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# FOURTH GRADE PRIMARY SCHOOL STUDENTS' PERCEPTION OF DIGITAL CLASSROOM AND DIGITAL TEACHER [1]

## İlkokul 4.Sınıf Öğrencilerinin Dijital Sınıf ve Öğretmen Algısı

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## ABSTRACT

The purpose of this study is to explore fourth grade primary school students' perceptions of digital classroom and teacher through the pictures that they drew. This study was carried out in the spring term of 2017-2018 academic year. A total of 48 fourth grade primary school students participated in the study from the city center of Bayburt. The interpretive content analysis of the qualitative research methods was utilized. The data was collected through draw-and-tell method. During the course of data collection, participating students were asked to draw a picture about "digital class and teacher in your dreams" and explain their drawings. With respect to the analysis of the data obtained from the study, it is evident that students gave aliveness to the items in the classroom by adding different features. Some students added a button to facilitate the use of items in the classroom or a sound system that can react to audio. Regarding the analysis of the drawings of students, it is observed that primary school students generally paid attention to the robot teacher in the drawings of digital teachers, and the robot teacher had buttons in various colors and features. Students expressed their digital teachers as teachers who do everything instantly and do what they say. In addition, they have attributed features (such as flying, color scattering, lengthening and shortening, arms stretching g everywhere, and hearing every sound) to digital teachers that an ordinary individual cannot have. The drawings reflected imaginary teachers with the qualities highlighting points which students needed for themselves, their classes and schools. Students are required to adapt to the digital world at a younger age. Thus, it can be concluded that digital activities should be performed in the arrangement of classroom setting, in teacher training, and in primary school curricula.

**Key Words:** Fourth grade primary school students, perception of digital classroom, perception of digital teacher.

## ÖZET

Bu çalışmanın amacı ilkokul 4.sınıf öğrencilerinin hayallerindeki dijital sınıf ve öğretmen algılarını çizdikleri resimler yoluyla incelemektir. Çalışma 2017-2018 eğitim öğretim yılı bahar döneminde gerçekleştirilmiştir. Çalışmaya Bayburt il merkezinden dördüncü sınıfta öğrenim gören 42 öğrenci katılmıştır. Nitel araştırma yöntemlerinden yorumlayıcı içerik analizi yöntemi kullanılarak gerçekleştirilen çalışmanın verileri, çiz-ve-anlat tekniği ile toplanmış, verilerin toplanması sırasında, çalışmaya katılan öğrencilerden "hayalinizdeki dijital sınıf ve öğretmen" ile ilgili bir resim çizmeleri ve çizdikleri resimleri açıklamaları istenmiştir. Çalışmadan elde edilen veriler analiz edildiğinde öğrenciler bulundukları sınıfta yer alan eşyalara farklı özellikler katarak canlılık kazandırmaktadır. Bazı öğrenciler sınıftaki eşyaların kullanımını kolaylaştırmak için düğme yerleştirmiş veya sese tepki verebilen ses sistemi eklemiş. Öğrenci çizimleri incelendiğinde, ilkokul öğrencilerinin dijital öğretmen çizimlerinde genellikle robot öğretmene yer verdikleri ve robot öğretmenin çeşitli renkler ve özelliklerde düğmelere sahip olduğu görülmüştür. Öğrenciler dijital öğretmenlerini her şeyi anında yapan ve her dediklerini yerine getiren öğretmen olarak ifade etmektedirler. Ayrıca dijital öğretmenlere normal bir insanın sahip olamayacağı özellikleri (uçmak, renk saçmak, uzayıp kısalmak, kollarının her yere yetişmesi ve her sesi duyması gibi) yüklemişlerdir. Çizimler öğrencilerin kendileri, sınıfları ve okulları için ihtiyaç duydukları noktaları ön plana çıkaran niteliklere sahip hayali öğretmenleri ortaya çıkarmaktadır. Öğrencilerin daha küçük yaşlarda dijital dünyaya adaptasyon sağlamaları gerekmektedir. Bu yüzden hem sınıf ortamının düzenlenmesinde hem öğretmen yetiştirmede, hem de ilkokul ders öğretim programlarında dijital etkinliklere yer verilmesi gerektiği söylenebilir.

**Anahtar Kelimeler:** İlkokul 4.sınıf öğrencisi, dijital sınıf algısı, dijital öğretmen algısı.

[1] Bu çalışma 17. Uluslararası Sınıf Öğretmenliği Eğitimi Sempozyumu'nda (10-14 Nisan 2018) sözlü olarak sunulan bildirinin genişletilmiş halidir.

## 1. INTRODUCTION

Painting is a language of expression through which the child reflects his/her inner world. Children attempt to demonstrate how they perceive the outside world by painting. While painting, the child both tries to transfer his/her feelings and thoughts or observations to the opposite side, and needs to choose the colors, formats and lines by himself/herself in order to convey it (Malchiodi, 2005). The painting facilitates communication with the child and also helps us understand the experiences that the child has experienced (Artut, 2002). By means of painting, children organize and interpret their perception of the outside world with their own thoughts (Belet & Türkkan, 2007). Thus, imagining their own environment and the characteristics of it with their own perceptions, children are able to illustrate (Hague, 2001; Ring, 2006). If the pictures are well interpreted and analyzed, it is likely to learn about the development of children (Yavuzer, 1997).

The child reflects the product (painting, drawing, etc.), which is put forth through synthesizing the environment in different ways, in a good way without any concern or doubt. In the extant literature, there are studies in which children's drawings on different topics are investigated and discussed. According to the distribution of the studies; the following ones are listed as; mythological drawings (Pehlivan, 2008), image of scientist (Buldu, 2006; Oğuz, 2007; Rodari, 2007; Türkmen, 2008), perception of health concept (Rijey & Van Rooy, 2007), perception of European Union (Belet & Türkkan, 2007), clues about family life (Türkkan, 2004), perception of first holy ceremony in church (Stokrocki & Samoraj, 2002), perception of nation (Hague, 2001), image of mathematician (Picker & Berry, 2000).

The studies reveal that there needs to be studies about how children perceive and understand digital classroom and teacher in Turkey. In that sense, this study is carried out to investigate the classroom and digital teacher perceptions of primary school students through the pictures they draw. The study will contribute to the knowledge of classroom education as well as the results obtained from the study will be valuable in understanding what primary school students think about how technology can be reflected to the classroom and teacher, in Turkey.

### 1.1. Purpose of the Study

The main purpose of this study is to examine fourth grade primary school students' perceptions of digital classroom and teacher through the pictures that they draw. Depending on this main objective, the study sought to answer the following questions:

1.How do fourth grade primary school students reflect their perceptions of digital classroom and digital teacher in their paintings?

2.What are the similarities and differences between the perception of the digital classroom and the teacher in the pictures of fourth grade primary school students and their written and verbal views?

## 2. METHOD

In this study, qualitative design was employed. In qualitative researches, perceptions and cases are presented in their natural settings with an approach of realistic and holistic manner (Şimşek & Yıldırım, 2004). Phenomenology, which is a qualitative research design, was used. Phenomenology is a research design that aims to highlight perspectives, perceptions, and experiences (Ersoy 2016). Phenomenology was the design of choice in this study, as the aim was to determine the digital classroom environment and teacher and how the primary school students interpret their own creative ideas based on their experiences.

### 2.1. Participants of the Study

Selected through convenience sampling technique on voluntary participation of the respondents, the sample of the study is comprised of 48 fourth grade primary school students from Bayburt city center in the academic year of 2017-2018. The rationale behind including less number of students in the study is to explore the subject in depth. Since qualitative research has no generalization concerns and has allowed in-depth analysis, this approach has been adopted. The research is limited to the findings obtained from the study group. The distribution of primary school students by gender is displayed in Table 1.

**Table 1.** Distribution of Participating Students by Gender

| Demographic Properties | | f | % |
|---|---|---|---|
| Sex | Female | 23 | 47.92 |
| | Male | 25 | 52.08 |

### 2.2. Data Collection Tool and Procedure

The study was conducted in the spring term of 2017-2018. After taking required permissions, the researcher went to the selected primary schools and informed the administrators and teachers about the study. After the briefing, an implementation plan was prepared with school administrators and classroom teachers, and the issue of when and how to administer the measurement tool was agreed upon. Students were asked to draw pictures illustrating the digital classroom and the digital teacher. The students who participated in the study explained their drawings in their paintings. The implementation was carried out in two class hours (80 minutes).

### 2.3. Data Analysis

The visual and written materials representing the digital classroom and digital teacher drawings of the students constitute the data of the study. The obtained data were analyzed using interpretive content analysis method, which is one of the qualitative data analysis approaches (Ball & Smith, 1992; Banks, 2001). Interpretive content analysis includes the classification and identification of themes, topics and cases in visual and written items obtained from the study (Giarelli & Tulman, 2003).

A qualitative data analysis program was used in the process of reducing and arranging the data obtained from the study. The data were re-examined after each arrangement and the process of reducing the data continued throughout the analysis. The organization of the data set proceeded as a form of coding and note-taking, depending on Miles and Huberman model. After examining all the pictures through overall observation, all the items in the pictures were identified as the codes of the study. Moreover, the process of note-taking has started with the analysis of the researcher. During the analysis, each new code has been added constantly. The codes were collected under the specified themes and appropriate models were created. By this means, the concrete data was tried to be abstracted, the data was made visible and the conceptualization was simplified. Identifying the logical predisposition among the data, the researchers reviewed the created themes together with the codes. Besides that, another researcher who is an expert in the field of classroom education, analyzed the data with the same procedure. The reliability of the study was calculated through the formula of Miles and Huberman (1994); (Reliability =consensus/consensus + dissent x 100). The consistency of the codes done by two different experts was found as 82 % in total. The data obtained from the study were categorized by frequency analysis.

## 3. FINDINGS

As a consequence of the analysis of the data obtained from the study, in the drawings of primary school students, the digital classroom and teacher in their dreams were examined under two headings. When the findings obtained under both headings are evaluated, the model has been created in order to make it more comprehensible by visualizing the results of the items included in the drawings as well as the extraordinary features they have acquired. As depicted in the model (Figure 1), digital classroom perceptions of fourth class primary school students can be grouped under four main categories: objects reflecting human property, objects reflecting technological property, robots and flying objects.

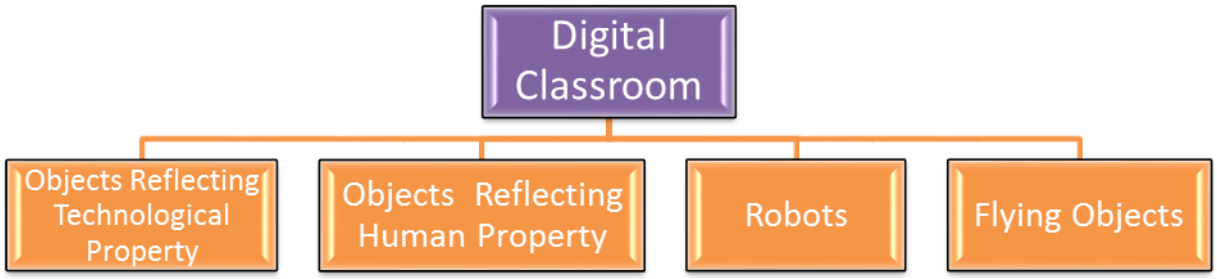


**Figure 1.** Digital Classroom Perceptions of Students

Some of the students participating in the study tried to attribute animation to the items through adding different features in the classroom, some of them tried to give technological designs to them, some of them just developed robots that will do some work, and finally, some of them emphasized that these items could move very quickly by getting all of them able to fly.

Research findings were analyzed according to the four themes identified in content analysis: 1) Objects Reflecting Human Property, 2) Objects Reflecting Technological Property, 3) Robots, 4) Flying Objects.

***1) Objects Reflecting Human Property:*** Once the features of the objects having human characteristics in the paintings were examined, it was observed that the following ones were noted as "the goods have their hands", "the goods have their arms", "the goods speak" and "the goods carry other animation characteristics".

Examples associated with the sub-theme of objects reflecting human property from the explanations of the students about their drawings are as follows:

"The smart board has the technology to talk and write something; talking of my lamps; talking of my desk; talking of my hanger, taking coats, and hanging them; my door's having hand and talking; my closet's putting books and talking." Naz.

Bookshelf: Holding the books that we read, and when we clean them nicely the books become very happy; Smart board: Being able to speak, playing games and videos whenever it desires, and becoming very happy; Door: Seeing people and opening itself through the hand contact of everyone and becoming very happy; Lamp: At school, when people were studying at dark, you scream 'fire, fire' and the lamp switches on; Dashboard: If you want to see a photo of your friends; Dashboard!, I want to see a photo of my friends" Bayram.

"The smart board is like alive, talking to us, laughing, crying." Serap.

"The bookshelf gives me the book that I want, and it does the homework with one hand. It gives me the eraser and my pencils whenever I want." Arif

***2) Objects Reflecting Technological Property:*** With respect to the examination of the properties of the objects reflecting technological features in the pictures, the "buttons", "touch or fingerprinting readers", and "sound systems" are noteworthy.

Examples of students' drawings about the subheading of the objects reflecting technological property are as follows:

"I'm having a hard time while opening the cupboard, so I put a button on it. Features, these are for avoiding the falling of the books, for avoiding the breaking of windows (glasses). I put a button on the door because it won't be difficult to open, I added the features in order to open it easily, I added a button to the table because my ironing board becomes dirty, I want to add a broom cleaning, the properties of which clean my desk. I put a button on the window to be opened easily, I put a button to turn it off, as well. I added a smiling face for my desk, because I will put eraser and pencil sharpener to the eyes, and I added a smiling and unhappy face for my smart board because I wanted it to look beautiful." Emine

"Smart board: you say what you want by talking and it does what you want; Tables: when you press one button, the bookshelf opens; on the other button, the table is divided into two halves; Door: the door opens by pressing the button. Hanger: when the hanger is full, you press the button, and when you want to get your coat, you draw the picture of your coat and it comes." Muhammed Ali

"When you watch something from a smart board, the curtains turn off by itself instead of our standing up again; when the burglar wants to open the cupboard, it just opens with my fingerprints; As it is so that we close it after watching something from the smart board, and it turns on automatically instead of our standing up; or when the clock breaks downs and mends by itself." Duygu

"Smart Board: Once we press the button of the smart board, it is erased. Pressing the other button, it is written. Door: I say 'open', opening; I say 'close', closing. Table: pressing a button, the drawer comes out; pressing the other button, the drawer closes. Hanger: I press the button and the coats are being hung. Clipboard: Pressing the button, the papers are being hung. Bench: Pressing the button of the bench, opening; pressing the button again, turning off. Lamp: I say the lamp 'close', closing itself. Window:

Pressing the window button, it opens; pressing it again, turning off. Bookshelf: Pressing the button of it, it gives me a book. Plug socket: Pressing the button, it goes away." Fahri

***3) Robots:*** Examining the required qualities of the robots in the pictures and what they serve, the noteworthy ones are "what the health care worker should do", "works that are difficult for him", and "do whatever they want".

The following are examples related to the "robots" sub-title from the explanations of the students about their drawings:

"Robot: let's say the robot, 'sweep the floor' and it sweeps." Kerim

"Robot's feature: Robot brings whatever you want, for example, food or go and turn it off, that's it." Ayşe

"Robot: It does what I say." Fahri

"The robots hide and sleep at night, and then when the burglar comes in, the robots come out, then they catch the thief. They press the book, the interrogation room opens, they question him/her, they leave the thief, and then in the morning, they say to the microphone whether someone came. The robots respond, then they are hiding immediately when teacher comes. The cameras are hiding, too. That's it (hiding places are the interrogation room)." Enes

"I love my teacher very much. I want it (robot) to help my teacher. There should be robot in class. Robot: it does what we want in class, it helps everything." Arif

***4) Flying Objects:*** Examining the required qualities of objects having fly characteristics and involved in the paintings, the noteworthy ones have the purposes like "taking place in the air", "safety" and "teaching".

The following are examples related to the "flying objects" sub-title from the explanations of the students about their drawings:

"The desks, cabinets and boards are flying. Tables are fully automatic. Cabinets and desks are encrypted. You write "which course will be prepared" on the writing section of the cabinets, and the books come out. The floors move by its own; the door opens without pushing the button." Nurefşan

"Flying desks and tables, on digital tablet desks, Maraş ice cream maker, child hand-held elevator, smart board with 2-sided TV, flying water slide, special flying shoes for teachers, pizzerias, seller robots, talking door, digital break-time bell, Opening six lamps only through two sockets, colorful pizza." Elifnur

"Flying machines give books to children, flying machines teach lessons to children, the super smart board shows cartoons to children. It's controlling it from underneath. The flying shoes take the kids where they want, the door opens automatically, the flying cameras control the whole place." Salih

"Everything in class flies. It's very fast and it teaches everything without wasting time." Metehan

Examples of other expressions of students' digital classroom perceptions are as follows:

"The alien who fixed the books, the alien who swept the floor, the alien who changed the television." Rabia

"There are special seats for my disabled friends in the class, there are digital desks, there are digital hangers next to each desk, there are desks in the air." Beyzanur

As displayed in the model (Figure 2), fourth year primary school students' perception of digital teacher can be grouped under three basic headings, "Robot teacher", "teacher with digital characteristics" and "desired type of teacher".

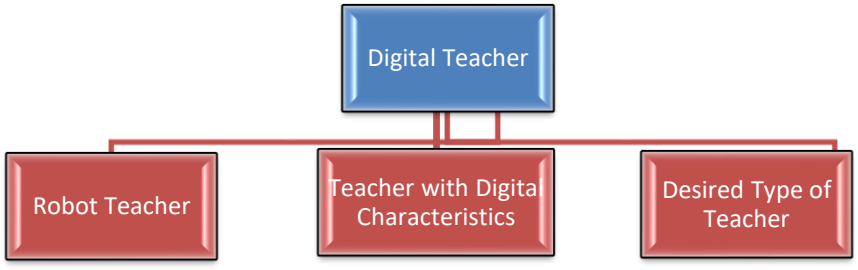


**Figure 2.** Students' Perception of Digital Teacher

Some of the students who participated in the study tried to add different features to their teachers, some of them tried to attribute completely technological features to their teachers, some of them emphasized that teachers could move very quickly through giving flying ability to all of their teachers.

Research findings were analyzed according to three themes identified in content analysis: 1) Robot Teacher, 2) Teacher with Digital Characteristics, 3) Desired Type of Teacher.

***1)Robot Teacher:*** Examining the characteristics of the robot teacher, which was discussed in the pictures, the following ones were observed as "having colored buttons", "something coming out of them" and "game".

Examples of students' drawings associated with robot teacher subheading are as follows:

"Pressing the button, the fruit comes out. When you press the dark blue button, it turns into a smart board. When I press the light green button, it can give me what I want. When you press the pink button, you can play games. When you press the brown button, music plays. When you press dark green, it can become the game console. When you press the purple button, it plays guitar. When you press the black button, it can be clown. When you press the blue button, it can give us a video lesson. When you press the yellow button, an intelligence game can get out of it." Hünkar

"When you press the red button, the digital teacher cleans the board and writes; when you press the yellow button, the digital teacher shoots the needle, gives me a book and I read. He/she gives me materials, gives me toys and I play; he/she opens cartoons, songs; gives me information. He/she opens a divine, loads a movie." Fahri

"Friends!, my digital teacher has 13 buttons, 4 pink buttons, 2 yellow buttons, 2 green buttons, 1 purple button, 1 blue button, 1 Red Button, and a huge screen. Pink buttons are useful. The 1st pink button is for doing anything with magic; the 2nd pink button is for doing what it wants; the 3rd pink button speaks like a human; the 4th pink button is for teaching someone else's lesson to children rather than its own lesson. The 1st yellow button helps it to fly in the air; the 2nd yellow button does what we want it to do. The 1st green button is that propellers at both hands cool us down; the 2nd green button is used for color scattering. The 1st purple button paints. The 1st blue button is for going and coming back quickly; and the 1st red button is for not making it angry much and not letting it look sideways on its big screen." Semiha

"The robot has four arms; there are smart boards, books and whiteboard in the robot. The robot speaks, flies, has internet, has a place of tape; there are speakers inside the robot, there are organs in the robots, there is a place of garbage in the bot, there is a lot of recycling in the robot, there are clocks, there are bells, the robot shuts down and opens, it works with solar power, the robot is guaranteed for 10 years." Muhammed Ali

"The kid next to the teacher presses the buttons. Red button, teacher becomes angry. Green button is for talking to the teacher. The ones who want to play game, presses the blue button, and then the game starts. The orange button opens the trip-room, pink button is that teacher says yes for everything; teacher is superpower and magic wand; the teacher can fly, robot is helper." Ceren

"All subjects are recorded in the head of the digital teacher, the buttons on the digital teacher's arm can reach everywhere, so you don't have to stand up and write, the digital teacher's foot can get longer and shorter, the wheels can erase anywhere, and can quickly reaches where it wants; the teacher's big ears can hear all voices over the class, so s/he can warn them." Meryem

***2) Teacher with Digital Characteristics:*** Once the qualifications that the digital teacher has to possess which were discussed in the pictures were examined, the followings were observed as "fast" "fun teaching" and "shining".

Examples of students' drawings associated with Teacher with Digital Characteristics subheading are as follows:

"My digital teacher can do self-research, my digital teacher can quickly do experiments while teaching, s/he can rapidly go anywhere, my digital teacher can enter the password in a snap, s/he can take his own copy, s/he can teach me what I want in an eye wink, s/he can bring fruit vegetables at once by pressing his/her buttons, my digital teacher can change the color of the clothes, s/he can do homework once you tell a homework. S/he can ring a bell." Naz

"The digital teacher gives you a book from the orange place, gives you pictures from the bottom, plays music in the middle, there's a movie upstairs, it gives you homework in the blue place, there's a CD music on the left, his/her shoes are flying, the head comes out, I see everything in the head, his/her eyes are growing from the blue point." Muhammed Ali

"Our digital teacher pulls things out of her stomach, flies and rides us, turns into everything, runs fast and takes us round, does what we want, sees people's germs with glasses in his/her eyes, can stretch his/her arms away, collects everything at lightning speed, makes sugar and gives us, changes color. " Kerim

"My digital teacher's head is triangular and very light-spreading. Pressing a button, the eyes are changing. His/her feet become triangular and square. His/her legs get both shorter and longer. S/he's doing everything I want. Pressing a button, S/he's flying. There's no need for board, there is a board in the belly and s/he writes without seeing. S/he radiates light from her/his body. S/he can't talk at all, but s/he's talking about the tablet in her stomach." Nisanur

***3) Desired Type of Teacher:*** With respect to the examination of the qualifications that the desired type of teacher has to, the followings were identified as "the one who doesn't give homework", "the one who doesn't get angry", "the one who entertains", and "the one who understands us"

Examples of students' drawings associated with Desired Type of Teacher subheading are as follows:

"Features, travelling, getting us play games, lecturing, getting us read, writing, opening film, making us go out, experimenting. My digital teacher's eyes are illuminated because when the lights are gone, they light up and we don't stay in the dark. I put the switches on (it) because one is for switching on, one is for darkening, and also I put a battery. The small one is becoming big, running, and making us doing sports. S/he takes us to the park, takes us around, does what we say. S/he's not mad at us, s/he makes us laugh. S/he's helping us, s/he's not punishing us, S/he's being nice to us." Emine

"My digital teacher can get stuff out of his hands, s/he can turn him/herself off, s/he get something out of the screen, s/he can get a book, s/he can show the curriculum, s/he can understand who's talking, s/he can show the multiplication table, s/he can play songs, s/he can show homework, s/he can get a first aid kit." Birgül

"My teacher takes us on a trip every day and understands everything, my teacher flies, he can extend his arm any time he wants." Zeynep

S/he doesn't give homework every night, s/he gets us out when we want, and s/he gets us to watch a movie in the smart board when we want." Duygu

## 4. RESULTS, DISCUSSIONS AND SUGGESTIONS

In this study, in order to explore the digital classroom and teacher perceptions of fourth grade primary school students, the methods of drawing picture and interpretation of the drawings, which have not been conducted in the extant literature, were administered for the fact that that students could comfortably express their views on the respective subject. This interpretation method makes it easier for students to express their perceptions in a classroom environment, in conjunction with the reasons for the characteristics and situations that the teacher needs to have. This method is very popular with students, as well as in previous studies on different subjects with drawing, cartoon drawing, mind map, etc. (Ayva, 2010).

In their drawings which could not be drawn, they expressed them through writing and additionally noted them while explaining their pictures. It is witnessed that students who were asked to draw pictures of digital classroom and digital teacher, mostly drew the pictures of items having human features and robotic teachers. Besides these, the following ones are listed in an order; technological objects for the digital classroom, robots, and watching flying objects; for the digital teacher, the robot teacher, the teacher with the digital features, and the desired type of teacher.

In comparison with the existing literature, it is evident that students would like to take advantage of digital technologies during the teaching of the courses (Özerbaş & Erdoğan, 2015; Gül & Yeşilyurt, 2011). In terms of enabling and motivating students: the following issues are reported as easy access to needs (Çağıltay et al., 2007); using digital game (Bakar et al., 2008); making use of video technologies (Arıoğlu & Uzun, 2008). It is inevitable to use new technologies to create a classroom laboratory in Turkey where STEM applications are stimulated.

The opportunities that students can quickly get access to information and use similar activities outside school time through virtual classroom technologies, can be enhanced.

It will be useful to include mobile technologies in this application because it will support educational activities outside the digital classroom. In addition, the issue whether the time spent outside of the school has been effectively used, should certainly be followed.

For this reason, in order to ensure that students can perform their digital classroom activities in a harmonious manner, the support of parents and the training of parents on this matter are important.

Drawing upon this study, the following suggestion can be made:

- ✓ In future research, gender, class level, use of technological devices, level of parents' education, social and cultural differences can be investigated to understand how students change their perception of digital class and teacher.
- ✓ Similar studies can be repeated through different samples and their results can be compared.
- ✓ In addition to studies on the learner of the digital age, studies should also be made about teachers and their families. The physical conditions of schools must also be established in accordance with the needs of the student.

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