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BILGISAYAR VE ÖĞRETIM TEKNOLOJILERI ÖĞRETMEN ADAYLARININ SANAL SINIFLARA YÖNELIK METAFORIK ALGILARI*

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ÖZ

Bu araştırmanın amacı, Bilgisayar ve Öğretim Teknolojileri Eğitimi (BÖTE) öğretmen adaylarının sanal sınıflara yönelik metaforik algılarını belirlemektir. Çalışma, BÖTE bölümü 2., 3. ve 4. sınıfta öğrenim gören 168 öğrenci ile gerçekleştirilmiştir. Bu sınıfların seçilmesindeki sebep ise bu sınıfların sanal sınıf uygulamalarına yönelik bir önbilgilerinin olmasıdır. Araştırma kapsamındaki öğrencilere, "Sanal sınıf ……a/e benzer; çünkü ……." biçimindeki eksik bırakılmış bir cümlenin yer aldığı formlar dağıtılmıştır. Bu formlar aracılığı ile öğrencilerin sanal sınıflara ilişkin olarak geliştirdikleri metaforlar ve bu metaforların ortak özellikleri belirlenmeye çalışılmıştır. Öğretmen adaylarının sanal sınıflara yönelik geliştirdikleri 78 metafor ortak özelliklerine göre 37 kategoriye ayrılmıştır. Özellikle öğrencilerin sanal sınıflara yönelik geliştirdikleri kategoriler arasında gerçek sınıf-okul ortamı ile aynı olma, sanal olma, zaman-mekan bağımsızlığı sunma, etkileşim ve iletişimin olması, kolay erişebilirlik ve tekrar edilebilirlik gibi olumlu yönde, sosyal olamama ve etkileşim eksikliği gibi olumsuz yönde kategoriler sayılabilir.

Anahtar Kelimeler: Sanal sınıf, metafor, öğretmen adayları, sanal öğrenme, eğitim teknolojisi.

METAPHORIC PERCEPTIONS OF PRESERVICE COMPUTER EDUCATION AND INSTRUCTIONAL TECHNOLOGIES TEACHERS ON VIRTUAL CLASSROOMS

ABSTRACT

The purpose of this study is to determine the metaphoric perceptions of preservice Computer Education and Instructional Technologies (CEIT) teachers on virtual classrooms. The study was conducted with 168 students studying in year 2., 3. and 4. in the department of CEIT. The reason why these students were selected was because they had pre-knowledge about virtual classroom implementations. During the study, forms including a fill-in-gap sentence "The virtual classroom is like a/an ……; because ……." were distributed to the students. Metaphors created by students on virtual classrooms and the common features of these metaphors were tried to be identified through these forms. The 78 metaphors that preservice teachers developed concerning virtual classrooms were divided under 37 categories. Among the categories that the students formed on virtual classrooms were positive categories such as being the same with real classroom-school setting, being virtual, providing time-space independence, ensuring interaction and communication, easy accessibility and repeatability and negative categories such as being non-social and lack of interaction.

Keywords: Virtual classroom, metaphor, preservice teachers, virtual learning, education technology.

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1.INTRODUCTION

Sustaining education activities, which is the sole cultural communication tool for humans, and every kind of social organization that are related to them is closely related to the quality of learning tools. With this respect, technology assisted applications, prominently in educational organizations, showed tendency towards computer and derivative assistance. Contrary to the general opinion, this has introduced new dimensions to educational environments and through effected use, promoted effective feedbacks to educational outputs.

There are low-cost, student oriented, time-space independent approaches in education that can utilize technology (Saral & Topçu, 2008). Thanks to internet and web-based technology, teaching approaches and materials diversified with different environment and tools; and new learning approaches that are more effective and fruitful have been introduced through asynchronous and synchronous interaction (Türel & Gürol, 2005). E-learning, which became prominent with distance education that does not require teachers and students to be present at the same place at the same time, is today used commonly in every system. To support and facilitate the adaptation of web-based e-learning, shared management, teaching, learning, evaluation and communication, virtual learning environments should be developed (Livingstone, Kemp, & Edgar, 2008, p. 140).

1.1. Virtual Learning Environments: Virtual Classrooms

Through both synchronic and asynchronic learning, virtual learning environments aim at fulfilling additional education tasks and also cooperative tasks. Thus, virtual world/worlds that will provide educational performance to users are created (Bouras, Philopoulos, & Tsiatsos, 2001, p. 176). There are six prominent facets that make the virtual environment superior over other environments (Rotem & Oster-Levinz, 2007, p. 148):

1- Availability of choice, both on the personal level of every learner and also as the heterogeneous response of a learning group,
2- An ongoing, intimate dialogue between learner and teacher,
3- Availability of unrestricted learning conditions,
4- Availability of maximum accessibility to information sources and up-to-date information,
5- Availability of high-standard collaborative learning,
6- Encouragement of independent work, diversified, critical thinking, and personal research.

Virtual classrooms are a communication system which enables a group of people to learn together and assist them in understanding (Tiffin & Rajasingham, 1995, p. 6). When virtual is considered as the apparent truth, then virtual education can be regarded as real education (Cronjé, 2001, p 241). Virtual classrooms are interactive multimedia settings which execute time and space independent learning (Erkan & Altun, 2003). In virtual classrooms, student-teacher and student-student interaction and communication takes place and a social environment is formed (Allmendinger, 2010).

1.2. Metaphor

Metaphors are tools which give the picture of reality and at the same create the reality. Metaphors reflect the subconscious of an individual or societies (Yıldırım & Şimşek, 2011, p. 214). Metaphors, which are a ways of thinking (Forceville, 2002, p. 1; Lakoff, 1993, p. 210),are used as a tool for explaining the characteristics of objects or events because they are a strong way for conveying findings (Patton, 2014, p. 505). By being a perception tool (Arnett, 1999), metaphors enable us to shift information from the known to the unknown. In addition, creating different categories for metaphors paves the way for varied and rich results (Güveli, İpek, Atasoy, & Güveli, 2011). When individuals can't clearly express their knowledge and opinions on concepts, interpreting concepts may be assisted by using metaphors. Thus, this helps discovering attitudes and beliefs (Fidan, 2014). Because student metaphors are created according to the life styles, personal characteristics, educational status and emotions, they are significant for teachers-educators in shaping the students' education. Metaphors speak out the things that students cannot say (Tuncay & Özçınar, 2009).

Many methods-techniques and strategies have been used in the education system, new learning environments have gained importance due to the development in information and communication technologies and the change in human needs (Yıldız, 2016). For the further educational activities, it is important to determine the direction of the effects of virtual classrooms on educational activities and how they change the property of education. Thus, determining student opinions and perceptions on virtual classrooms has gained importance. The quality of virtual classrooms and implementations affect students' perceptions. Because metaphors can be used as tools for identifying perceptions on this issue (Fırat Durdukoca, 2017), they are also the best method for determining the perceptions of preservice teachers on virtual classrooms. In the literature there are metaphor studies on technology (Durukan, Hacıoğlu, & Dönmez Usta, 2016; Fidan, 2014; Gök & Erdoğan, 2010; Kobak & Taskin, 2012; Korkmaz & Ünsal, 2016), the internet (Kocadağ, Aksoy, & Zengin, 2014; Saban, 2010), computer (Çoklar, Vural, & Yüksel,

2010; Ekici, 2016; Guneyli & Ozkul, 2013), social networks (Eren, Çelik, & Aktürk, 2014; Fidan, 2014; Gurol & Donmus, 2010) and distance education (Kaleli-Yılmaz & Güven, 2015; Taş, Yavuzalp, & Gürer, 2016; Tuncay & Özçınar, 2009). However, studies on determining perceptions on virtual classrooms and implementations through metaphors, were not found. In addition, because metaphors are the best way to convey ideas and experiences (Johnston, 2009) and undertake a pedagogical role in computer science (Colburn & Shute, 2008; Fırat & Yurdakul, 2015), this study is considered to make contributions to the literature. Also, it is considered that this study will ensure virtual classroom implementations to be more effective and have more contributions to education.

1.3. Purpose of Study

The purpose of this study is to determine the metaphoric perceptions of Computer Education and Instructional Technologies preservice teachers concerning virtual classrooms. Thus, how preservice teachers perceive virtual classrooms was tried to be identified through metaphors. With respect to this purpose answers for the following questions were sought:

1- What are the metaphors of preservice teachers concerning virtual classrooms?
2- Which categories can the metaphors of preservice teachers concerning virtual classrooms can be placed under?
3- What are the preservice teachers levels of participation in these conceptual categories in terms of gender and grade levels (year 2., 3. and 4.)?

2. METHOD

The phenomenology, one of the qualitative research methods, was used. Perceptions of Computer Education and Instructional Technologies preservice teachers on virtual classrooms were identified with metaphors, which is a qualitative data collection method. In this method a condition, event or fact is described in its natural form. In the metaphor based qualitative data collections process, rich content metaphors can be gathered from individuals or groups subject to open-ended questions. With metaphors, substantial and rich results can be obtained from the subject, state, fact or event that is studied. Metaphors consist of different words and are analyzed after being placed under certain themes according to their similarities and differences (Yıldırım & Şimşek, 2011, p. 212). Learning information is facilitated through metaphors (Alpaslan & Özen Kutanis, 2007).

2.1. Participants

This study was conducted with year 2., 3. and 4. students studying in the department of Computer Education and Instructional Technologies (CEIT). The criterion sampling method, which is one of the purposeful sampling methods, was used in determining the study sample. This sampling method is based on the participants, events, objects or states that are being studied to fulfill the certain criterion (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2016). That the participants have a prior knowledge on virtual classrooms and implementations was set as a criterion in this study. Even though they do not participate in virtual classroom and implementations in person, students studying in the department of CEIT have background knowledge on this issue due to the courses they took in their personal or school life. For this reason year 1. students were not included in the sample.

216 students participated in the study; but the data collected from some students were observed to be inappropriate and were not included in the evaluation. 87 among the 168 students participating in the study are male and 81 are female. 60 of these students are in year two, 53 in year three and 55 in year four. Groups similar in number are a positive state for the study.

2.2. Data Collection and Analysis

The metaphors created by the individuals were identified in the study through a metaphor analysis and an in-depth analysis was carried out based on the metaphors. Their frequency of using metaphors was identified in number (Sönmez & Alacapınar, 2016). During the study, forms requiring personal information of the students and including a fill-in-gap sentence "The virtual classroom is like a/an ……; because …….." were distributed to the students. Thus, by using metaphors, which are a way of explaining a similarity beyond expression by referring to something (Fırat & Yurdakul, 2015), the students were given the opportunity to write down what they liken virtual classrooms to together with the reason. The participants were given a certain period of time to fill in the forms and the forms were collected after the end of this time. Metaphors created by the students on virtual classrooms were determined through these forms and listed through a computer program. These listed metaphors were later on grouped. The metaphors were then categorized according to the reasons they were stated for. The literature was resorted to while categorizing the metaphors. These groups and categories were shared with

two instructors and the categories got their final form based on expert opinion. 37 categories were formed. While forming these categories, the gender and class level of the students were coded.

The validity and reliability of the data collection instrument is based on the reliability and credibility of the data, their analysis and results. Participant control and stating each stage of the study in detail is required for increasing reliability (Büyüköztürk et al., 2016, p. 256). The data were collected through the handwritings of the participants and categories were formed according to the metaphors stated by them. Thus, the data collected from the participants were processed in their original form, the study data were reported in detail and clearly expressed in the findings section of the study; thus, reliability criterion of the study was ensured. The internal consistency of the study was 80%.

3. FINDINGS AND INTERPRETATION

The metaphors created by the students on virtual classrooms and the explanations they gave concerning these metaphors are given in this section. Coding was used while presenting the opinions given about the metaphors. In the coding, the first letter and number refer to the student and line, the second number refers to the student's class level and the final letter refers to the student's gender (the line numbers used in student coding are the numbers of the data that were transferred to the computer initially, a new numbering was not made after the data that were not included in the evaluation).

No	Metaphor	Gender		Class			f	Category (f)
		f	m	2	3	4		
1.	wedding CD's	1			1		1	repeatability (3)
2.	cartoon	1			1		1	
3.	friend		1	1			1	
4.	vice-principal		1		1		1	support for traditional education (1)
5.	circle of friends	1			1		1	a comfortable environment (6)
6.	house	2			2		2	
7.	an orthopedic bed	1		1			1	
8.	laziness	1			1		1	
9.	living room	1			1		1	
10.	real classroom	18	20	4	2	32	38	being the same with real classroom-school setting (54)
11.	school	9	6	5	4	6	15	
12.	teacher	1			1		1	
13.	school	1			1		1	facilitating teaching (1)
14.	school	1			1		1	freely expressing an idea (2)
15.	Facebook and social networks		1		1		1	
16.	foreign place		1	1			1	physical distance (3)
17.	drum		1		1		1	
18.	astral journey		1		1		1	
19.	cloud	1		1			1	space independence (5)
20.	classroom independent from school	1			1		1	
21.	freedom	1	2	1	1	1	3	
22.	time machine	1			1		1	time-space independence (3)
23.	open education	1			1		1	
24.	utopia		1		1		1	
25.	evil spirits		1		1		1	being virtual (22)
26.	soul	1		1			1	
27.	digital setting of schools	1				1	1	
28.	imaginary classroom-setting	3	4	3	2	2	7	
29.	incorporeality	1			1		1	
30.	imagination	3	3	1	1	4	6	
31.	dream	2	1			3	3	
32.	game	2				2	2	

No	Metaphor	Gender		Class			f	Categori (f)
		f	m	2	3	4		
33.	advice		1		1		1	student readiness (4)
34.	work life		1		1		1	
35.	unknown room	1			1		1	
36.	Mars		1			1	1	
37.	space		1			1	1	a technologic system (1)
38.	life		4		4		4	providing different education environments-areas (5)
39.	district		1			1	1	
40.	conference	2	1	1	1	1	3	interaction and communication (9)
41.	taking a private course	1				1	1	
42.	Facebook-social networks	1	4	1	1	3	5	
43.	conference	1	1		1	1	2	information sharing and acquisition (3)
44.	individual learning		1			1	1	
45.	telephone	1	2		2	1	3	easy accessibility (5)
46.	holding a party		1		1		1	
47.	library		1	1			1	
48.	Tv		2		2		2	providing a multi-media platform (5)
49.	visual videos	1	2	1	1	1	3	
50.	going up to the blackboard		1		1		1	being active (1)
51.	tree		1		1		1	enabling success (2)
52.	a car	1				1	1	
53.	being a celebrity	1			1		1	being self-confident (1)
54.	soccer team	1		1			1	ensuring participation (3)
55.	meeting room		1			1	1	
56.	sleep		1		1		1	
57.	utopia	2	1			3	3	being a disciplined setting (3)
58.	game	1	2	3			3	being interactive and fun (3)
59.	The Earth		1			1	1	opportunity for omnipresent education (5)
60.	a walking school	1	1			2	2	
61.	lifelong learning	2		1		1	2	
62.	a schoolyard		1			1	1	being free (2)
63.	forest		1			1	1	
64.	sitting at home	1				1	1	being economical (1)
65.	x=y equation	1				1	1	being useful (1)
66.	Noah’s pudding	1		1			1	being good (3)
67.	box	1	1	1	1		2	
68.	seed		1			1	1	being basis-fundamental (1)
69.	circus		1	1			1	offering variety (1)
70.	stadium		1			1	1	offering reality (1)
71.	federal government		1			1	1	distance administration (1)
72.	being alone on an island	1			1		1	being non-social (1)
73.	a distant recipe	1				1	1	lack of interaction (2)
74.	taking a private course	1				1	1	
75.	meeting		1	1			1	having a time restriction (1)
76.	library		1		1		1	being boring (1)
77.	book	1		1			1	negative thinking (2)
78.	nothing	1		1			1	
	Total	82	86	34	53	81	**168**	

It is evident on the table that there are 78 metaphors and 37 categories were created based on the reasons for these metaphors. These categories can be listed as **repeatability, support for traditional education, a comfortable environment, being the same with real classroom-school setting, facilitating teaching, freely expressing an idea, physical distance, space independence, being virtual, student readiness, a technologic system, providing different education environments-areas, interaction and communication, information sharing and acquisition, easy accessibility, providing a multi-media platform, being active, being boring, enabling success, being self-confident, time-space independence, being non-social, being a disciplined setting, being**

interactive and fun, opportunity for omnipresent education, being free, being economical, being useful, being good, being basis-fundamental, ensuring participation, offering reality, distance administration, lack of interaction, having a time restriction, offering variety and negative thinking. The distribution of the metaphors and categories with respect to gender, class level and having participated in a virtual classroom implementation is also presented on the table.

During the study, it was observed that the students stated their opinions mostly on the "being the same with real classroom-school setting", "being virtual", "a comfortable environment", "space independence", "interaction and communication", "providing different education environments-areas" and "opportunity for omnipresent education". Also, "real classroom and school", "imaginary classroom-environment", "imagination", "Facebook and social networks", "dream" and "life" were the metaphors that the students created the most.

A total of 54 metaphors were created by the students on the "being the same with real classroom-school setting" category. It was observed that female students studying in year four mostly adopted this category. The students used the metaphors "real classroom", "school" and "teacher". Based on these metaphors, it was observed that the students considered virtual classrooms as settings which have and offer the same and in fact better characteristics than real classrooms. Example statements of the metaphors in this category and the reasons for them are given below:

S81-4F. *"...is like a real classroom. Because many implementations in real classrooms can also be carried out in virtual classrooms."*

S187-2M. *"...is like a real classroom. Because it enables us to the things we do in the classroom an in fact offers even more."*

S196-2M. *"...is like a school. Because it is a miniature classroom community."*

S55-3F. *"...is like a teacher. Because it partially carries the characteristics of teachers. For example; warning etc."*

"Being virtual" is another category adopted by the students. It was observed that the majority of those who referred to the metaphors "evil spirits", "soul", "digital setting of schools", "imaginary classroom-setting", "incorporeality", "imagination", "dream" and "game" participated in the virtual classroom implementation, were female and were studying year four. When the explanations that the students gave on this metaphor are considered, it is evident that the feature of being virtual, in other words the fact that virtual classrooms offer real classroom activities through the internet, was emphasized. Among these metaphors, the imaginary classroom-setting and imagination metaphors were referred to the most. As the reasons for these metaphors, the students stated the below given explanations:

S43-3F. *"...it is like an imaginary classroom. Because all the education activities that are performed in a classroom can be carried out when there is actually no classroom."*

S68-3F. *"...it is like an imagination. It doesn't exist but it is present."*

S185-2M. *"...it is like an imaginary setting. The virtual classroom provides us an educational opportunity through technology."*

S171-3F. *"...it is like an imagination. Because it is virtual."*

It was observed that the students, who emphasized another category of virtual classrooms being "a comfortable environment", participated in virtual classroom implementations and were female students in year three. A student (S194-2F) used the metaphor "an orthopedic bed" and stated the reason as *"...it offers a comfortable learning environment for the student"*. Another student (S27-3F) used the metaphor "living room" and gave an explanation as *"...it is a very comfortable setting"*. Other students emphasized the metaphors "circle of friends", "house" and "laziness". Based on these opinions, it can be assumed that virtual classrooms offer students a more comfortable environment than the real classroom setting.

The "space independence" category was created based on the reasons given for the metaphors "cloud", "classroom independent from school" and "freedom" by the majority of the students in the virtual classroom implementation. A student (S153-2F) stated her reason for likening virtual classrooms to "freedom" as *"...it gives us the opportunity to take our courses freely in an environment independent from school"*. Another student (S177-2M) stated that *"...it is like a cloud, because everyone is at different places"* and emphasized that virtual classrooms offer a space independent environment. These reasons can be interpreted as virtual classrooms provide education everywhere independent from schools. It is evident in the table that the majority of the students is female students studying in year two and have participated in the virtual classroom implementation.

In the "interaction and communication" category, the students likened virtual classrooms to "conference", "taking a private course" and "Facebook-social networks". It was observed that students studying in year four and who are male adopted this category more than the other students. A student (S140-4M) stated *"...is like Facebook. Because there is online instant communication"* as a metaphor for this category and the reason for why he created it. Another student (S119-4M) stated; *"...is like social networks. Because you can both interact with those in the same classroom and also share information"* and explained the metaphor "Facebook-social networks". A student (S28-3F) explained the reason for using the "conference" metaphor *as "...it enables mutual communication"* and another student (S70-4F) explained the "taking private course" metaphor as *"it can be personal and interactive"*. It can be assumed that students can interact and communicate best in virtual classrooms and that such environments ensure this.

When student metaphors are considered, it is evident that they likened virtual classrooms mostly to "life" and "district". These metaphors paved the way for the category "providing different education environments-areas". One other finding is that there are year three and male students adopting this category. The metaphor "life", which was likened the most, was explained by a student (S35-3M) as *"it provides taking lessons in different environments"* and another student (S37-3M) stated that *"because people can live in different areas, it enables us to use different education settings"*. Based on these findings, it can be considered that the majority of the students believe that virtual classrooms provide different education areas. Thus, it can be stated that virtual classrooms lead education settings to become different.

Another category where the majority of the metaphors were stated on virtual classrooms was "easy accessibility" and there were 3 metaphors (telephone, holding a party and library) created for this category. It was observed that male students studying in year three and who participated in the virtual classroom implementation especially emphasized this category. According to the findings, for the "easy accessibility" category, the students likened virtual classrooms mostly to a "telephone". The explanation given by a student (S141-4M) who stated this metaphor was: *"...it is like a telephone. Because it provides convenience in communication when we desire it"*. A student (S36-3F) used the metaphor "holding a party" and explained this with *"...everything that is sought is present within it"*. A student (S211-2M) who used the metaphor "library" explained this as *"...we can find anything there"*. Based on these statements of the students, it can be assumed that virtual classrooms offer facility on many things.

Male students studying in year four and who participated in virtual classroom implementations were observed to emphasize the metaphors "TV" and "visual videos". The "providing a multi-media platform" category which resulted from the reasons for these metaphors, displays the majority of the student opinions. Based on student opinions, virtual classrooms can be considered as multimedia assisted settings. Student opinions on this category are given below:

S166-2F. *"...is like a video. Because I feel like I am watching a lesson recording."*

S18-3M. *"...is like a TV. Because I watch and listen."*

The "opportunity for omnipresent education" category was emphasized five times. It is evident on Table 1 that the students who participated in this implementation, who are female and who are studying in year four adopted this category more than the other students. The students likened virtual classrooms to "the Earth", "a walking school" and "lifelong learning". As for the reasons why they used these metaphors, one student (S98-4M) stated *"...it is there where you go"* and another student (S167-2F) stated *"...education is everywhere"* and emphasized that virtual classrooms are implementations that offer education everywhere. Based on these explanations and by taking into consideration the space independent characteristic of virtual classrooms, they can be asserted to by a system offering omnipresent education. It can be interpreted that virtual classrooms offer education everywhere and at any time. Thus, virtual classrooms can be assumed to introduce a new dimension to educational environments.

The students created metaphors by taking into consideration the contributions that virtual classrooms and such environments have on the field of education. The categories in which these metaphors were placed are "repeatability", "support for traditional education", "facilitating teaching", "student readiness" and "ensuring participation". the metaphors in the "repeatability" category were "wedding CD's", "cartoon" and "friend"; the metaphor in the "support for traditional education" category was "vice-principal"; the metaphor in the "facilitating teaching" category was "school"; the metaphors in the "student readiness" category were "advice", "work life", "unknown room" and "mars"; and the metaphors in the "ensuring participation" category were "soccer team", "meeting room" and "sleep". It was observed that mainly male and year three students created metaphors on the contributions that virtual classrooms have on education. Examples of the explanations given as the reasons for using these metaphors are given below:

S1-3F. *"...is like wedding CD's. Because you watch them whenever you want to remember them."*

S189-2F. *"...is like a friend. Because it always explains."*

S3-3M. *"...is like a vice-principal. Because it is the assistant and supporter of traditional education."*

S9-3M. *"...is like an advice. Because whoever wants will take it, whoever doesn't won't."*

S202-2F. *"...it is like a soccer team. Because players constantly pass to each other."*

S100-4M. *"...it is like a meeting room. Because everyone gathers together."* Based on these explanations, it can be asserted that virtual classrooms bring advantages when used in education. These advantages can be listed as repeatability, support to traditional education, facilitating teaching, enabling student readiness and ensuring participation.

The metaphors created by the students concerning their attainments from virtual classrooms are; "freely expressing an idea", "being active", "information sharing and acquisition", "enabling success", "being self-confident" and "being free". In addition, students studying in year four and who are male used these metaphors more than the other students. It can asserted that virtual classrooms give the students the opportunity to freely express their ideas, ensure information acquisition and sharing and assist them in becoming successful, active, self-confident and free. The metaphors used for the category "freely expressing an idea" were "school" and "Facebook-social networks". Explanations such as S47-3F. *"...is like a school. Because just like in the real classroom everyone expresses their opinions and listens to the lesson"* and S14-3M *"...it is like Facebook. Because we can freely express our thoughts"* are examples for this finding. The metaphor "going up to the blackboard" was used for the "being active" category, and a student S17-3M explained this as *"...you can always be active"*. The metaphors created by the students on the "information sharing and acquisition" category were "conference" and "individual learning". S12-3F *"...it is like a conference. Because the expert shares his knowledge. The only difference is the virtual environment."* and S138-4M *"...it is like individual learning. Because it gives us the opportunity to get the amount of synchronic or asynchronic information we desire whenever we want."* can be given as examples for this finding. For the category "enabling success" student S19-3M stated that *"...it is like a tree. Because the branches are students and the product will be harvested at the end of the term of education"* and student S93-4F *"...it is like a car. Because we can go to wherever we want"* and expressed the reasons for using this metaphor.

The metaphor "...it is like being a celebrity. Because I feel as if I am on TV" used by a student (S21-3F) on virtual classrooms was placed under the category "being self-confident". Similarly, among the metaphors used by the students, the explanations given by student S82-4M *"...it is like a schoolyard. Because you feel yourself more free, but learning occurs within that yard (virtual classroom)"* and student S97-4M *"...it is like a forest. Because everyone is free"* led to the creation of the category "being free".

The categories "physical distance", "time and space independence", "a technologic system", "being a disciplined setting" and "being interactive and fun" related to virtual classrooms were emphasized by the students and metaphors related to them were created. It was observed that year three and male students used such metaphors more than the other students and stated that virtual classrooms lead to a physical distance, space and time independence and have a technologic, disciplined, interactive and fun environment. According to this finding, it can be asserted that virtual classrooms have a physical distance, have no time and space restrictions and create a disciplined, interactive and entertaining environment through a technologic system. The metaphors "foreign place", "drum" and "astral journey" were created under the "physical distance" category and the metaphors "time machine", "open education" and "utopia" were created under the category "time and space independence". S7-3M *"...it is like a drum. Because it sounds nice from far away. Because it is distant and because there is distance education it is enjoyable"* and S22-3F *"...it is like a time machine. Because you can be at wherever you want at any time"* statements can be examples of this finding. The metaphors "space", "utopia" and "game" were created for the other categories respectively. Examples for the reasons why they used these metaphors, student S137-4M stated that *"...it is like a utopia. Because it has its own rules and meaning"* and student S215-2M stated that *"...it is like a game. Because it is very fun"* .

Among the categories created by the metaphors used by the students participating in the study on virtual classrooms are "being economical", "being useful", "being good", "being basis-fundamental", "offering variety", "offering reality" and "distance administration". Other features of virtual classrooms were underlined by the students through these categories. The metaphors the students created for these categories are "sitting at home (S86-4F: *"...it is economical"*)", "x=y equation (S92-4F: *"It gives benefit to the extent of the effort given for it"*)", "Noah's pudding (S180-2F: *"...it is good"*)", "box", "seed (S96-3M: *"...a tree doesn't grow without a seed"*)", "circus (S193-3M: *"...everyone says something"*)", "stadium (S101-4M: *"It is like watching the match live"*) and "federal government (S105-4M: *"...there is distant administration*")". Based on these explanations, it can be asserted that virtual classrooms are economical, useful, good and a basis for certain issues, offer variety and reality in education and enables to administer education distantly.

Along with the positive metaphors, metaphors with a negative view were also created by the students. One of these is the "being non-social" category. A student (S40-3F) who used the metaphor "being alone on an island" gave the explanation *"...you can think and search but not carry out everything, you can't talk in person and there is no social relationship"* and this can be interpreted as the individuals emphasizing the fact that they cannot socialize in virtual classrooms. Because these environments are different from the real classroom setting, it is assumed that they will lead individuals to isolation and become non-social.

The "lack of interaction" category created by the students on virtual classrooms was also used to underline another negative characteristic. A student (S175-4F) used the metaphor "a distant recipe" and explained the reason for this as *"...it is like my mum giving me a recipe from far away. Because there is no interaction"*. Another student (S72-4F) used the metaphor "taking a private course" and explained it as *"...you are alone"*. It can be concluded that there is a lack of interaction due to the individuals being systematically distant and lonely.

Students who gave negative opinions used metaphors that were placed under the categories "having a time restriction", "being boring" and "negative thinking". A student (S181-2M) who used the metaphor "meeting" stated that there is a "time restriction" and emphasized that virtual classrooms had time restrictions; a student (S20-3M) who used the metaphor "library" emphasized that virtual classrooms are boring by stated that *"...they are very boring"*; students who used the metaphors "book" and "nothing" (S207-2F) gave their negative opinions on virtual classrooms by stating that *"I don't like them"* and (S209-2F) *"it can't be defined with words"*. The students can be assumed to have negative opinions due to considering virtual classrooms as being anti-social, boring and having a time restriction.

4. CONCLUSION, DISCUSSION AND RECOMMENDATIONS

In this study which tried to reflect preservice teachers' perceptions on virtual classrooms through metaphors, it was observed that there is a large number of students who think that real classroom-school setting is the same as virtual classrooms. This is evident in the fact that the approaches of students on the characteristics of virtual classrooms and on real classrooms are similar and also in the fact that student-teacher interactions are in line with the activities in face-to-face classrooms (Cronjé, 2001, p. 254).

The categories were created by taking characteristics such as being virtual, a comfortable environment, offering space independence, enabling interaction and communication, providing different education environments-areas, easy accessibility, offering a multimedia platform and opportunity for omnipresent education. Virtual classroom implementations offer an education which consists of multimedia components such as interactive and visuality (Erkan & Altun, 2003; Tiffin & Rajasingham, 1995). Because it is important to create a social network and an emotional interaction environment in settings where there are no face-to-face interactions, virtual classrooms increase these notions through e-mail and chatting platforms (Karasar, 1999).

It is well-known that virtual classrooms, which have no geographic restrictions and which create synchronic and asynchronic learning settings, provide time and space independence, enable a more effective learning, decrease costs and ensure mutual communication (Çakır & Yalçın, 2006). There were findings in our present study that support this. Students were observed to emphasize the time-space independence, having physical distance, being economical and being interactive and fun characteristics of virtual classrooms. Virtual environments mostly provide interaction and synchronization (Parker & Martin, 2010). During the digital change, the term instant time gained importance instead of hour and spatial distance lost its importance in informatics, communication and finance (Yıldız & Alaeddinoğlu, 2011) and these support the result of this study oriented towards virtual classrooms. In addition, Tuncer and Taşpınar (2008) stated that costs will decrease when virtual classrooms are preferred and that using computer and internet in education will help eliminating inequalities in education. Karasar (1999) underlined that the need for moving to big centers for education is now over, that the real world has entered the classroom, that the students have the equal right for participation, that access to course materials are now facilitated, that it is easier now for the student to learn with his or her own pace, that it is economical and that more assistance can be received.

Among the categories related to the metaphors used by the students were being useful, being good, offering variety and being basis-fundamental. These findings indicate that the perceptions of students on virtual classrooms and positive. There are many studies on the satisfaction and positive feedback of students on virtual classrooms and implementations (Arbaugh, 2000; Barreau, Eslinger, McGoff, & Tonnesen, 1993; Bolstad & Lin, 2009; Goulão, 2012; Yang & Liu, 2007).

Results identified in this study are individual participation in virtual classrooms are at peak level, virtual classrooms ensure information sharing and acquisition, create a sense of real environment and trigger readiness. Another result of the study is that virtual classrooms are a technologic system, can be administered distantly and are a disciplined setting. The purpose of designing virtual education is to create a "sense of real existence", in other

words to enable the individual to get into the psychology of really being present (Karasar, 1999). It has been stated in this study too that virtual classroom environments are considered and felt as real environments by students.

The metaphors stated by the students indicate that virtual classrooms have a characteristic of repeatability and being useful. There are many studies which refer to this characteristic and the benefit of virtual classrooms (Cronjé, 2001; Erturan, Çevik, Gürel, & Çağıltay, 2012; Jadhav, 2017; Karasar, 1999).

It was observed that student perceptions on virtual classrooms and implementations as enabling students to be active, ensuring their success, enabling them to freely express their ideas and be self-confident. Students are active in such environments (Cronjé, 2001). Virtual classrooms help focusing on the subject, increasing creativity, increasing participation, increasing success, enable instant communication, accessibility, access to rich sources, ensure a better interaction, helps the individual to better express oneself and enables easy information acquisition (Karasar, 1999).

It was observed that virtual classrooms support traditional education and facilitate teaching. This has been underlined in many studies other than this study (Erkan & Altun, 2003; Parker & Martin, 2010; Tiffin & Rajasingham, 1995).

Because virtual classrooms are classrooms created through distance education environments (Çınar et al., 2011), perceptions on distance education are important. In the study conducted by Kaleli-Yılmaz and Güven (2015), it was stated that a group of students generated negative opinions on distance education because it is ineffective, boring, un-interactive and a soulless way of education, because there is distraction due to the duration of the lessons and because there are technologic problems and a group of students generated positive opinions because it offers equal opportunities along with time and space independence. These results are in line with the results of this study stating that virtual classrooms are boring, lack in interaction, have time restriction and lead to negative thinking. In their study on distance education metaphors, Tuncay and Özçınar (2009) emphasized accessing to virtual classrooms everywhere and at any time and on freedom. These results are in line with the being free and space-time independence results of this study. Similarly Taş et al. (2016) underlined that there is a high number of people with positive perceptions due to their distance education experiences and that have at least a low amount of positive perceptions.

A group of students stated that they cannot become social in these environments. In the study conducted by Barreau, Eslinger, McGoff, & Tonnesen (1993), it was reported that there were several problems in information sharing and that some students were in the feelings of isolation. Parker and Martin (2010) stated that the traditional learning environments were comfortable and identified negative opinions related to lack of trust in virtual environments. These studies are in line with the result of this study on having negative opinions on virtual classrooms.

In this study, it was determined that the students performing the virtual classroom applications the most were the students in the fourth grade. In addition, it was concluded that the majority of female students in this class considered virtual classrooms to be equivalent to the real classroom environment. Male and third grade students think that virtual classrooms contribute more to education. However, it is seen that the third grade male students have more positive opinions.

Education is integrated with technology. This study will be useful in order to see more clearly the dimensions of virtual classroom applications' contribution to education. In addition, since the negativities experienced in virtual classroom applications are determined in this study, it will be ensured that necessary actions are taken to obtain high-level efficiency from such applications. Identifying student perceptions through metaphors has generated useful results with respect to using virtual classrooms more effectively in the field of education. Various other categories can be investigated or the study can be conducted on different student groups so as for this study to reach more detailed conclusions. Thus, perceptions of students studying in various departments can be identified and the contents can become more rich and common. By supporting face-to-face education, equal opportunity in education can be ensured and digital division will be prevented.

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Genişletilmiş Özet

1. Giriş

Eğitimde son teknolojilerini kullanabilen, zaman ve mekân sınırı olmayan, düşük maliyetli ve öğrenci merkezli yaklaşımlar yer almaktadır (Saral & Topçu, 2008). Özellikle öğretmen ve öğrencilerin aynı mekân ve zamanda olmasını gerektirmeyen uzaktan eğitim kavramı ile ön plana çıkan e-öğrenme günümüzde popüler olarak her sistemde kullanılmaktadır. Web tabanlı e-öğrenmenin büyük ölçüde adaptasyonu, ortak yönetim, öğretim, öğrenme, değerlendirme ve iletişimi kolaylaştırmak ve desteklemek için, sanal öğrenme ortamlarının gelişimini gerektirir (Livingstone, Kemp, & Edgar, 2008, p. 140).

Sanal sınıflar, mekan ve zamandan bağımsız öğrenimi gerçekleştiren interaktif çoklu-ortam uygulamalarıdır (Erkan & Altun, 2003). Eğitim sistemi içerisinde birçok yöntem-teknik, strateji kullanılmış, bilgi ve iletişim teknolojilerinin gelişimi ve değişen insan ihtiyaçları sebebiyle yeni öğrenme ortamları önem kazanmıştır (Yıldız, 2016). Sanal sınıfların eğitim faaliyetlerindeki etkisinin ne yönde olduğunu ve eğitimin niteliğini nasıl değiştirdiğini belirlemek sonraki eğitim-öğretim faaliyetleri açısından önemlidir. Bu yüzden öğrencilerin sanal sınıflarla ilgili görüşlerinin ve algılarının neler olduğunun tespit edilmesi önem kazanmıştır. Öğrencilerin algılarını, sanal sınıfların ve uygulamalarının niteliği etkilemektedir. Bir konuya dair algıların tespitinde metaforlar bir araç olarak kullanılabileceğinden (Fırat Durdukoca, 2017) sanal sınıflara yönelik öğretmen adaylarının algılarını belirlemede de en iyi yöntemdir.

Bu çalışmanın amacı, Bilgisayar Öğretimi Teknolojileri öğretmen adaylarının sanal sınıflara yönelik metaforik algılarını belirlemektir. Böylece öğretmen adaylarının sanal sınıfları nasıl algıladıkları metaforlar aracılığıyla ortaya konamaya çalışılmıştır. Bu amaç çerçevesinde araştırmaya ilişkin aşağıdaki sorulara yanıt aranmıştır:

1- Öğretmen adaylarının sanal sınıflara ilişkin sahip oldukları metaforlar nelerdir?
2- Öğretmen adaylarının sanal sınıflara ilişkin sahip oldukları metaforlar hangi kavramsal kategoriler altında toplanabilir?
3- Öğretmen adaylarının cinsiyet ve sınıf düzeyleri (2., 3. ve 4. sınıflar) değişkenleri açısından bu kavramsal kategorilere katılım düzeyleri nelerdir?

2. Yöntem

Bilgisayar Öğretimi Teknolojileri öğretmen adaylarının sanal sınıflara ilişkin algıları nitel araştırma desenlerinden fenomenoloji, veri toplama yöntemlerinden metaforların kullanılması ile gerçekleştirilmiştir. Metaforlar sayesinde çalışılan konu, durum, olgu ve olay hakkında sağlam, zengin bir sonuç elde edilir. Metaforlar farklı sözcüklerden oluşurlar, bunlar benzerlik ve farklılıklarına göre belirli tematik başlıklar altında toplayarak analiz edilirler (Yıldırım & Şimşek, 2011, p. 212).

Bu çalışma, Türkiye'de iki üniversitenin Bilgisayar ve Öğretim Teknolojileri Eğitimi (BÖTE) bölümünde öğrenim gören 2., 3. ve 4. sınıf öğrencileri ile gerçekleştirilmiştir. Araştırmanın örneklem belirlemesinde amaçsal örneklem yöntemlerinden ölçüt örnekleme kullanılmıştır. Araştırmaya 216 öğrenci katılmış; ancak bazı öğrencilerden alınan verilerin amaca uygun olmadığı tespit edilmiş ve değerlendirme dışı bırakılmıştır. Araştırmaya dahil olan 168 öğrencinin 87'sini erkek, 81'ini ise kız öğrenci oluşturmaktadır. Bu öğrencilerin 60'ı ikinci sınıf, 53'ü üçüncü sınıf ve 55'i dördüncü sınıftır. Araştırmada yer alan öğrencilere kişisel bilgilerinin sorulduğu ve "Sanal sınıf ……a/e benzer; çünkü ……." biçimindeki eksik bırakılmış bir cümlenin yer aldığı formlar dağıtılmıştır. Bu formlar aracılığı ile öğrencilerin sanal sınıflara ilişkin olarak geliştirdikleri metaforlar bilgisayar programları aracılığıyla listelenmiştir. Daha sonra listelenen bu metaforlar gruplandırılmıştır. Metaforların gerekçeleri göz önünde bulundurularak kategorize edildiler. Metaforlar kategorize edilirken literatürden de yararlanılmıştır. Ayrıca bu grup ve kategoriler iki ayrı öğretim üyesi ile de paylaşılarak gerekli uzman görüşü alınarak kategorilerin son hali verilmiştir. 37 kategori oluşturulmuştur. Bu kategoriler oluşturulma esnasında öğrencilerin cinsiyet ve sınıfta kodlanmıştır.

3. Bulgular

78 metafor ve bu metaforların gerekçeleri doğrultusunda 37 kategori meydana gelmiştir. Bu **kategoriler tekrar edilebilirlik, geleneksel eğitime destek, rahat bir ortam, gerçek sınıf-okul ortamı ile aynı olma, öğretimi kolaylaştırma, düşünceyi özgürce ifade edebilme, fiziksel uzaklık, mekan bağımsızlığı, sanal olma, öğrenci hazırbulunuşluğu, teknolojik bir sistem, farklı eğitim ortamları-alanları sunma, etkileşim ve iletişim, bilgi**

paylaşımı ve kazanımı, kolay erişebilirlik, çoklu multimedya ortamı sunma, aktif olma, sıkıcı olma, başarıya ulaştırma, özgüvenli olma, zaman-mekan bağımsızlığı, sosyal olamama, disiplinli bir ortam olması, etkileşimli ve eğlenceli olma, her yerde eğitim olanağı, özgür olma, ekonomik oluşu, faydalı olma, güzel olma, temel-başlangıç olma, katılımın sağlanması, gerçeklik sunma, uzaktan yönetme, etkileşim eksikliği, zaman sınırı olma, çeşitlilik sunma ve olumsuz düşünme şeklinde sıralanabilir.

Araştırma kapsamında yer alan öğrencilerin en fazla "gerçek sınıf-okul ortamı ile aynı olma", "sanal olma", "rahat bir ortam", "mekan bağımsızlığı", "etkileşim ve iletişim", "farklı eğitim ortamları-alanları sunma", "kolay erişebilirlik", "çoklu multimedya ortamı sunma" ve "her yerde eğitim olanağı" kategorilerine değindikleri belirlenmiştir. Ayrıca "gerçek sınıf ve okul", "hayali bir sınıf-ortam", "hayal", "facebook-sosyal ağlar" "rüya" ve "hayat" metaforlarını da öğrencilerin en fazla geliştirdikleri metaforlar olduğu tespit edilmiştir. "Gerçek sınıf-okul ortamı ile aynı olma" kategorisine ilişkin toplam 60 metafor öğrenciler tarafından geliştirilmiştir. Bu kategoriyi en fazla sanal sınıf uygulamasında bulunan dördüncü sınıfta öğrenim gören kız öğrencilerin benimsedikleri belirlenmiştir.

Sanal sınıfların ve bu tarz ortamların eğitim-öğretime sağladığı katkıları göz önüne getirecek şekilde öğrenciler metaforlar oluşturmuşlardır. Bu metaforların bulunduğu kategoriler ise "tekrar edilebilirlik", "geleneksel eğitime destek", "öğretimi kolaylaştırma", "öğrenci hazırbulunuşluğu" ve "katılımın sağlanması" şeklindedir. Erkek ve üçüncü sınıfta öğrenim gören öğrenciler daha çok sanal sınıfların eğitim-öğretime sağladığı katkılar çerçevesinde metafor oluşturdukları belirlenmiştir.

Öğrenciye kazandırdıkları açısından öğrencilerin sanal sınıflara yönelik oluşturdukları metaforları ele alırsak şu kategoriler oluşmuştur: "düşünceyi özgürce ifade edebilme", "aktif olma", "bilgi paylaşımı ve kazanımı", "başarıya ulaştırma", "özgüvenli olma" ve "özgür olma". Ayrıca bu erkek ve üçüncü sınıfta öğrenim gören öğrenciler diğer öğrencilere göre daha fazla bu yönde benzetmeler geliştirmişlerdir.

Sanal sınıf ortamlarının sunduğu "fiziksel uzaklık", "zaman ve mekan bağımsızlığı", "teknolojik bir sistem", "disiplinli bir ortam olması", "etkileşimli ve eğlenceli olma" kategorileri öğrenciler tarafından vurgulanmış ve bunlara ilişkin metaforlar oluşturulmuştur. Üçüncü sınıf ve erkek olan öğrencilerin diğer öğrencilere göre daha fazla bu yönde metaforlarda bulundukları ve sanal sınıfların fiziksel bir mesafeye, zaman ve mekan bağımsızlığına, teknolojik, disiplinli, etkileşimli ve eğlenceli bir ortama sahip olduklarını dile getirdikleri belirlenmiştir.

Araştırmaya katılan öğrencilerin sanal sınıfları benzetmelerinden dolayı oluşan kategoriler arasında "ekonomik oluşu", "faydalı olma", "güzel olma", "temel-başlangıç olma", "çeşitlilik sunma", "gerçeklik sunma" ve "uzaktan yönetme" de yer almaktadır. Bu kategoriler ile sanal sınıfların diğer başka özelliklerine de öğrenciler tarafından değinilmiştir.

Olumlu yönde olan metaforların yanında olumsuz nitelik taşıyan metaforlarda az da olsa öğrenciler tarafından oluşturulmuştur. Bunlar "sosyal olamama", "etkileşim eksikliği", "zaman sınırı olma", "sıkıcı olma" ve "olumsuz düşünme" kategorileridir.

4. Sonuç, Tartışma ve Öneriler

Öğretmen adaylarının sanal sınıflara ilişkin edindikleri algıları metaforlar aracılığıyla yansıtmaya çalışılan bu çalışmada, gerçek sınıf-okul ortamı ile sanal sınıfların aynı olduğunu düşünen öğrencilerin sayısının fazla olduğu belirlenmiştir. Sanal sınıflarda var olan özelliklere öğrencilerin yaklaşımları ile gerçek ortamdaki yaklaşımlarının benzer olması ve öğrenci-öğretmen etkinliklerinin yüz yüze sınıflardaki etkinliklerle örtüşmesi de (Cronjé, 2001, p. 254) bunun bir göstergesidir.

Sanal sınıflarla ilgili en fazla sanal olma, rahat bir ortam olma, mekan bağımsızlığı sunma, etkileşim ve iletişimin olması, farklı eğitim ortamları sunma, kolay erişebilirlik, çoklu multimedya ortamı sunma ve her yerde eğitim olanağı sunma özellikleri dikkate alınarak kategoriler oluşturulmuştur. Sanal sınıf uygulamaları etkileşimli ve görsellik gibi çoklu ortam bileşenlerinin yer aldığı bir öğretimi sunmaktadır (Erkan & Altun, 2003; Tiffin & Rajasingham, 1995). Öğrencilerin sanal sınıflara yönelik zaman-mekan bağımsızlığı, fiziksel uzaklığın olması, ekonomik olma, etkileşimli ve eğlenceli olma özelliklerine değindikleri saptanmıştır. Sanal ortamlar daha çok etkileşim ve senkronizasyon sağlamaktadır (Parker & Martin, 2010).

Öğrencilerin oluşturdukları benzetmelere ilişkin kategoriler arasında faydalı olma, güzel olma, çeşitlilik sunma ve temel-başlangıç olma özellikleri de yer almaktadır. Bu bulgulardan da öğrencilerin sanal sınıflara yönelik

algılarının olumlu olduğu sonucuna ulaşılmaktadır. Sanal sınıflara ve uygulamalarına ilişkin öğrencilerin memnuniyetini ve olumlu geri bildirimleri olan birçok çalışma mevcuttur (Arbaugh, 2000; Barreau, Eslinger, McGoff, & Tonnesen, 1993; Bolstad & Lin, 2009; Goulão, 2012; Yang & Liu, 2007).

Bir grup öğrencide,s bu ortamlarda sosyal olamadıklarını belirtmişlerdir. Barreau, Eslinger, McGoff, & Tonnesen (1993) yaptıkları çalışmalarında bilgi paylaşımında bazı problemlerin yaşandığını ve öğrencilerin izolasyon hissiyatı içinde olduklarını rapor etmişlerdir. Parker ve Martin'de (2010) geleneksel öğrenme ortamlarının rahat olduğu ve sanal ortamlarda güven eksikliği yaşandığı yönünde bazı olumsuz sonuçlar tespit etmişlerdir. Bu çalışmalar, araştırmanın sanal sınıflara yönelik olumsuz düşüncelere sahip olma sonucu ile örtüşmektedirler.

Bu çalışmada, sanal sınıf uygulamalarını en fazla gerçekleştirenlerin dördüncü sınıfta öğrenim gören öğrenciler olduğu tespit edilmiştir. Ayrıca, bu sınıfta öğrenim gören kız öğrencilerin çoğunluğunun, sanal sınıfları gerçek sınıf ortamı ile eş gördükleri sonucuna da ulaşılmıştır. Erkek ve üçüncü sınıfta öğrenim gören öğrenciler, sanal sınıfların eğitim-öğretime daha çok katkı sağladığını düşünmektedirler. Bununla beraber, üçüncü sınıfta öğrenim gören erkek öğrencilerin daha olumlu görüşlere sahip oldukları görülmektedir.

Eğitim-öğretim teknoloji ile entegre olmuş bir durumdadır. Sanal sınıf uygulamalarının eğitim-öğretime sağladığı katkının boyutlarını daha net görmek adına bu çalışma yararlı olacaktır. Ayrıca bu çalışmada sanal sınıf uygulamalarında yaşanan olumsuzluklarda belirlendiğinden bu tarz uygulamalardan üst düzey verim alınması için gerekenlerin yapılması sağlanacaktır. Sanal sınıfların eğitim-öğretimde daha verimli kullanılması anlamında öğrencilerin algılarının metaforlarla belirlenmeye çalışılması yararlı sonuçlar oluşturmaktadır. Bu çalışmanın daha detaylı sonuçlara ulaşmasında farklı kategorilerden yararlanılabilir ya da farklı öğrenci gruplarına da uygulanabilir. Böylelikle birçok alanda eğitim gören öğrencilerinde algıları belirlenmiş ve içerikler daha da zenginleştirilebilir ve yaygınlaştırılabilir. Yüz yüze eğitimin desteklenmesi, eğitimde fırsat eşitliği sağlanabilir ve dijital bölünmenin önüne geçilebilir.

ETİK BEYANNAME

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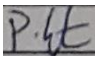

Pınar ERTEN

Araştırmanın Sorumlu Yazarı