International Technology and Education Journal
Vol. 8 No. 1; June 2024
ISSN: 2602-2885
URL: http://itejournal.com/

Uygun, M., & Çayirli, E. (2024). Virtual classroom management competency of classroom teachers. International Technology and Education Journal, 8(1), 36-46.

Virtual Classroom Management Competency of Classroom Teachers

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SUMMARY

The Covid-19 pandemic process brought along compulsory changes in the field of education in our country as in the whole world. Traditional face-to-face education was replaced by virtual classroom implementations. Effective management of these implementations has therefore gained particular importance. This study was conducted to determine virtual classroom management competency levels of classroom teachers. The study was designed around descriptive survey model that aims to reveal the current situation. The population of the study was classroom teachers working in Pamukkale and Merkezefendi districts of Denizli province in the 2021-2022 academic year. The sample of the study was comprised of 326 classroom teachers determined with random sampling method. The data of the study were collected through the scale of "Teachers' Virtual Classroom Management Competencies" developed by Can & Gündüz (2021a). The scale is 5-point Likert-type scale and consists of 24 items. The sub-dimensions of the scale are "relationships with students", "virtual classroom activities" and "virtual classroom management." In the analysis of the data obtained in the study, descriptive statistical analysis methods were employed. As a result of the preliminary analyses, non-parametric statistical tests including. "Mann Whitney U" test and "Kruskal Wallis-H" test were determined to be used. According to the results of the study, the teachers viewed themselves at a good competency level in all sub-dimensions of virtual classroom management. It was found that the classroom teachers with prior virtual classroom experience exhibited significantly higher total arithmetic means in the sub-dimensions and in the overall scale compared to those without virtual classroom experience. The highest mean regarding the classroom teachers' virtual classroom management competency levels and the sub-dimensions was observed in the sub-dimension of "Virtual Classroom Activities" and at "agree" level. This indicates that the teachers possess the highest level of competency in virtual classroom activities. Looking at the results, it is determined that the teachers' virtual classroom management competencies are generally at a high level.

Keywords: Virtual classroom, virtual classroom management, classroom teacher

INTRODUCTION

The Covid-19 pandemic process brought along compulsory changes in the field of education in our country as in the whole world. Traditional face-to-face education was replaced by virtual classroom implementations. The nature of virtual classrooms that enables creating an interactive environment, reaching students from different settings, and increasing awareness towards collaborative endeavours has made it a preferred education system (Martin & Parker, 2014). As well as making it possible to teach various learners with instructional tools, virtual classrooms provide advantages from various aspects such as offering flexibility in terms of time and location and maintaining interactive communication. Besides, these classrooms give teachers the opportunity to access online tools to be used for instructional purposes (Rufai Alebiosu & Adeakin, 2015).

During the Covid 19 pandemic, all private and public schools utilized virtual classroom practices. Virtual classroom practices are realized through virtual classroom software. It is also stated to be possible to perform these virtual classroom practices, by taking the necessary security and privacy measures, via free versions of such platforms as Zoom, Microsoft Teams, Google Meet, Skype and so on (YEĞİTEK, 2020). With a special live lesson application called EBA, the teachers carried on their lessons by accessing the Zoom platform via EBA interface. In our country, face-to-face education in the schools affiliated to the Ministry of National Education (MEB) was suspended as of March 13, 2020. MEB first announced that the interim break, which was initially scheduled for April 6-10, 2020, was rescheduled to March 16-20, 2020, and subsequently informed the public that urgent distance education activities would be launched on March 23, 2020 (Ministry of National Education [MEB], 2020a). MEB reported that a total of 5,954,174 live lessons were carried out in virtual classrooms across Turkey during the emergency distance education period that started on March 23, 2020, and ended on June 19, 2020, due to COVID-19 pandemic (MEB, 2020b). This period highlighted the importance of distance education and virtual classroom applications.

Distance education is an innovative education system that is completely independent of time and space, eliminating the necessity of the learner and the educator to be physically present in the same environment, where courses are

taught in a completely virtual environment with real-time video or audio through contemporary computer technologies, and where the participant can attend the courses at any time and has the chance to re-watch and review these courses (Albayrak, 2017). Distance education has rapidly developed and become widespread thanks to today's technology. Distance education is also referred as "Virtual Course", "Virtual Classroom", "E-Learning", "E-Education", "Electronic Learning". Virtual classrooms are environments where students and teachers communicate online simultaneously and in different places (Kaya, 2011, p. 87). Distance education is a time-saving, flexible and innovative education system in which courses can be held with audio, video, and interactive formats together with the advancements in today's computer and internet technologies. Virtual classrooms are online environments where teachers and students interact as if they were face to face in a classroom environment (Parker & Martin, 2010). Virtual classrooms can be regarded as environments that offer a learning environment similar to traditional classrooms. Thanks to the technologies utilised in these environments, learners can be provided with multiple media, a situation that allows for meeting the educational needs of learners with different intelligence types (Kaya, 2011). According to Bülbül (2020, p. 19), virtual classrooms are also the settings where teachers (instructor) and students (learners) come together online using different tools. While virtual classrooms are commonly associated with distance education in the field of education, they are also utilised in other fields such as laboratory applications, seminars, software introductions, video conferences.

The strengths of virtual classrooms are as follows: Physical distance is not a problem. The boundary of space and time is eliminated. A virtual classroom offers educational opportunities to disabled people who cannot go to school. Students have a better understanding of the subjects. Students can receive education at their own pace. They can re-view the lessons and topics. Communication with a larger audience is ensured. Since books, magazines, presentations, etc. are downloaded from electronic media, the process is fast and the cost is low (Albayrak, 2017, p.38). On the other hand, some of the weaknesses of virtual classrooms are as follows: Access to the system is not possible without the internet. The initial investment cost is high. There may be disruptions in the lessons due to the problems in the technological system. It can be challenging to address areas that are more practice-oriented as in laboratory and workshop subjects. There may be difficulties in the preparation of the course syllabus. Students who do not possess self-autonomy to study by themselves may face challenges in maintaining their motivation. The implemented programme requires updating (Albayrak, 2017, p.38). In cases where teachers lack experience in virtual classrooms, the teachers may struggle to effectively manage classes (Can, 2020, pp. 260-261)

In addition to determining the strengths and weaknesses of virtual classrooms, the issue of effective management of virtual classrooms has also gained importance. Classroom management, according to Başar (2011, p.6), is the management of individuals who are peers in the sequential education levels. According to Celep (2000, p.1), classroom management is defined as the process of coordinating teaching resources and students in order to achieve the objectives of the class. According to İlgar (2000, p.161), on the other hand, it refers to the effective and efficient management of resources, individuals, and time in the classroom in order to achieve the goals of education. Although the activities performed are similar in face-to-face and virtual environments, there exist some differentiating intermediary elements and rules. Within the scope of the differentiating elements between face-to-face and virtual classroom environments, differences are observed in terms of physical arrangement of the classroom environment, planning and programming activities, behaviour and rules management, time management, motivation, teacher, communication and interaction elements, which are accepted as the basic dimensions of classroom management (Polat, 2016). The concept of virtual classroom management can be defined as bringing together students located in different places simultaneously and in online medium, disseminating information and materials through technology, creating, and maintaining the order and rules necessary for learning to take place (Kaya, 2011). Virtual classroom management aims to evoke a sense of real-time learning in students, as in classroom environment, to meet the emotional needs of the students and to improve the positive relationship between the teacher and the student (Ho & Lin, 2016). As Ceylan (2020) defined, virtual classroom management happens in the learning spaces where students and teachers meet in an online platform. In this context, the immediate importance of virtual classroom management has sparkled together with the pandemic period. As a consequence of the compulsory suspension of face-to-face education, the concept of virtual classroom management and the use of virtual classrooms has gained an increased importance.

Careful classroom management is essential for the smooth and effective functioning of virtual classrooms. This involves proper and well-structured planning, management of student behaviours within the framework of predetermined rules, and facilitation of access to online courses for students and teachers (Can, 2020, p. 262). As suggested by Franklin & Harrington (2019), the teacher is expected to go beyond the specified programme in the classroom. The most important factors in virtual classroom practices are teachers and students. Factors such as the motivation of the teacher and students, personality traits, and the content of the lessons also increase the effectiveness of virtual classroom practices. Gündüz & Can (2013, p. 421) argued that in order for teachers to manage the classroom effectively, they should possess a very good professional knowledge, general cultural knowledge, content knowledge and classroom management skills. Teachers, who are responsible for facilitating students' learning, fostering their socialization, and promoting desired behaviours in students, need to employ

effective classroom management in order to successfully fulfil these responsibilities. According to Milliken (2019), teachers should definitely receive virtual classroom management training before starting their profession, which will lead them to display positive improvements in their professional knowledge and classroom management skills.

The transition to virtual classroom medium due to the pandemic process has drawn the attention to the impact of classroom management. The reduction of physical distance between teachers and students through technology entails differences in practice from traditional classroom management. As a crucial issue, on the other hand, classroom management is a sine qua non for students to be productive. In response to the challenges posed by the virtual environment in terms of classroom management, there exist rules and principles that students need to adhere to. In this process, teachers need to be aware of the sociological characteristics of their classes, know their students' qualities, and apply classroom management principles accordingly (Can, 2020, p.252).

The relevant literature indicated that various studies have been conducted on virtual classroom practices and virtual classroom management. When these studies are examined, it is seen that the competencies, attitudes and opinions of teachers, working at different grades and education levels, towards virtual classroom management are revealed as well as the competencies, attitudes and opinions of school administrators and prospective teachers considering virtual classroom management (Aslan, 2023; Aslan-Altan, 2021; Akgöl, Elçi, Uludağ & Özer, 2022; Araz, Aldemir, Tunç & Çam, 2023; Can & Gündüz, 2021b; Polat, 2023).

Virtual classroom applications gained significance during the pandemic, and these applications contributed to teaching and learning beyond the confines of traditional school settings. The potential of virtual classroom applications should be taken into consideration since they may become more prevalent in the future by evolving into diverse dimensions. In this sense, primary school teachers are expected to have knowledge, skills, and attitudes related to virtual classroom management. This study aims to determine primary school teachers' virtual classroom management competency levels and whether their competencies vary according to different variables.

The main research question that is aimed to be answered in the study is as follows: "What is the virtual classroom management competency level of primary school teachers?" The subproblems are as follows:

1. What are the perceptions of the primary school teachers regarding their virtual classroom management competency levels?

2. Do the primary school teachers' virtual classroom management competency levels differ significantly according to the variables of gender, age, education level, teaching experience, district of employment and having virtual classroom experience?

METHOD

This study was conducted in descriptive survey model and with a quantitative approach. Survey models are the research models that aim to describe a present or past situation (event, person, object) as it exists within its own context (Karasar, 2012, p.79).

Participants

The population of the study consisted of the primary school teachers working in Pamukkale and Merkezefendi districts of Denizli province in the 2021-2022 academic year. Out of the teachers constituting the research population, 342 teachers selected by "random sampling" method were reached, and the data gathered from 326 teachers who filled in the scale appropriately in accordance with the scientific norms were analysed. The scales that were filled in inappropriately were excluded. The distribution of the demographic features of the teachers who filled in the scales in accordance with the scientific norms is presented in Table 1.

Table 1. Demographic Features of the Teachers

Variable	Category	*n*	%
Gender	Female	156	56.0
	Male	170	44.0
	Total	326	100
Age	25-35	49	15.0
	36-45	218	66.9
	46-55	56	17.2
	56-65	3	0.9
	Total	326	100
Teaching Experience	1-10 years	25	7.7
	11-20 years	181	55.5
	21-30 years	107	32.8

	30 years and more	13	4.0
	Total	326	100
Education Level	Bachelor's Degree	296	90.8
	Master's Degree	30	9.2
	Total	326	100
Having virtual classroom experience	Yes	312	95.7
	No	14	4.3
	Total	326	100
District of employment	Pamukkale	159	48.8
	Merkezefendi	167	51.2
	Total	326	100

As can be seen in Table 1, 56% of the participants were female while 44% was male. The majority of the participating teachers in the study were graduates with a bachelor's degree (90.8%). Those having a master's degree, on the other hand, were represented with 9.2%. Considering the variable of teaching experience, it is seen that the teachers with 11-20 years of experience constituted the highest percentage with a rate of 55.5%. The teachers having virtual classroom experience constituted 95.7% of the participants in this study, whereas the rate of the teachers without virtual classroom experience was 4.3%. While 51.2% of the teachers were working in Merkezefendi district, the remaining 48.8% were observed to work in the Pamukkale district.

Data Collection Tool

The data collection tool used in the study consists of two parts. The first part of the tool obtains general information about the teachers with six demographic characteristics including "Gender, Teaching Experience, District of Employment, Education Level, Age, and Virtual Classroom Experience". The second part involves "Teachers' Virtual Classroom Management Competency Scale (TVCMCS)", developed by Can and Gündüz (2021a), which consists of 24 items to measure virtual classroom management competency levels of primary school teachers. The scale consists of three sub-dimensions. The scale comprises the following three sub-dimensions: "relationships with students" (items 1 to 11), "virtual classroom activities" (items 12 to 19), and "virtual classroom management" (items 20 to 24).

In the reliability analysis of the scale, internal consistency coefficients were determined using Cronbach's Alpha (α) coefficients for each sub-dimension and the overall scale. The reliability coefficient for the overall scale was .909, and it was found .910 for the first sub-dimension, .832 for the second sub-dimension and .765 for the third sub-dimension. The reliability coefficients (item-total correlations) for both the overall scale and the sub-dimensions were calculated and all of them were found statistically significant at a very high level, indicating that all items were reliable (Can & Gündüz, 2021a).

The Cronbach's Alpha (α) values obtained in this study are presented in Table 2.

Table 2. Teachers' Virtual Classroom Management Competency Scale (TVCMCS)

	Number of Items	Alpha coefficient
Relationships with students	11	0.92
Virtual classroom activities	8	0.84
Virtual classroom management	5	0.82
Total	24	0.94

Table 2 demonstrates the three subdimensions of "Teachers' Virtual Classroom Management Competency Scale (TVCMCS)". The number of items in the scale is 24, and the Cronbach's Alpha values vary between 0.82-0.94. Given that all Cronbach's Alpha values are above 0.70, it is determined that the scale is reliable considering both the sub-dimensions and the overall scale (Kalaycı, 2008).

The scale is a Likert type scale, and a 5-point Likert type draft scale was developed. In the scale, the following agreement levels were used: "Strongly Disagree" (1), "Disagree" (2), "Undecided" (3), "Agree" (4), and "Strongly Agree" (5).

Data Collection

Upon getting the necessary permissions, visits were made to the schools where the study was planned to be conducted, the permissions were presented and information about the study was provided. The teachers who were willing to participate were given the scale and asked to fill it out. The study was carried out with the consent of the participants after they were informed.

In the first step, all the scales gathered were examined by the researcher, and the scales that were incomplete, partially-filled or not filled in appropriately were not included in the analysis. Each measurement tool, then, was

given a code number. After entering all the data, the accuracy of the input was verified. Once it was confirmed that there was no problem, data analysis procedures were initiated.

Data Analysis

The data obtained from the responses of the primary school teachers working in Pamukkale and Merkezefendi districts of Denizli province in the 2021-2022 academic year were entered into the SPSS programme for analysis.

One sample Kolmogorov-Smirnov test was applied to the collected data for normality analysis. It was determined that the total scores of "Teachers' Virtual Classroom Competency Scale" did not exhibit normal distribution ($p=.000$. $p<0.05$). Besides, the "Kurtosis and Skewness" values of the scale and sub-dimensions were found to vary between -1.009 and +3.036. In scientific studies conducted, values within the range of -2 and +2 indicate that the distribution is normal (George & Mallery, 2010). It is seen that the "Skewness" value obtained was not between -2 and +2 values. Since the "Kurtosis and Skewness" values obtained by the one sample Kolmogorov-Smirnov test were not within the specified ranges, the data were analysed using non-parametric statistical techniques. In the analysis of the data derived from the scale, descriptive statistical analyses were applied. In addition, "Mann Whitney U" test was applied to the data in the groups with two variables. In the groups with more than two variables, "Kruskal Wallis-H" test was employed, and in cases where a significant difference was found, Mann-Whitney U analysis with pairwise comparison was performed to determine which group showed the difference.

The score ranges for the Teachers' Virtual Classroom Competency Scale were determined as follows and the means were interpreted accordingly: 1.00-1.80 "Strongly disagree (Very low)", 1.81-2.60 "Disagree (Low)", 2.61-3.40 "Undecided (Medium)", 3.41-4.20 "Agree (Good)", 4.21-5.00 "Strongly agree (Very good)".

FINDINGS

In this section, the findings obtained as a result of the data analysis are presented. Specifically, the findings gathered related to the two following main questions of the research were delineated: (1) What are the perceptions of the first grade primary school teachers regarding their virtual classroom management competency? and (2) Do the second grade primary school teachers' virtual classroom management competency levels differ significantly according to the variables of gender, age, education level, teaching experience, district of employment and having virtual classroom experience?

The first research question was determined as "What are the perceptions of the primary school teachers regarding their virtual classroom management competency?". In this sense, Table 3 demonstrates the means and standard deviation results of the primary school teachers' perceptions of their virtual classroom management competencies.

Table 3. Descriptive Statistics Regarding the Primary School Teachers' Virtual Classroom Management Competency Scale Total Scores

Subdimensions	n	$\bar{X}$	s	Agreement Level
Relationships with students	326	3.96	.65	Agree
Virtual classroom activities	326	4.15	.49	Agree
Virtual classroom management	326	3.97	.62	Agree
Overall Scale	326	4.03	.52	Agree

According to Table 3, the arithmetic mean of the overall scale scores is observed to be ($\bar{x}$ = 4.03). This value is within the limits of "agree" in the scale score range system. In this context, those who completely agree on an item get "5" points while those who strongly disagree get "1" point. Higher scores in the scale indicate a high level of virtual classroom management competency, while lower scores suggest a lower level of competency. The result obtained from the overall mean of the scale ($\bar{x}$ = 4.03) shows that the teachers have a high level of competency in virtual classroom management. Considering the sub-dimension scores, the maximum value was observed in virtual classroom activities ($\bar{x}$ = 4.15). This value corresponds to the agreement level of "agree". The mean of "virtual classroom management" sub-dimension is ($\bar{x}$=3.97) and the mean of "relationships with students" sub-dimension scale is ($\bar{x}$=3.96). These results fall within the scope of "agree" suggesting that the teachers have a sufficient level of confidence in virtual classroom management and consider themselves competent in virtual classroom management.

The second research question in the study was as follows: Do the primary school teachers' virtual classroom management competency levels differ significantly according to the variables of gender, age, education level, teaching experience, district of employment and having virtual classroom experience?

"Mann-Whitney U" test was performed to analyse the teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions according to gender. The results obtained are presented in Table 4.

Table 4. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and Its Sub-Dimensions by Gender

Subdimensions	Gender	n	Mean Rank	Sum of Ranks	U	Z	p
Relationships with students	Female	156	153.95	24016.00	11770.000	-1.759	.079
	Male	170	172.26	29285.00			
Virtual classroom activities	Female	156	153.95	24015.50	11769.500	-1.771	.077
	Male	170	172.27	29285.50			
Virtual classroom management	Female	156	154.28	24068.00	11822.000	-1.714	.087
	Male	170	171.96	29233.00			
Overall mean	Female	156	151.28	23599.00	11353.000	-2.246	.025
	Male	170	174.72	29702.00			

* p<0,05

When Table 4 is examined, it is observed that there is a difference in the overall mean of the participating primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions by gender, but there is no difference in the three sub-dimensions. In the overall mean, it is seen that there is a difference at "0.05" significance level (U=11353.00; p=.025; p<0.05). In the overall mean, a difference was found between men and women in favour of men. By looking at these results, it can be suggested that there is a significant difference between men and women in favour of men in the overall mean. In cases where the difference is significant according to Mann Whitney U test results, the effect size (r) is calculated by dividing the z value by the square root of the total number of people in the two groups. Kılıç (2014) specified that when Cohen's effect size (d) value is less than 0.2, the effect size can be defined as weak; if it is 0.5, it can be defined as moderate; and if it is greater than 0.8, it can be defined as strong. The analysis of the virtual classroom management competency of the primary school teachers according to gender using the "Mann–Whitney U" test revealed an effect size of r=-0.12 in the overall mean, indicating a significant difference with a "small effect value". Therefore, it can be stated that there is a significant difference in favour of males in the analysis of the primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimension by gender.

"Kruskal Wallis-H" test was performed to analyse the perceptions of the primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions by age. The results obtained are presented in Table 5.

Table 5. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and its Sub-Dimensions by Age

Subdimensions	Age	n	Mean Rank	χ2	p
Relationships with students	25-35 years	49	159.92	3.069	.381
	36-45 years	218	169.51		
	46-55 years	56	149.38		
	56-65 years	3	49.00		
Virtual classroom activities	25-35 years	49	163.05	.218	.975
	36-45 years	218	167.63		
	46-55 years	56	151.69		
	56-65 years	3	91.00		
Virtual classroom management	25-35 years	49	192.26	3.358	.340
	36-45 years	218	161.23		
	46-55 years	56	148.14		
	56-65 years	3	145.33		
Overall mean	25-35 years	49	166.91	1.460	.692
	36-45 years	218	168.81		
	46-55 years	56	144.63		
	56-65 years	3	74.33		

* p<0.05

When Table 5 is examined, it is observed that the perceptions of the participating teachers regarding virtual classroom management competency do not show a significant difference according to their ages in all sub-dimensions and in the overall mean at the significance level of "0.05" ($\chi2$=1.460; p=.692; p>0.05). Consequently, it is determined that the teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions did not differ according to age; rather, similarities are noted.

"Kruskal Wallis-H" test was used to find out whether the primary school teachers' perceptions based on the virtual classroom management competency scale and its sub-dimensions differed according to teaching experience. The results obtained are shown in Table 6.

Table 6. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and Its Sub-Dimensions According to Teaching Experience

Subdimensions	Teaching Experience	n	Mean Rank	$\chi 2$	p
Relationships with students	1-10 years	25	182.50	7.779	.051
	11-20 years	181	166.71		
	21-30 years	107	163.32		
	30 years and more	13	83.77		
Virtual classroom activities	1-10 years	25	204.12	2.218	.528
	11-20 years	181	163.75		
	21-30 years	107	157.35		
	30 years and more	13	132.54		
Virtual classroom management	1-10 years	25	225.94	6.877	.076
	11-20 years	181	160.22		
	21-30 years	107	153.88		
	30 years and more	13	168.23		
Overall mean	1-10 years	25	200.72	2.915	.405
	11-20 years	181	165.44		
	21-30 years	107	157.71		
	30 years and more	13	112.54		

* $p<0.05$

When Table 6 is examined, it is observed that the perceptions of the primary school teachers regarding virtual classroom management competency scale and its sub-dimensions do not show a significant difference according to their teaching experience at the significance level of "0.05" ($\chi 2=2.915$; $p=.405$; $p>0.05$) in all sub-dimensions and in the overall mean. As a result, it was revealed that the teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions did not differ according to seniority.

"Mann-Whitney U" test was conducted to compare the primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions according to their education level. The results obtained are shown in Table 7.

Table 7. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and Its Sub-Dimensions According to Education Level

Subdimensions	Education Level	n	Mean Rank	Sum of Ranks	U	Z	p
Relationships with students	Bachelor's	296	165.37	48950.50	1199.000	-1.131	.258
	Master's	30	145.02	4350.50			
Virtual classroom activities	Bachelor's	296	165.80	49076.00	1048.500	-1.396	.163
	Master's	30	140.83	4225.00			
Virtual classroom management	Bachelor's	296	164.95	48825.50	1247.500	-.885	.376
	Master's	30	149.18	4475.50			
Overall mean	Bachelor's	296	165.67	49038.50	1310.000	-1.308	.191
	Master's	30	142.08	4262.50			

* $p<0.05$

When Table 7 is examined, it is observed that the opinions of the participating primary school teachers regarding virtual classroom management do not differ significantly according to their educational backgrounds at the significance level of "0.05" ($U=1310.000$; $p=.191$; $p>0.05$) in all sub-dimensions and the overall mean. Consequently, it can be concluded that there is no difference in the evaluation of teachers' virtual classroom management competency and sub-dimension perceptions based on whether they are graduates or postgraduates.

"Mann - Whitney U" test was conducted to compare the primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions according to the district they work in. The results obtained are shown in Table 8.

Table 8. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and Sub-Dimensions According to the District of Employment

Subdimensions	District of Employment	n	Mean Rank	Sum of Ranks	U	Z	p
Relationships with students	Pamukkale	159	175.63	27924.50	11348.500	-2.275	.023
	Merkezefendi	167	151.96	25376.50			
Virtual classroom activities	Pamukkale	159	167.64	26654.00	12619.000	-.781	.435
	Merkezefendi	167	159.56	26647.00			
Virtual classroom management	Pamukkale	159	170.80	27157.00	12116.000	-1.382	.167
	Merkezefendi	167	156.55	26144.00			
Overall mean	Pamukkale	159	173.79	27633.00	11640.000	-1.926	.054
	Merkezefendi	167	153.70	25668.00			

* p<0.05

As can be seen in Table 8, the examination of the participant primary school teachers' perceptions regarding virtual classroom management competency scale and its sub-dimensions indicates no difference in virtual classroom activities subdimension, virtual classroom management sub-dimension, and in the overall mean according to the district where the teachers work at the significance level of "0.05". However, it is observed that there is a difference in the sub-dimension of relationships with students (U=11348.500; p=.023; p>0.05). In the sub-dimension of relationships with students, a difference was found in favour of "Pamukkale" district. Based on this result, it can be concluded that there is a significant difference in favour of "Pamukkale" in the sub-dimension of relationships with students according to the district where the teachers work. Based on the results of the "Mann Whitney U" test, the effect size (r=0.12) was calculated for the sub-dimension of relationships with students considering the variable of the district of employment and a significant difference with a "small effect value" was found.

"Mann - Whitney U" test was conducted to compare the primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions according to having virtual classroom experience. The results obtained are shown in Table 9.

Table 9. Findings on the Primary School Teachers' Perceptions based on Virtual Classroom Management Competency Scale and Sub-Dimensions according to Having Virtual Classroom Experience

Subdimensions	Having Virtual Classroom Experience	n	Mean Rank	Sum of Ranks	U	Z	p
Relationships with students	Yes	312	167.12	52141.50	1054,500	-3.286	.001
	No	14	82.82	1159.50			
Virtual classroom activities	Yes	312	166.61	51982.50	1213,500	-2.841	.005
	No	14	94.18	1318.50			
Virtual classroom management	Yes	312	167.26	52185.00	1011,000	-3.445	.001
	No	14	79.71	1116.00			
Overall mean	Yes	312	167.33	52208.00	988,000	-3.471	.001
	No	14	78.07	1093.00			

* p<0.05

Table 9 reveals that the participating primary school teachers' perceptions based on virtual classroom management competency scale and its sub-dimensions differed in the sub-dimension of relationships with students (U=1054.500; p=.001; p<0.05), virtual classroom management subdimension (U=1011.000; p=.001; p<0.05) and in overall mean (U=988.000; p=.001; p<0.05) at the "0.05" significance level according to having virtual classroom experience. The overall mean and sub-dimension total scores of the teachers having virtual classroom experience were significantly higher than those without virtual classroom experience. In terms of overall mean and sub-dimension scores, the difference was in favour of the teachers having virtual classroom experience. Based on the results of the "Mann Whitney U" test, considering the virtual classroom experience variable, the effect sizes were calculated for the subdimensions as in the following way: relationships with students (r= -0.18), virtual classroom management (r= -0.19); and overall mean (r= -0.19). As a result, significant differences with "small effect value" were found for the two sub-dimensions and overall mean.

CONCLUSION AND DISCUSSION

As a result of the study, it was found that the teachers' virtual classroom management competencies were generally at the level of "agree". The primary school teachers' competencies in virtual classroom management were also at the level of "agree" in all sub-dimensions. This finding demonstrates that the teachers considered themselves competent in virtual classroom management. In the literature, studies conducted by Akgöl, Elçi, Uludağ & Özer

(2022), Aslan (2023), Can (2020), Can & Gündüz (2021b) and Polat (2023) also supported the results of the present study by similarly determining that teachers consider themselves sufficient in virtual classroom management.

Considering the "relationships with students" sub-dimension of the virtual classroom management scale, it can be stated that the primary school teachers are able to establish effective communication with students, provide constructive feedback, and use time efficiently. This effective communication between teachers and students in virtual classrooms has been found to enhance student motivation, aligning with the findings of several studies conducted (Can & Gündüz 2021b; Özdinç & Kahraman, 2018; Polat 2023; Yaşlıca, 2020; Yılmazsoy).

This study demonstrated that the highest mean regarding the primary school teachers' virtual classroom management competencies was in the sub-dimension of "Virtual Classroom Activities" and at “agree” level. In other words, the teachers possess the highest level of competency in virtual classroom activities. Likewise, Akgöl, Elçi, Uludağ & Özer (2022), Araz, Aldemir, Tunç & Çam (2023) and Polat (2023) found in their studies that teachers considered themselves sufficient in the "Virtual Classroom Activities" sub-dimension. Canpolat and Yıldırım (2021) supported this in their study and also stated that teachers improved their competencies in using technology. This result shows that teachers attach importance to the competence of acquiring the necessary technological tools in virtual classrooms, establish the classroom rules together with the students, and take into account the needs and expectations of the class while planning virtual classroom lessons. The research findings align with the perspective of Franklin & Harrington (2019) emphasizing the importance of collaboratively organizing, sharing, and teaching classroom rules and teacher expectations at the beginning of the term. In a study carried out by Arslan & Şumuer (2020), it was revealed that one tenth of the teachers had problems in the planning stage, one third in the presentation stage, and more than half in the evaluation stage of the planning-programming activities dimension of classroom management in virtual classrooms.

It was also revealed in the study that the primary school teachers' virtual classroom management competencies in the "virtual classroom management" sub-dimension of the scale was at the level of "agree". Looking at this result, it can be suggested that the teachers have the competency to use the technology required in the management of virtual classrooms, make the necessary technological preparations before virtual lessons, and use different techniques. As a result of the studies conducted by Can & Gündüz (2021b), Kaya (2011), Polat (2023), and Yılmazsoy, Özdinç & Kahraman (2018), it was stated that teachers have the technological competencies required for virtual classroom management, can make technological preparations before virtual classroom lessons, and can use various methods and techniques.

It is seen that primary school teachers' perceptions of virtual classroom management competencies and the scale sub-dimensions do not differ according to age, teaching experience and education level, but they differ according to the district where they work, gender and virtual classroom experience. As a result of the study, according to the gender variable, there was a difference in favour of men in the overall scale and in the sub-dimensions of the scale. Looking at the studies in the literature, Can & Gündüz (2021b) found significant differences in the sub-dimension of competencies related to "virtual classroom activities". The study revealed that male teachers have lower competency in managing "virtual classroom activities" compared to female teachers. Araz, Aldemir, Tunç & Çam (2023), on the other hand, argued that teachers' virtual classroom management competencies did not differ according to gender variable. Akgöl, Elçi, Uludağ & Özer (2022) obtained the same result in their study and determined that teachers' views on virtual classroom management did not differ statistically according to the gender variable. These findings do not coincide with the results obtained in the present study.

As a result of the study, statistically significant differences were observed in the teachers’ virtual classroom management competencies sub-dimension scores and total scores according to the variable of virtual classroom experience. In this regard, the means of the total and sub-dimension scores of the teachers with virtual classroom experience was higher than those without virtual classroom experience. It can be suggested that teachers' virtual classroom experience is one of the important indicators of their competence in virtual classroom management. Similar to the result of this study, Can & Gündüz (2021b) and Akgöl, Elçi, Uludağ & Özer (2022) determined in their studies that teachers' competencies related to virtual classroom management differed significantly according to the variable of virtual classroom experience. In this context, Albayrak (2017), on the other hand, suggested in his study that teachers should receive in-service training on distance education system and virtual classroom management.

Teachers can be encouraged to familiarize themselves with distance education system programmes (Google Classroom, Google Meet, Zoom, etc.) and learn how to use them effectively. Teachers can also be encouraged to attend training, seminars, courses, etc. related to virtual classroom experience and management. Teacher experiences during the pandemic period can be unearthed, and effective distance education strategies can be developed based on these experiences. Updates can be introduced to the curricula of education faculties in order to enhance the pedagogical skills of undergraduate or graduate students enrolled in education faculties related to the virtual classroom experience as they are switching from their student role to teacher role. Further studies can

be conducted with teachers working in other provinces about teachers' virtual classroom management competencies. Virtual classroom management competencies of teachers can be analysed according to their fields of study. Teachers' virtual classroom management competencies can also be examined in relation to other variables and using different measurement tools.

REFERENCES

Akgöl, S. K., Elçi, A., Uludağ, H., & Özer, M. (2022). Öğretmenlerin sanal sınıf yönetimine ilişkin yeterliklerinin incelenmesi. *Anatolian Turk Education Journal, 4*(1), 6-20.

Albayrak, İ. (2017). *Uzaktan eğitim sistemi, uzaktan eğitimde sanal sınıf ortamı ve sanal sınıf ortamında sınıf yönetimi.* (Yayımlanmamış yüksek lisans tezi). Trakya Üniversitesi.

Araz, Ü., Aldemir, S., Tunç, B., & Çam, U. (2023). Öğretmenlerin uzaktan eğitime yönelik tutumları ile sanal sınıf yönetimi yeterlikleri arasındaki ilişkinin incelenmesi. *Ulusal Eğitim Dergisi, 3*(2), 75-91.

Aslan, Ş. (2023). *Sanal Sınıf Ortamları ve Sanal Sınıf Yönetimine İlişkin Öğretmen ve Öğrenci Görüşleri.* (Yayımlanmamış yüksek lisans tezi). Fırat Üniversitesi.

Aslan-Altan, B. (2021). Uzaktan eğitimde yeni serüven: Çevrimiçi öğretmenlik uygulamaları. *Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi Dergisi [MSKU Journal of Education]*, 8(2), 753-766. doi: 10.21666/muefd.975495.

Arslan, Y., & Şumuer, E. (2020). Covıd-19 döneminde sanal sınıflarda öğretmenlerin karşılaştıkları sınıf yönetimi sorunları. *Milli Eğitim Dergisi*, 49(1), 201-230.

Başar, H. (2011). *Sınıf yönetimi.* Anı Yayıncılık.

Bülbül, T. (2020). Sanal sınıfların yönetimi. *Rumeli Köprüsü, Covid-19 Özel Sayı*, 18-25.

Can, E. (2020). Sanal sınıf yönetimi: İlkeler, uygulamalar ve öneriler. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi, 6*(4), 251-295.

Can, E. & Arslan, B. (2018). Öğretmenlerin sınıf yönetimi yeterliklerine ilişkin öğrenci görüşleri. *Karadeniz Sosyal Bilimler Dergisi, 10*(18), 195-219.

Can, E., & Gündüz, Y. (2021a). Öğretmenlerin sanal sınıf yönetimi yeterliği ölçeği: Geçerlik ve güvenirlik çalışması. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi,* 21(2), 574-591.

Can, E., & Gündüz, Y. (2021b). Öğretmenlerin sanal sınıf yönetimi yeterlikleri. *Manisa Celal Bayar Üniversitesi Sosyal Bilimler Dergisi, 19*(3), 49-68. doi:10.18026/cbayarsos.875435

Celep, C. (2000). *Sınıf yönetimi ve disiplin*. Anı Yayıncılık.

Ceylan, M. (2020). Sanal sınıfların yönetimi. D. Kürüm Yapıcıoğlu (Ed.), *Pandemi döneminde eğitim* içinde (ss. 295-352). Anı yayıncılık.

Franklin, H., & Harrington, I. (2019). A review into effective classroom management and strategies for student engagement: Teacher and student roles in today's classrooms. *Journal of Education and Training Studies,* 7(12), 1-12.

George, D. & Mallery, M. (2010). *SPSS for windows step by step: a simple guide and reference,* 17.0 update (10th edition). Pearson,

Gündüz, Y. & Can, E. (2013). Öğrenci görüşlerine göre ilköğretim ve ortaöğretim öğretmenlerinin sınıf yönetimi ilkelerine uyma düzeyleri. *Kuram ve Uygulamada Eğitim Yönetimi Dergisi,* 19(3), 419-446.

Ho, T. K. & Lin, Y. T. (2016). The Effects of Virtual Communities on Group Identity in Classroom Management. *Journal of Educational Computing Research, 54*(1), 3- 21.

İlgar, L. (2000). *Eğitim yönetimi okul yönetimi sınıf yönetimi.* (2. Bs.). Beta Yayınları.

Kalaycı, Ş. (2008). *SPSS uygulamalı çok değişkenli istatistik teknikleri*. Ankara: Asil Yayın Dağıtım.

Karasar, N. (2012). *Bilimsel araştırma yöntemi*. Nobel Yayınları.

Kaya, S. (2011). *Sanal sınıf yönetiminde görev alacak öğretim elemanlarının eğitim gereksinimlerinin belirlenmesi.* (Yayımlanmamış doktora tezi). Anadolu Üniversitesi.

Kılıç, S. (2014). Etki büyüklüğü. *Journal of Mood Disorders,* 4(1), 44, 46.

Martin, F., & Parker, M.A. (2014). Use of synchronous virtual classrooms: Why, Who, and How? *MERLOT Journal of Online Learning and Teaching*, 10(2), 192- 210.

Milli Eğitim Bakanlığı (MEB) (2020a). *Bakan Selçuk, Koronavirüs'e karşı eğitim alanında alınan tedbirleri açıkladı.* [Erişim Adresi:https://www.meb.gov.tr/bakan-selcuk-koronaviruse-karsi-egitim-alaninda-alinan-tedbirleri-acikladi/haber/20497/tr].

Milli Eğitim Bakanlığı (MEB). (2020b). *Türkiye uzaktan eğitim istatistikleriyle dijital dünyanın listelerini zorladı*.http://www.meb.gov.tr/turkiye-uzaktan-egitim-istatistikleriyle-dijital-dunyanin-listelerini-zorladi/haber/21158/tr].

Milliken, K. (2019). *The implementation of online classroom management professional development for beginning teachers* [Doctoral Thesis, Abilene Christian University, Texas, US] (Publication No. 177). Digital Commons @ ACU, Electronic Theses and Dissertations.

Parker, M., & Martin, F. (2010).Using virtual classrooms: Student perceptions of features and charateristics in a online and a blended course. *MERLOT Journal of Online Learning and Teaching*, 6(1), 135-147.

Polat, H. (2016) *Çevrimiçi öğrenme ortamlarında sınıf yönetiminin çeşitli değişkenler açısından incelenmesi.* (Yayımlanmamış doktora tezi). Fırat Üniversitesi.

Polat, A. (2023) *Okul yöneticileri ve öğretmenlerin görüşlerine göre öğretmenlerin sanal sınıf yönetimi yeterliklerinin incelenmesi.* (Yayımlanmamış yüksek lisans tezi). Yeditepe Üniversitesi.

Rufai, M.M., Alebiosu, S.O. & Adeakin, O. A. S. (2015). Conceptual model for virtual classroom management. *International Journal of Computer Science, Engineering and Information Technology (IJCSEIT)*, 5(1),27-32.

Yaşlıca, E. (2020). Sanal sınıf ortamında etkileşimli öğretim materyalinin başarıya ve tutuma etkisi. *Anadolu Üniversitesi Sosyal Bilimler Dergisi, 20*(1), 39-56.

Yenilik ve Eğitim Teknolojileri Genel Müdürlüğü (YEĞİTEK) (2020). 70891843-481.05-E.6406175 sayılı, Sanal Sınıf Uygulamaları konulu resmî yazı.

Yılmazsoy, B., Özdinç, F. & Kahraman, M. (2018). Sanal sınıf ortamında sınıf yönetimine yönelik öğrenci görüşleri: Afyon Kocatepe Üniversitesi örneği. *Trakya Eğitim Dergisi, 8*(3), 513-525.