 2020). In online classrooms, the feedback students get from their teachers is satisfying (Benda et al., 2007). It eliminates communication barriers; motivates students to interact with the teacher and the other students (Arkorful & Abaidoo, 2015; Karakaya et al., 2020); because teachers could manage the classroom with a much more student-centered philosophy than a traditional learning environment. In addition, by using virtual classrooms, teachers could use various methods of learning, some of which might be difficult to practice in face-to-face classrooms (Albashtawi & Al Bataineh, 2020).

Apart from these opportunities virtual classrooms have some challenges (Adnan & Anwar, 2020; Arkorful & Abaidoo, 2015; Can, 2020; Muilenburg & Berge, 2005; Yilmazsoy et al., 2018). They are the technical problems in internet connection or connection speed (Akkus & Acar, 2017; Can, 2020), course content and teaching materials inadequacy, students' attention problems, interaction decrease with other students (Finnegan et al., 2008; Rufai et al., 2015), security, privacy and copyright problems (Chen & He, 2013; Hsu et al., 1999), lack of infrastructure and equipment, and internet access problems in disadvantaged regions (Adnan & Anwar, 2020; Muilenburg & Berge, 2005). There could also be undesirable behaviors (writing messages, sharing images, chatting, visiting different websites) of learners in virtual environments (Ko & Rossen, 2017; Can, 2020).

There are some key features to help to realize teaching in virtual classrooms. These features are significant; because they are the facilitators to deliver a virtual classroom that is as effective and lively as face-to-face classroom instruction (Christopher & Hyder, 2014; Rufai et al, 2015). Students focus on the screen, and the teacher shares the course content during the content sharing and screen sharing feature. The audio feature enables teachers and students to speak and listen to each other. The chat feature allows teachers and students to communicate with text messages in real-time. This feature could be functional in keeping the interaction lively and engaging. The drawing and pointing tools are active with the content sharing feature. Teachers and students could use this illustration feature to mark something and draw attention to it when a slide or whiteboard is displayed. The polling feature is about asking a polling question; and collecting information on students' ideas, knowledge level, or readiness for the course. The replies to polling questions are anonymous, which is good to protect privacy. There is also an instant feedback feature such as raising a hand or an emotion indicator. This feature enables students to communicate with the teacher without interrupting the flow of the instruction. The breakout room feature allows teachers to divide students into groups. And students could work collaboratively in their small groups while teachers could move from one breakout room to another to check the assigned work of group members. The video feature is about the image broadcast of teachers and students. Teachers could prefer to display her image, and she could also ask students to use their webcam at times. File sharing is also available during the course. Students could easily download the files that the teacher shares.

Virtual classroom management

Classroom is a special environment where learning and teaching take place, and where students and teachers spend most of their time in school. Many studies have found that classroom management is one of the most important elements that influence learning (Djigic & Stojiljkovic, 2011; Marzano et al., 2003; Wang et al., 1993). There are many definitions of classroom management, and they generally emphasize the positive and appropriate learning environment (Brophy, 2010; Doyle, 1986; Randall, 1992), effective coordination of all classroom and instructional elements like an orchestra management (Basar, 2001; Celep, 2008; Uysal et al., 2014); and control of student behavior, maintenance of learning order and environment (Doyle, 1986; Celik, 2002). All these definitions clearly show us that a teacher's skill to successfully manage a classroom covers many components such as lesson plan, teaching method, time, educational activity, materials, place, positive learning climate, relationship, discipline, and order. Classroom management tries to ensure and sustain an orderly environment for students' academic learning and intends to cultivate students' social and moral growth (Evertson & Weinstein, 2006).

There are a few approaches to classroom management as the term encompasses various aspects of a classroom environment. Traditionally classroom management was seen from the degree of control point of view, and teachers led students basically with rewards or punishments (Burden, 1995; Wolfgang & Glickman, 1986). Later the views have evolved towards more humanistic and democratic thought. According to Wolfgang (1995)'s classroom management framework, there is a control continuum from teacher-centered, to shared and to student-centered perspective. There are basically four orientations to class discipline as traditional, liberal progressive, socially critical, and laissez-faire (Egeberg et al., 2021). The traditional way of classroom management is

interventionist. Liberal progressive teachers are much more democratic, interactionalist and they share power with their students. Teachers with socially critical orientation regard disruptive classroom behavior as a stand against injustice. Teachers with laissez-faire orientation have non-interventionist way of thinking and behavior (Egeberg et al., 2021; Wolfgang & Glickman, 1986). Contemporary thinking of teaching and therefore classroom management emphasize students' active participation, self-regulation, social interaction, and higher order thinking skills (Brophy, 1998; Egeberg et al., 2021). And teachers play the role of facilitators.

Although it is possible to find several approaches to virtual classroom management, there is still a shortage of well-defined ones. Virtual classroom management is about all efforts to provide and maintain a suitable learning environment for the effectiveness of learning in the virtual environment (Can, 2020). A virtual classroom undoubtedly requires management skills from different perspectives than a traditional classroom. It has its own learning theories and e-learning pedagogy models though traditional learning theories and classroom management models form their basis. The Community of Inquiry Online Learning Model by Garrison, Anderson & Archer (2000) highlights the three presences, namely social, cognitive, and teaching, and shows up in relationships and interactions among students and teachers. In the Connectivism Theory by Siemens (2004), learning happens through forging connections and building out networks to connect larger ones. Online Collaborative Learning (OCL) theory by Harasim (2012) is about the learning setting opportunities of the internet that stimulate cooperation, collaboration, and knowledge development. The three main e-learning models are Mayer's Cognitive Theory of Multimedia Learning, Laurillard's Conversational Framework, and Salmon's Five Stage Model. Cognitive Theory of Multimedia Learning puts forth a model based on cognitive theories, which are dual-channel, limited capacity, and active processing assumption (Mayer, 2014). Laurillard's Conversational Framework introduces six key learning types- acquisition, investigation, discussion, practice, collaboration, and production- to design online learning (Laurillard, 2002). Salmon's Five Stage Model of teaching and learning online (Salmon, 2013) encompasses stages of access and motivation, socialization, information exchange, knowledge construction, and review to help teachers develop an online active learning environment. Virtual classroom management dimensions are like traditional classroom management dimensions, but still, they vary considering the diversity of the digital teaching environment. These dimensions could be grouped as teaching and learning environment, management of teaching and learning, behavior management, interaction, motivation, technology management, management of students with special needs, and time management (Can, 2020). Undoubtedly, teachers should consider each of these dimensions when designing and managing an online course.

METHOD

Phenomenology is a practical methodological design in qualitative research to comprehend the phenomena based on how the participants experience them. The current research aims to understand and interpret the participants' experiences of virtual classroom management. We utilized van Mannen (1997)'s phenomenological point of view, which is the study of lived experience, to provide an engaging and vivid description of participants' behaviors, and actions. According to van Manen (1997; 2014) and other eminent researchers in this field, there is no defined procedure for doing phenomenological studies. Phenomenology seeks to comprehend the nature and significance of our daily experiences. It asks, "What does this or that experience feel like?" (van Manen, 1997). Phenomenological inquiry starts with pre-data collection strategies and progresses up to data analysis (Moustakas, 2014).

Research Participants

We utilized criterion-based purposeful sampling and snowball sampling strategies (Merriam, 2009; Patton, 2002) to get rich and meaningful data. All participants were public lower secondary school teachers in Istanbul and taught online for at least one semester long. The demographic information of participants is listed in Table 1:

Table 1. Participants' Demographics

Participants	Gender	Age	Years of service	Graduation	Teaching field	IT skills
P1	F	34	10	Undergraduate	Science	Good
P2	M	45	21	Undergraduate	Social Sciences	Medium
P3	F	36	9	Master	Science	Good
P4	M	28	7	Undergraduate	Turkish	Medium
P5	F	47	25	Undergraduate	Technology and Design	Medium
P6	F	30	8	Undergraduate	Social Sciences	Good
P7	M	33	10	Undergraduate	English	Good
P8	M	33	8	Undergraduate	Mathematics	Medium

P9	F	42	20	Undergraduate	Social Sciences	Medium
P10	F	32	7	Undergraduate	English	Medium
P11	F	30	7	Undergraduate	Mathematics	Medium
P12	F	53	30	Undergraduate	Turkish	Medium
P13	M	38	11	Undergraduate	English	Good
P14	F	28	7	Undergraduate	English	Good
P15	F	38	9	Undergraduate	Religion	Medium
P16	F	29	7	Undergraduate	Turkish	Medium
P17	M	53	26	Undergraduate	Mathematics	Medium
P18	F	48	26	Undergraduate	Science	Good
P19	M	51	24	Undergraduate	Social Sciences	Medium
P20	F	45	22	Undergraduate	English	Medium
P21	F	35	12	Undergraduate	Science	Good
P22	F	38	16	Master	IT	Good

As depicted in Table 1, 15 participants were female, and seven were male. Three of the participants were younger than 30, 11 were in the age range of 31-40, five were in the age range of 41-50, and three were between the ages of 51-60. Only two participants received a master's education while the others were undergraduates. As for the teaching fields, there were four Science, four Social Sciences, three Turkish, one Technology design, five English, three Mathematics, and one IT teacher. Nine teachers stated that their IT skills were good, and 13 of the teachers said their IT competency was medium level.

Data Collection

We gathered data in the 2022-2023 education year with 22 teachers, which was our data saturation level. The data collection tool was open-ended questions in a written format (Bengtsson, 2016). The form included six primary and 13 probing open-ended questions, a few examples of which are “What do you think about virtual classroom management?” “What was your virtual classroom climate like? Could you please explain?” “How do you manage time while teaching in the virtual classroom?” During the preparation of questions, existing literature was reviewed. Opinions were obtained from two experts in the field to enhance the validity and reliability of questions. A final version of the questions was then determined.

All components of the research process, from the research questions to the data analysis and interpretation, were attempted to be transparently documented to assure the credibility and transferability of the study. Research participants were chosen through purposeful sampling to provide a comprehensive and diverse variety of experiences and opinions relevant to virtual classroom management. Researchers assessed the intercoder reliability and carefully outlined the coding frame while analyzing the data. Direct quotes from participants were also included in the study report to fulfill the confirmability criterion and show that the conclusions were based on the perspectives and experiences of the participants.

Researchers’ Role

In qualitative research, it is quite hard to ensure the impartiality of the researcher, and it is necessary not to interfere with the natural environment of the researched subject, event, and phenomenon (Yildirim & Simsek, 2006). In this study, the researchers tried to be impartial and careful not to influence the participants. Being sensitive to the natural environment, we tried to be open, flexible, and unbiased with the participants, the data collection, the analysis, and the presentation of the findings. In addition, researchers need to be conscious of how their personal prejudices, life experiences, and viewpoints may affect the way they conduct their study and the conclusions they draw. For this reason, we tried to be self-reflective and employed constant comparison (Glaser, 1965) to make sure that our findings and interpretations are based on the data rather than influenced by prejudices.

Research Ethics

In this study, all the rules specified within the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics" have been taken.

The research study was ethically approved by the Research Ethics Board of XXXX University, numbered XXX, and dated XXX. The researchers informed the participants of the purpose of the research and the data collection process and obtained their informed consent. The participants all knew that they had a withdrawal option whenever they wanted. The privacy and anonymity of participants were upheld through labeling instead of using their real names. All the data are kept in password-protected electronic files and will be disposed of once they are not needed.

Data Analysis

Analysis was carried out by rigorously implementing inductive content analysis. The process of concluding data using new understanding to develop theories is called inductive content analysis. Researchers examine the material with an open mind, searching for relevant topics to address the research questions (Bengtsson, 2016; Krippendorff, 2004). Thus, the transcribed data was read back and forth and interpreted holistically. The researchers performed the analysis and the inductive coding process with MaxQDA qualitative analysis software package. The researchers individually coded the data, then compared and discussed the inconsistencies. The coding frame is crucial to improve transparency and systematicity of the coding process (Bryman & Bell, 2015; O'Connor & Joffe, 2020). The researchers assessed the intercoder reliability during the development of coding frame and reached 90% fit value which is satisfactory according to Miles and Huberman (1994). The coding frame was revised until compromised on the common final version of sub-codes, codes, and themes (see Table 2, 3, 4, 5).

FINDINGS

To address the research questions, data was analyzed, and findings were arranged as sub-codes, codes, and themes. Through reading and re-reading the data and clustering the codes and sub-codes, four main themes represented the virtual classroom management phenomenon. Figure 1 shows the themes.

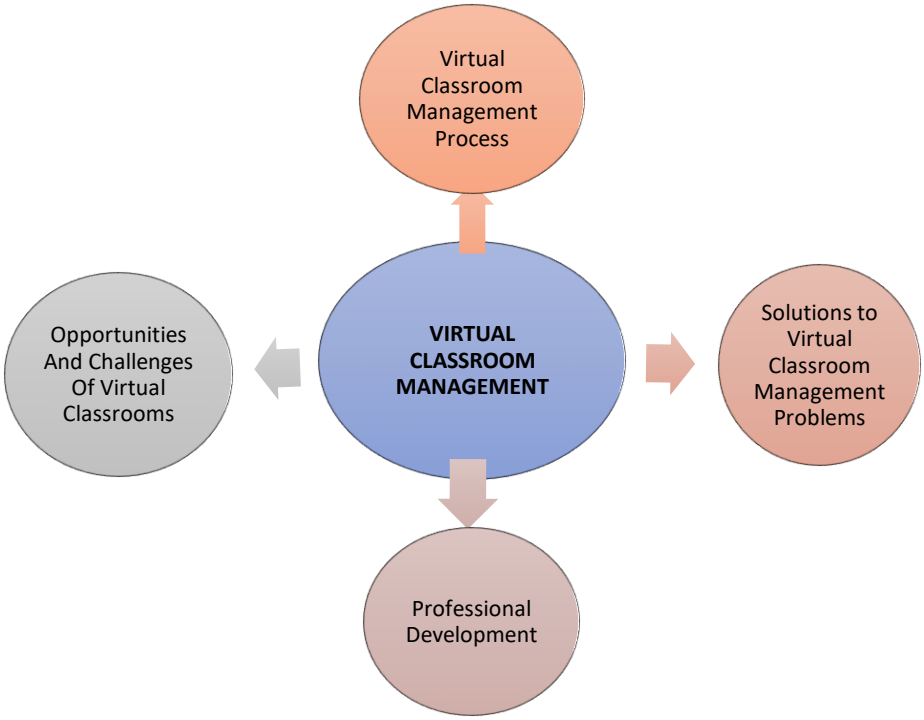

Figure 1. *The themes of virtual classroom management*

As seen in Figure 1, virtual classroom management dynamics and strategies were grouped under themes of (1) Virtual Classroom Management Process, (2) Professional Development, (3) Opportunities, and Challenges of Virtual Classrooms, and (4) Solutions to Virtual Classroom Management Problems.

The following table (Table 2) presents an overview of the Theme 1, codes, sub-codes, number of units of analysis, and frequencies.

Table 2. Coding Frame with the Units of Analysis and Frequency Regarding Theme 1: Virtual Classroom Management Process

	No. of units of analysis (coded segments)	n	%
Theme 1: Virtual Classroom Management Process	549	22	100%
Related codes and sub-codes:			
Teaching Methods	178	22	100%
Virtual Classroom Context	217	22	100%

Motivation	106	22	100%
Discipline	68	22	100%
Time management	43	21	100%
Feelings to Virtual Classrooms	59	20	90.9%
Assessment Methods	69	22	100%
Asynchronous Learning	26	18	81.8%

The Virtual Classroom Management Process theme reveals the experiences and opinions of participating teachers in the virtual classroom management process in terms of method, context, and emotional states. As Table 2 shows, Theme 1: Virtual Classroom Management Process is the theme that the participating teachers emphasized the most and expressed the most opinions among all the other themes (no of units of analysis [NoUoA]=549). As can be seen from the frequency information in Table 2, all the participating teachers (n=22) expressed their views about Theme 1: Virtual Classroom Management Process, Codes of Teaching Methods, Virtual Classroom Context, and Assessment Methods. The subject teachers focus on most is Virtual Classroom Context (NoUoA=217), and the most mentioned sub-code is Motivation (NoUoA=106). Meanwhile, the least uttered code is Asynchronous Learning. Direct quotations of some participants regarding Theme 1 are as follows:

P10: "*I was always with the same students; they were always attending. While some of them were students who were willing and participated in the flow of the lesson, some were those attending just because of necessity. It was annoying that unwilling students had no idea about what we were doing. When I called out their names and got no answer, I got demoralized. It was a tense and quiet environment, and other students were also affected*." (Theme 1: Virtual Classroom Management Process, Code: Feelings to Virtual Classroom)

P4: "*I got into contact with the family and other teachers for the evaluation. We evaluated together the assessment statistics of the students over the education information network (EBA) of the Ministry of National Education. We enabled them to deliver some assignments to us as hard copies. I also applied the verbal assessment method*." (Theme 1: Virtual Classroom Management Process, Code: Assessment Method)

P21: *I applied the principle of active learning, learning by doing. For example, 5th graders designed their parachutes on air resistance. They recorded slow-motion videos by throwing them out of the window, and they shared them in the lesson, and by scoring them, we carried out an entertaining activity in which we included the parents. The online course was usually like hours of sharing them. There were many activities outside the classroom.* (Theme 1: Virtual Classroom Management Process, Code: Asynchronous Learning)

P8: *It was a question-and-answer session with the students. I used discussion, question-answer, and such activities at first. I could not use any technique later because I taught the lesson with just 2-3 students. I tried to communicate by asking questions, but nearly nobody replied. Usually, they were just in the class, but their microphones were not working.* (Theme 1: Virtual Classroom Management Process, Code: Teaching Methods)

The following Table 3 presents an overview of the Theme 2, codes, sub-codes, number of units of analysis, and frequencies.

Table 3. Coding Frame with the Units of Analysis and Frequency Regarding Theme 2: Professional Development

	No. of units of analysis (coded segments)	n	%
Theme 2: Professional Development	55	22	95.4%
Related codes and sub-codes:			
2.1. Feeling Competent in Managing the Virtual Classrooms	15	7	31.8%
2.1.1. Trial and error	2	1	4.5%
2.1.2. Easy	2	2	9%
2.1.3. Medium difficulty	11	3	13%
2.2. Lack of Professional Knowledge	19	12	54.5%
2.3. Professional Development Needs	21	15	68.1%

The theme of Professional Development reveals the professional development experiences of participating teachers in terms of virtual classroom management and their expectations in this regard. As seen in Table 3, all the participating teachers (n=22) expressed their opinions about Theme 2: Professional Development. However, there was no code that all of them commented on (see Table 3). Professional development needs code was the most frequently discussed (NoUoA=21) issue by the highest number of participants (n=15). The least mentioned code is Feeling Competent in Managing the Virtual Classrooms (NoUoA=15), and the least mentioned sub-codes are Trial and error and Easy (NoUoA=2). Direct quotations of some participants regarding Theme 2 are as follows:

P2 "*I never used online classroom applications before. I had some theoretical knowledge. My experience increased over time. It was a bit of trial and error. I tried to help my students as much as I could. I hope I did.*" (Theme 2: Professional Knowledge, Code: Feeling Competent in Managing the Virtual Classrooms, Sub-code: Trial and error)

P7: "*I did not receive any training on it. I directed the flow of the lesson according to trial and error and feedback from the children. After a while, I started to teach efficient lessons. When I thought my endeavor was inadequate and a waste of time, I realized that students could learn, and virtual lessons could be a way to teach. I can consider myself successful.*" P7 (Theme 2: Professional Knowledge, Code: Feeling Competent in Managing the Virtual Classrooms / Lack of Professional Knowledge, Sub-code: Trial and error)

P8: "*I am a Mathematics teacher. I had a hard time without the slightest in-service training and material support. I did not have any training in online classrooms during my university years. I got to learn during the pandemic period*." (Theme 2: Professional Knowledge, Code: Feeling Competent in Managing the Virtual Classrooms / Lack of Professional Knowledge)

P20 "*I did not take any training. I did not have any experience. I cannot say that I am very knowledgeable. When I compare myself with my knowledge before the pandemic, I can easily say that I have improved a lot and gained experience*." (Theme 2: Professional Knowledge, Code: Feeling Competent in Managing the Virtual Classrooms / Professional Development Needs)

Table 4 depicts an overview of the Theme 3, codes, sub-codes, number of units of analysis, and frequencies.

Table 4. Coding Frame with the Units of Analysis and Frequency Regarding Theme 3: Advantages and Disadvantages of Virtual Classrooms

	No. of units of analysis (coded segments)	n	%
Theme 3: Opportunities and Challenges of Virtual Classrooms	311	22	100%
Related codes and sub-codes:			
3.1. Pros and Cons	18	14	63.6%
3.2. Disadvantages and Challenges	233	22	100%
3.2.1. Social integration challenges	26	12	54.5%
3.2.2. Self-regulation challenges	62	18	81.8%
3.2.3. Infrastructural challenges	28	16	72.7%
3.2.4. Challenges regarding the parents	41	17	77.2%
3.2.5. Challenges of teachers	70	21	90.9%
3.2.6. Other challenges	6	5	45.4%
3.3. Opportunities	60	20	90.9%
3.3.1. Comfortable	28	15	68.1%
3.3.2. Flexibility of time and place	15	11	50%
3.3.3. Effective lesson	17	8	36.3%

The Opportunities and Challenges theme includes participating teachers' positive and negative ideas and experiences about virtual classroom management. As Table 4 shows, all teachers gave their opinions about the third theme of the study, the Opportunities and Challenges of Virtual Classrooms. Table 4 details the issue that all the teachers (n=22) focused on the most (NoUoA=233) related to the disadvantages and challenges. The most frequently repeated issue was the Challenges of Teachers (NoUoA=70). On the other hand, the code with the least number of views (NoUoA= 18) was Pros and Cons. Teachers reported the opportunities of virtual classrooms as the lessons were comfortable (NoUoA=28), flexible in terms of time and place (NoUoA=15), and effective (NoUoA=17). Direct quotations of some participants regarding Theme 3 are as follows:

P16 "*We couldn't get immediate feedback from students. Sometimes I was like talking to myself, and I wondered if they were listening. From time to time, I witnessed that the students were in different environments, not a suitable environment for learning. There were times when external voices came through. For example, during a lesson, a student asked a question. When he turned on his microphone to answer, other family members' voices in the same environment were louder than the child's. Most probably, the number of rooms was not enough. Maybe the heating system was only for one room. These kinds of things make it hard to manage the lesson.*" (Theme 3: Opportunities and Challenges of Virtual Classrooms, Code: Disadvantages and Challenges, Sub-code: Problems regarding the parents / Infrastructural problems / Other problems)

P15: The *constant stay of the student or teacher in the virtual environment can cause a lack of interpersonal communication and psychological problems such as anxiety. At first, I found it strange to enter the classroom. I had difficulties in this regard. In the classical class, we build face-to-face communication with the student who has lost focus on the lesson or did not understand. The teacher can understand it by watching the student. But the camera was turned off. I could not understand them because there was no chance to observe the students*. (Theme 3: Opportunities and Challenges of Virtual Classrooms, Code: Disadvantages and Challenges, Sub-code: Social integration challenges)

P4: *I think virtual classrooms are vital today and will be in the future. I believe that this opportunity should be possible at every level of education. The development of technology and the opportunity to access information from anywhere are necessities of the age. The advantages are everyone participates in the classroom regardless of the place; no one feels any difference physically; they are comfortable; physically away from classmates, which is a way to prevent them from being badly influenced and physically distracted... Also, climate conditions and natural events cannot affect education*. (Theme 3: Opportunities and Challenges of Virtual Classrooms, Code: Opportunities, Sub-code: Comfortable / Flexibility of time and place)

Table 5 below shows an overview of the Theme 4, codes, sub-codes, number of units of analysis, and frequencies.

Table 5. Coding Frame with the Units of Analysis and Frequency Regarding Theme 4: Solutions to Virtual Classroom Management Problems

	No. of units of analysis (coded segments)	n	%
Theme 4: Solutions to Virtual Classroom Management Problems	187	22	100%
Related codes and sub-codes:			
4.1. Solutions Regarding Teachers	75	21	90.9%
4.1.1. Being competent in digital pedagogies	33	17	77.2%
4.1.2. Willingness to learn and professionally develop	24	13	59%
4.1.3. Collaboration	10	9	40.9%
4.2. Structural Solutions	69	19	86.3%
4.2.1. Course design	18	11	50%
4.2.2. Infrastructural solutions	14	10	45.4%
4.2.3. Trainings for students and parents	29	10	45.4%
4.3. Lack of solutions	14	8	36.3%

Another topic participant teachers mentioned about virtual classroom management was Solutions to Virtual Classroom Management Problems. This theme (Theme 4) sheds light on the expectations of participating teachers concerning solutions. As shown in Table 5, Theme 4 includes codes for Solutions Regarding Teachers, Structural Solutions, and Lack of Solutions. Among the participating teachers (n=21), the Solutions Regarding Teachers code was the most frequently discussed (NoUoA=75). The most suggested solution under this code was the importance of Being competent in digital pedagogies (NoUoA=33). Collaboration was the least discussed solution proposal regarding teachers (NoUoA=10). Some direct quotes from the participants regarding Theme 4 are as follows:

P1: *When planning virtual lessons, teachers should prepare lesson plans that are enriched with different methods and techniques, considering the individual needs of each student and that they can attract their attention. Teachers need to have a technological pedagogical knowledge background. They should be able to prepare a lesson plan enriched with techniques suitable for the students. Of course, this is possible if every student has technological opportunities. Some students could not participate in the distance education process. And they were unfortunately left out of education.* (Theme 4: Solutions to Virtual Classroom Management Problems, Code: Solutions Regarding Teachers, Sub-code: Being Competent in Virtual Pedagogies / Willingness to learn and professionally develop)

P4: *We tried to solve the problems by communicating with the parents and other teachers. We evaluated the academic result statistics of each student on EBA together with parents. We enabled students to connect with us physically, face-to-face, too. To find solutions to problems, we could meet with colleagues with experience and those who attended any prior training about online classrooms*. (Theme 4: Solutions to Virtual Classroom Management Problems, Code: Solutions Regarding Teachers, Sub-code: Collaboration / Willingness to learn and professionally develop)

P7: *At first, both the students and I had difficulties. But once I got used to it, the students were willing to learn. I realized that this was not so much different from face-to-face education. The students had the right to*

speak by raising their hands and asking. I tried to keep the students active by engaging them in physical activities because students had already been bored with the pandemic and were locked in their homes. I was striving for effective learning by listening to English songs and animating the lyrics. Online classrooms could be very comfortable environments for students who want it. It is necessary to keep their interest alive as much as possible. By adding games to learning, watching videos, and preparing worksheets that will attract their attention, I aimed to keep children interested in the lesson and learning while having fun. Over time, we all got used to the situation; and overcame most of the difficulties. I think, first, the teacher should be a good computer and internet user. Since children's attention can easily be distracted, teachers should adopt exercises and lectures online and attract children's attention. (Theme 4: Solutions to Virtual Classroom Management Problems, Code: Structural Solutions, Sub-code: Course design)

P18: *Online education can never replace face-to-face learning. Online classrooms could only be considered for special situations. I do not find it appropriate under normal conditions. We teachers should use online classroom applications in mandatory cases. Apart from these situations, it is a very useless and unsuccessful way of education.* (Theme 4: Solutions to Virtual Classroom Management Problems, Code: Lack of solutions)

DISCUSSION & CONCLUSION

Education has witnessed enormous changes in recent years in the name of digitalization. The Covid-19 pandemic has necessitated this process and acted as a catalyst in the transition to the application phase. At the point we have reached today, it is inevitable for education to adapt to the digital age and to provide maximum benefit from the digital world and developments. For example, without boundaries learning anywhere and anytime, personalized approaches to learning, digital game-based learning, blended learning, virtual mentors, and augmented reality approaches are some of the current alternatives offered by the digital world to education. According to the study results, virtual classroom management dynamics and strategies are shaped around four factors. These factors are the Virtual Classroom Management Process, Professional Development, Opportunities and Challenges of Virtual Classrooms, and Solutions to Virtual Classroom Management Problems.

As the findings reveal, the first theme, the Virtual Classroom Management Process, is the one the participating teachers uttered the most. It encompasses codes of teaching methods, virtual classroom context (with the sub-codes of motivation, discipline, and time management), feelings for virtual classrooms, assessment methods, and asynchronous learning opportunities. The code of virtual classroom context was the most mentioned one for all participants, whereas the least uttered code was asynchronous learning. The motivation of students and teachers has come to the fore in the virtual classroom management process. Students' engagement and motivation, situated in the affective domain of classroom management, are fundamental, even the precondition of learning (van Lier, 1996; Wright, 2005), as they directly affect general classroom dynamics, students' learning results, and conduct (Franklin & Harrington, 2019; Kilic et al., 2021; Schiefele, 2017). Teachers' motivation and views of teaching and learning are crucial factors influencing the classroom environment (Radel et al., 2010; Han & Yin, 2016). High levels of teacher motivation and goal orientation increase student motivation (Engin, 2020; Han & Yin, 2016), teaching effectiveness, and improved teaching practice (Thooneen et al., 2011).

The Professional Development theme includes codes of feeling competent in managing virtual classrooms, lack of professional knowledge, and professional development needs. As understood from the interview data, professional development needs were the most frequently discussed issue. Teachers highly need professional development in virtual classroom management. With the Education 4.0 digital transformation process, innovation, creativity, and the design of education processes have gained importance like never before (Harkins, 2008). In this process, it is necessary to rethink learning and teaching processes and reinterpret the roles of teachers accordingly. Teachers' professional development in virtual classroom management is essential to equip teachers with sufficient knowledge and skills to manage online learning environments. There are a few frameworks for the virtual competencies of teachers, such as the SAMR framework of Puentedura (2012), the critical digital framework of Hinrichsen and Coombs (2014), the UNESCO (2018) ICT competencies framework, and the TPACK framework of Mishra and Koehler (2006). Among these frameworks, TPACK draws attention because it draws a comprehensive framework that focuses on technological, pedagogical, and content knowledge (Fayda-Kinik, 2022). In line with all these frameworks, the study results mention the importance and development of teachers' digital competencies and virtual classroom management skills.

All participating teachers talked about the Opportunities and Challenges of Virtual Classrooms, particularly emphasizing the disadvantages and challenges. These challenges were grouped as social integration, self-regulation, infrastructural, and challenges regarding the parents and teachers' challenges. Challenges of virtual

classrooms have also been given a lot of attention in literature. For example, teachers with low online classroom design skills had some challenges with virtual classroom management. They faced hardware and software problems and physical environment problems (Akkus & Acar, 2017; Arslan & Sumuer, 2020; Karakaya et al., 2020). Other virtual classroom management challenges could be listed as problems during the planning, presentation, and evaluation phases (Arslan & Sumuer, 2020; Mohan et al., 2020), communication problems, and students' silence (Neuwirth et al., 2020), some discipline problems such as inappropriate use of chat and camera function, and some distractions (Arslan & Sumuer, 2020; Neuwirth et al., 2020) during online lessons. Many studies shed light on self-regulation as a fundamental skill in online learning (Barak et al., 2016; Cho & Shen, 2013). Consistent with our findings, Carter and colleagues (2020) emphasized that improving students' self-regulation skills would contribute to the effectiveness of online learning. The participants also pointed out the social integration challenges. For many students, the level of isolation that online classrooms may foster among students could cause a poor online learning environment (McInnerney & Roberts, 2004), motivation drop, and disengagement. Salas-Pilco et al. (2022) explored student engagement in online learning and indicated its value in providing educational activities that encourage participation and real-world learning opportunities. Teachers also reported the opportunities of virtual classrooms as comfortable, flexible, and effective. Mashhadi and Kargozari (2011) similarly indicated that virtual classrooms are beneficial because they allow students to learn outside of the classroom's walls in the community and involve them in real-world tasks.

Solutions to Virtual Classroom Management Problems was another subject that participating teachers brought up concerning virtual classroom management. This theme consists of codes of solutions regarding teachers, structural solutions, and lack of solutions. Teachers emphasized being competent in digital pedagogies and the need for professional development training. Similarly, quite a few studies in the literature (Fayda-Kinik, 2022; McGarr & McDonagh, 2021; Reisoglu & Cebi, 2020) investigated teachers' professional development needs to enhance their digital skills, classroom management competencies and their expectancy in this direction. Other solutions were identified as structural solutions divided into sub-codes of course design, infrastructural solutions and training for students and parents. These findings are related to the online learning models and e-learning pedagogies such as the Connectivism theory by Siemens (2004), Online collaborative learning (OCL) theory by Harasim (2012), and Salmon's (2013) Five Stage Model. A practical course design guarantees that the learning objectives, teaching strategies, and evaluation criteria are all in line. The learning environment is organized, engaging, and participatory. It supports various devices and technological aids, as well as multiple methods of learning and content representation options.

Additionally, it creates unambiguous communication lines, well-rounded assessments, and a timely feedback system. Regarding infrastructural solutions, teachers emphasized the need for personal computers or tablets and uninterrupted free internet for each student. Sari and Nayir (2020) presented similar findings. Implementing learning management systems and online educational platforms into digital learning environments is also the focus of infrastructure solutions (Kerssens & Dijck, 2021). Training for students and parents is mainly about managing distractions and parental involvement and support, especially for younger students. These results are aligned with the literature remarking the participation of parents in monitoring the process and student participation (Budhrani et al., 2021; Knopik et al.,2021; Li et al., 2021; Sari & Nayir, 2020).

Implications and Recommendations

This study presented some remarkable findings that reveal what teachers think about and expect from virtual classroom management. Accordingly, virtual classroom management should be reviewed and reshaped within the framework of digital learning and teaching models, digital learning tools, and assessment principles.

The findings mention the importance and development of teachers' digital competencies and virtual classroom management skills. It could be essential to be inspired by the TPACK framework and to plan the achievements accordingly when designing professional development training for teachers. Apart from that, models specifically for online learning (e.g., Mayer's Cognitive Theory of Multimedia Learning, Laurillard's Conversational Framework, and Salmon's Five Stage Model) introduce some key learning and teaching strategies for virtual classroom management.

These models could be inspiring and stimulating guidelines for educators interested in developing engaging and dynamic learning environments and managing digital interactions while adapting them to changing trends and technological transformations.

The thinking and information processing of new generations, the digital natives, is quite different from the earlier ones. They spend most of their time with computers, mobile phones, and similar digital devices. They have different learning needs in the new society, are technologically prone, and have high awareness in this regard.

They have control of their learning processes, one of the biggest challenges of online learning (Boelens et al., 2017; Anthonysamy et al., 2020). Data-driven research shows that self-regulated learning skills are a vital predictor of academic success, which is about managing one's learning processes (Harris & Graham, 1999; Anthonysamy et al., 2020). The situation is likewise in digital learning environments and virtual classrooms (Barak et al., 2016; Cho & Shen, 2013). Students require competencies in self-regulation that include time management, organization, and self-directed learning to engage in online learning activities successfully and efficiently. Teachers should set goals, monitor progress, encourage reflection, organize the environment, and manage time to help students self-regulate.

Teachers need to transform their teaching and classroom management strategies and pedagogical thinking and include digital student-centered practices in the teaching process to meet the needs of digital students. The Conversational Framework by Laurillard (2002) and the Five Stage Model by Salmon (2013) could guide engaging the classroom environment and solving social integration problems. In addition, ice-breaking activities, group projects or activities, online discussion forums, virtual games, and informal sharing on non-academic topics could be examples of initiatives to increase online social integration. Infrastructure-related solutions could include regulations for hardware and software, assistance on such requirements, digital literacy skills, assurances of online security, access to online resources, IT support for technical issues, and effective learning management systems. Educational administrators should have foresight about such problems related to infrastructure and contact the relevant people to solve the problem by managing the process correctly to help teachers and students have a more productive, engaging, and efficient virtual learning process.

Distractions like gaming, social networking, or domestic chores might be prevented when learning online. Students may require parental assistance in learning online and controlling distractions. Parents might need help to teach their kids to be goal-oriented, prioritize their work, and establish a regular schedule. Schools and educational institutions may offer parents assistance to deal with these issues. They may provide technical support, enable communication between parents and teachers, host seminars or tutorials on utilizing online learning platforms, and give advice on supporting students' academic and emotional needs while pursuing an education online. Collaboration between schools, teachers, and parents seems critical to solve all these issues.

Limitations and Further Research

Due to the nature of qualitative studies, there are some limitations. The findings cannot be generalized and are limited only to the participants. Although the data was presented directly and in detail in terms of transferability, and the analysis process was depicted transparently with the coding frame, the interpretation of phenomenological data largely depended on the researchers' subjective perception.

A broader and more generalizable perspective could be available by utilizing quantitative or mixed-method studies. Different cultural or geographical contexts could enable us to examine how the phenomenon varies across diverse populations. There are several motivation factors of teachers such as intrinsic, supportive work, recognition, or work-life balance (Casely-Hayford et al., 2022; Corkin et al., 2018; Lunenburg & Ornstein, 2008; Power & Goodnough, 2019). Further research could be designed to explore virtual teaching motivational factors of teachers.

Conclusion

In this research, we contacted the teachers to analyze their views about and expectations from the virtual classroom management phenomenon, essential for establishing and sustaining a healthy, desirable, and efficient virtual learning environment. The findings demonstrated the significance of engagement and motivation toward virtual classrooms. Digital competencies and classroom management skills of teachers are two fundamental factors in fostering students' engagement in virtual classrooms. To address the requirements of digital students, teachers need to change their pedagogical ideas, classroom management techniques, and teaching methods to incorporate digital student-centered activities. Additionally, policymakers and administrators should realize the importance of a high standard of open, inclusive, and available online education.

Statements of Publication Ethics

Each author obeys the principles of publication ethics.

Researchers' Contribution Rate

Each author equally contributed to the manuscript by taking part in all stages of the process.

Authors	Literature review	Method	Data Collection	Data Analysis	Results	Conclusion
Aylin Kirişçi-Sarıkaya	☒	☒	☒	☒	☒	☒
Hanifi Parlar	☒	☒	☒	☒	☒	☒

Conflict of Interest

The study has no conflict of interest.

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