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## An Investigation of Teacher Candidates' Perceptions About Physical Dimension of Classroom Management

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**Abstract:** The purpose of this research is to investigate teacher candidates' perceptions about the physical dimension of classroom management. A hundred two 3rd year students at the Primary School Education Department of a state university were instructed to visit a primary school and to observe a classroom in terms of its physical dimensions. The students were guided both to tell about the actual classroom they observed and to tell about their dream classroom. Thus, this study aims to discover students' perception on actual classroom and their construction of dream classroom in terms of physical characteristics. The research findings revealed that most of the teacher candidates mentioned their dream classroom according to the actual classroom and only one third of them designed the classroom according to their own dream classroom characteristics. Also teacher candidates did not mention the affective influences of physical layouts and environments on individuals.

**Keywords:** *Physical dimension, teacher candidate, classroom management.*

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### Introduction

The classroom is a socio-psychological and structured educational environment which takes an important place in students' lives (Proshansky & Fabian, 1987). Therefore, the classroom must make the student feel its difference from the other rooms, guide them to positive behaviours, represent a safe and peaceful environment and reflect what it is related to (Cardellino, Leiringer, & Clements-Croome, 2009). The classroom is a much more comprehensive place than desks, chairs, books and documents (Martin, 2006, in Hand, 2014). Primarily, the classroom should create an effect as a student-friendly atmosphere (Cardellino et al., 2009). The experiences of students about the school building are generally limited with their points of view about the classroom in which they are educated (Proshansky & Fabian, 1987). The suitable physical organization of the classroom not only affects students' self-esteem and academic performance directly but also contributes to make both students and teachers become aware of their own efficiency (Ulrich, 2004). Well planned classroom environments also influences students' potential to discover (Aktas Arnas, 2016). Furthermore, there is a strong belief about the effectiveness of positive classroom perception on the development of students' learning skills (Cardellion et al., 2009).

According to Gibson (1986), students are naturally active learners and they make inquiries by interacting with the environment. Where and in what kind of setting students learn is more important than the programme which is implemented. The environment affects students' perceptions and learning behaviours. Especially, heat, lighting, aeration and the lack of sound insulation-acoustics have plenty of negative effects on concentration and general mental skills (Gillen, Wright, & Spink, 2011). Accordingly, the organization and the design of the classroom affect students' cognitive, affective and kinetic characteristics. (Maxwell, 2003; Ulrich, 2004). Quite a few researches have drawn attention to social factors in the learning environment but the effect of physical variables on learning and academic achievement have been ignored. For this reason, physical variables have mostly been neglected in educational plan (Young, Green, Roehrich-Patrick, & Gibson, 2003). Whereas, it can be said that physical variables in the classroom environment have significant effects on learning (Young et al., 2003). It was determined that students try to catch some clues by means of the physical variables in the learning environment so as to remember what they have learnt before when they take exams in the classrooms in which they obtained knowledge (Baker & Bernstein, 2012).

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The classroom environment, physical characteristics and its structure impress both learning-teaching process and the performances and behaviours of students (Barr & Tagg, 1995; Barrett, Zhang, Davies, & Barrett, 2015; Clark, 2002; Dittoe, 2002; Hannafin, Land, & Oliver, 1999; Horne, 1999). It was designated that especially the heat, lighting, colour, aeration and the control of noise have positive impacts on concentration and cognitive competences (Higgins, Salon, Duvar, Woolner & McCaughey, 2005; Read, Sugawara & Brandt, 1999). Besides, the physical characteristics of the classroom influence the behaviours and attitudes of the students and the relationship between the teacher and the student at a significant level (Kasser, 2007; Killeen, Evans & Danko, 2003; Knight & Noyes, 1999; Umeda & Deitz, 2011; Weinstein, & David, 1987; Weinstein, 1979; Wingrat & Exner, 2005). Classroom environments also affects practice of teachers (Horne-Martin, 2002). Therefore; it is really important to create a physical environment that will prevent the occurrence of developmental, social and affective problems and will support learning as the students participate in the learning activities more when they feel themselves in a learning environment in which they find themselves comfortable, safe and they think that their learning needs are satisfied, so the main important thing is the students' positive perception of the physical environment (Kasser, 2007).

Consequently, the classroom's physical structure in which the students' experiences at school are formed and structured for years and the knowledge, skills, attitudes and behaviours which the students are expected to obtain by means of the implemented programme in this environment are not independent from each other (Proshansky and Wolfe, 1975; Proshansky & Fabian, 1987). Inadequacy of awareness towards physical needs in the classroom environment can interfere with the functioning of the classroom (Horne Martin, 2002). Some studies found that attention is generally given to lesson plans yet little attention is given to space planning (Proshansky and Wolfe, 1975; Proshansky & Fabian, 1987). Similarly, OECD (1988; cited in Horne-Martin, 2004) report that "teachers are responsible for spaces for teaching and learning and should attempt to make them exciting and stimulating and be prepared to develop them. They also mentioned a lack of awareness of the potential of an environment". Teachers, however, have the ability to influence a wide range of environmental qualities within their classroom such as personalization and ownership and providing places for social interaction (Horne Martin, 2002, 2004).

Mostly, classrooms' layout and shapes look like fixed entities for teaching through traditional methods. However; there are multiple teaching methods demanding space and different arrangement. Using other teaching methods, thus in a traditional classroom depends on the ability awareness and the imagination of teachers to be adaptable.

When the related literature in Turkey was considered, some studies dealing with the classroom's physical condition and organization (Karacali, 2006; Tekindal & Sonmez, 1998), investigating the roles of seating organization and teacher (Ersoy, 2005), revealing the effect of the classroom's physical characteristics on the teaching process (Sahin Sak, Sak & Tuncer, 2013) and observing the classroom's physical structure in terms of the development of cognitive characteristics (Tuncel, 2008) were found. However, no studies dealing with the teacher candidates' points of view were found. Through this research, it was aimed to investigate how the classrooms observed by the teacher candidates were perceived in terms of the physical dimension of classroom management. By doing so, the teacher candidates were expected to find opportunities to analyze sophisticatedly and obtain a perspective about the organization of the classrooms in which they will work as teachers. In addition to this, it was believed to attract the attention of teacher candidates, of policymakers who affect the educational process, of teachers, and of parents etc. on the physical characteristics of classrooms. The teachers will find opportunities to evaluate the classroom in which they are working in terms of the physical dimension of classroom management. In this way, the results of this study are supposed to be a source, first for teacher candidates, teachers and policymakers about this issue. Also, this study may pioneer on how teachers should be trained to perceive the environment as part of the learning process, not just as furnishing, equipment and walls.

This research aims at investigating teacher candidates' perceptions about the physical dimension of classroom management. In line with this general objective, the research questions are as follows:

1. How did teacher candidates perceive the classroom that they observed regarding its physical properties?
2. What are the characteristics of the classroom that teacher candidates dream about?
3. Are there similarities and differences between their observation classroom and their dream classroom?

## Methodology

### *Research Goal*

Third-year students at the Primary School Education Department of a state university were instructed to visit a primary school and to observe a classroom in terms of its physical dimensions and attend the classroom for one class hour in the scope of their Classroom Management course. The instruction given before their observation was as follows: "Observe a primary school classroom, focusing on its physical characteristics, and prepare a report about your point of view by means of writing and drawing. Then, prepare a report about your dream classroom in terms of its physical characteristics by means of writing and drawing." Participants were asked to work individually. Through this instruction, the students were guided both to tell about the actual classroom they observed and to tell about their dream classroom. Thus, this study aims to discover students' perception on actual classroom and their construction of dream classroom in terms of physical characteristics. Hence, this is a phenomenological study in which important physical aspects of classroom were gathered from participants' points of view. Next, these reports were evaluated by the researchers. Reports considered the physical variables within the framework of physical dimension of classroom management

### *Sample and Data Collection*

The sample of the study consisted of 102 students. They were the university students attending the primary school education department at a state university. Also, they took classroom management courses within their teacher education programme. Thus, 102 individually prepared reports were collected and analysed by the researchers.

### *Analyzing of Data*

In this study, descriptive analysis was conducted. Participants' observation reports were evaluated within the scope of pre-determined categories and the findings were written after being examined in a detailed way. In addition, some of the findings were presented in the table. Then some qualitative data have been converted into numerical data. In the data analyzing process, researchers firstly worked individually; they analyzed ten reports. Later, these reports were exchanged and examined. As a last step of the process, researchers worked together in the light of examined reports. After that predetermined categories were decided to use. Predetermined categories and codes are as follows:

The category to consider factors during physical organization of classroom (high traffic area, sight / visibility, equipments / accessibility to equipments)

The category of physical variables (number of students, lighting, heat, colour, noise, size, cleanliness, bookcases, physical appearance)

The category of classroom seating chart (organization of desks, students' seating plan)

Each teacher candidate's observational report was analysed and coded in line with the pre-determined categories. During this process, some other points that were not presupposed by the researchers but offered by almost all of the participants such as Atatürk corner, notice boards and various corners were added under the category of points to consider.

## Findings / Results

In general, teacher candidates did not mention the affective influences of physical layouts and environments on individuals (teacher or students). They only pointed out physical organization of classroom, physical variables and classroom seating/organization. Therefore, the reports were analyzed according to these three categories. These are; "the category to consider factors during physical organization of classroom", "the category of physical variables" and "the category of classroom seating/organization", respectively. The obtained data were presented by grouping under each title.

*How did Teacher Candidates Perceive the Classroom that they Observed Regarding its Physical Properties?**The category to consider factors during physical organization of classroom*

Our data reveals that there are some positive and negative opinions and some suggestions about physical organization of the classroom. Teacher candidates generally emphasized on high traffic area of classroom (n=34), visibility (n=48), equipments (n=80), notice boards and corners (n=91). Although they were not among codes which were formed so as to determine the opinions of the teacher candidates about the points to consider during physical organization of the classroom, it was seen that the most of the teacher candidates mentioned the notice boards and corners in observed classroom (Ataturk Corner, Unit Corner, Poem Cornet etc.)

25 of the teacher candidates expressed that the high traffic area in the classrooms they observed was limited, that is, not enough. These inadequacies were expressed as resulting from reasons such as the narrow space between the desks, what we call as corridor, teacher's desk's, board's and students desk's interlacing, cabinets' and coat hangers' making the elbowroom narrow and placing the student desks' just by the wall at the back.

19 of the teacher candidates pointed out that the sight and visibility were not adequate in some ways in the classrooms they observed. As the reasons to hinder the sight, the placement of the teacher's desk, the board's being smaller than needed, the long distance between the board and the desks, the notice boards' and the boards' being not suitable for the students' height, the light's bad angle on the board, inappropriate seating chart (height order etc.) and the rough surface of the board were expressed by the teacher candidates. The other 19 teacher candidates verbalized that the sight in the classrooms they observed was appropriate.

The teacher candidates paid attention if there were media equipments, classroom cupboards, small first-aid cupboards and coat hangers or not in the classrooms they observed. The most emphasized ones among these were classroom cupboards, media equipments and coat hangers. 61 teacher candidates observed and stated if the students could easily access these things or not. 32 of these teacher candidates expressed that the students could access the equipments in a limited way.

*The category of physical variables*

Teacher candidates focused the following variables in their classroom observations: number of students (n=81), bookcases (n=76), cleanliness (n=65), heat (n=56), lighting (n=51), appearance (n=49), colour (n=40), size (n=31), noise (n=23).

The number of students in the actual classroom they observed ranged between 20 and 66. The number of students was 30 and above in 60 classrooms which the teacher candidates observed.

Bookcases became one of the variables on which attention was paid by the teacher candidates the most in the classrooms they observed. 76 of the teacher candidates told that there were bookcases in the classroom but 20 of them were locked, 10 of them were unlocked and 4 of them were being used as the teacher's lockers at the same time. 20 of the teacher candidates who expressed that there were bookcases in the classroom said that the bookcase was "next to the teacher's desk" and "behind the teacher's desk" in the classroom while 11 teacher candidates called attention to the number of the books in the bookcase and evaluated it as inadequate.

In terms of cleanliness of the classrooms observed, 65 of the teacher candidates remarked the garbage bin, the classroom's being clean/neat, dirty/untidy and aerated/nonaerated. Very few teacher candidates (n=4) mentioned if there were students on duty or not and they aerated or cleaned the classroom or not.

The teacher candidates emphasized that most of the classrooms observed (n=56) were heated and cooled by air-conditioning and the heat was suitable for teaching. At the same time, some of the teacher candidates stated that the classrooms were heated or cooled by air-conditioning even though there was a central-heating system in some of the buildings.

The teacher candidates expressed that the lighting was natural and unproblematic in 37 of the classrooms which they observed. In addition to this, 17 of the teacher candidates mentioned the direction of the windows in the classrooms. 14 teacher candidates reported that the lighting was inadequate.

In the variable of appearance, the teacher candidates focused on if the classroom looked aesthetic or not. Within this framework, 21 of the teacher candidates pointed out that the classrooms did not look aesthetic, 7 of them reflected that

they were aesthetic, 23 of them expressed that there were curtains and/or tablecloth and 3 of them told that there were plants and aquariums. Totally 49 teacher candidates focused on this variable.

Teacher candidates who declared opinions about the colour of the classroom reported that two colours were generally used in the classrooms which they observed, as dark colours (brown, grey, ...) in the lower parts of the walls and light colours (yellow, green, cream, ...) in the upper parts of the walls.

Most of the teacher candidates attracted attention to the size of the classrooms which they observed. They added that the size of the classrooms was standard but the number of students was so high that the classrooms became small for that number of students.

Totally 23 teacher candidates mentioned noise as a variable. 9 of them reported that there was not a disturbing noise inside and outside the classrooms which they observed. 11 of the teacher candidates told that the classrooms which they observed were disturbed by the noise outside the classroom and 8 of them expressed that there was a disturbing noise inside the classroom. Teacher candidates showed the physical education class in the school garden, the windows' direction to the streets and inadequate sound insulation as the sources of the noise outside the classroom.

#### *The category of the students-desks organization*

All of the teacher candidates focused on the organization of students' desks in the classrooms which they observed. The teacher candidates reflected that the organization of the desks was traditional in 97 of the classrooms, groups in 4 of them and "U" layout in 1 of them. Only 6 of the teacher candidates stated that the students' desks and chairs were for single person.

The observations of the teacher candidates about how the students are seated in the classroom are as follows: 50 of the teacher candidates mentioned that two or three students were sitting next to each other on one desk. They reported the criteria that were considered while seating the students as gender mixed (13 classroom), gender unmixed (6 classroom), considering the physical characteristics of the students (height and wearing eye-glasses 10 classroom), not considering the physical characteristics of the students (height and wearing eye-glasses 2 classroom), academic achievement level (3 classroom), individual characteristics (3 classroom) and leaving the students' request (3 classroom).

#### *What are the Characteristics of the Classroom that Teacher Candidates Dream Regarding Physical Properties?*

When the types of classroom organization in the teacher candidates' dreams were analyzed in general, it was understood that 54 of the teacher candidates organized their dream classroom in line with the actual classroom, 35 of them organized their dream classroom according to their own dreams, 10 of them did not change the actual classroom and only 3 of them changed the negative sides in the classroom which they observed into positive.

#### *The category to consider factors during physical organization of classroom*

Teacher candidates generally emphasized on high traffic area of classroom (n=36), visibility (n=23), equipments (n=62), notice boards and corners (n=54). It was seen that the majority of the teacher candidates mentioned the notice boards and corners in their dream classroom as well (Ataturk Corner, Unit Corner, Poem Cornet etc.).

While 36 teacher candidates mentioned high traffic area in their dream classroom, 24 of these expressed that they could change the places of desks, teacher's desk, cupboards, notice boards and coat hangers in order to relieve the high traffic area. Some other precautions such as reducing the number of desks, moving the bookcases to another place, making two semi-circle seating organizations and reducing the number of students relax the traffic in their dream classrooms by making bigger classroom spaces and creating corridors. That is to say; they wanted to create a corridor and movement convenience by making some changes in the classroom.

In terms of their dream classrooms, 7 of the teacher candidates verbalized that they could empty the front part of the classroom and arrange the seating organization that way, change the places of media equipments, cupboard and teacher's desk and rearrange the seating organization in "U" form so as to improve visibility in the classroom. Others only mentioned the importance of visibility without any solutions.

The teacher candidates emphasized that there had to be individual student cupboards as well as media equipments and coat hangers in their dream classrooms. 29 of the teacher candidates reported that accessibility to equipments was important in their dream classrooms.

*The category of physical variables*

Teacher candidates focused the same variables in their dream classroom yet the order that they mentioned was different and as follows: bookcases (n=47), appearance (n=41), heat (n=35), colour (n=33), cleanliness (n=31), number of students (n=30), lighting (n=26), noise (n=13), size (n=8).

Regarding their dream classrooms, 13 of the teacher candidates caught the attention on if the classrooms looked aesthetic or not, 14 of them told that there would be curtains and/or tablecloths, 7 of them said that there would be plants and aquariums and 3 of them specified that the products of students could be displayed.

Concerning their dream classrooms, the majority of the teacher candidates mentioned that there would be a bookcase unlocked and 10 of them told that there would be a reading center such as a small table or a cushion-carpet. In addition to this, there were also teacher candidates who said that the bookcase had to be in an easily accessible place in the classroom and there had to be a lot of books in it (n=16).

About their dream classrooms, it was determined that the teacher candidates stressed on air-conditioning the most. 6 teacher candidates predicated that the heat in the classrooms had to be 20-25.

Also they declared that they would prefer to use lighter tones of colours (yellow, pale orange, green and blue) in their dream classrooms. 4 of them designed their dream classrooms according to centers stated that they would paint each center into a different colour.

The teacher candidates frequently talked about the existence of a garbage bin in their dream classrooms, too. Besides, 8 of the them stated that they wanted to have a sink and 3 of them mentioned that they also wanted to have a toilet in their dream classrooms. Moreover, a great majority of the teacher candidates told that the classrooms had to be clean/neat while 5 teacher candidates explained that they would try to provide cleanliness by means of some rules in their dream classrooms.

Twenty six of the teacher candidates emphasized the natural lighting in their dream classrooms. Moreover, 10 of the teacher candidates highlighted that the direction of the windows had to be in the south and 3 of them drew attention that they had to be in two different directions.

The teacher candidates told that there was no noise in their dream classrooms. They positioned the school in a quiet and peaceful place in the country and far from the streets and described the school building as well insulated with double-glazed windows and wall to wall carpeting. The teacher candidates explained that there would be no noise inside their dream classroom as they would well established classroom rules.

The anticipated number of students in the teacher candidates' dream classrooms was 12 and 30 and some of them dreamt larger classroom.

*The category of the students-desks organization*

All of the teacher candidates focused on the organization of students' desks in the classrooms which they dreamt. It was seen that the teacher candidates (n=38) generally preferred "U" or "V" shaped seating arrangement but 21 of them did not leave the traditional seating arrangement, 13 of them preferred a flexible seating arrangement, 11 of them allocated various centers in the classroom, 9 of them opted for groups seating arrangement and 5 of them organized the classroom with an individual seating arrangement. Only 12 teacher candidates mentioned desks and chairs for single person.

Regarding their dream classrooms, the teacher candidates mentioned more the factors that must be considered while seating the students in the classroom than how the students are seated in the classroom. Gender mixed (n=14), changing places frequently (n=5), physical characteristics of the students (height and wearing eye-glasses n=3), individual characteristics (n=4) and fair/indiscriminate (n=1) were the factors that were mentioned the most. Besides, 4 of the teacher candidates talked about the number of students should be placed in groups.

*Similarities and Differences between Observed and Dreamt Classroom**The category to consider factors during physical organization of classroom*

The opinions of the teacher candidates about the points to consider during physical organization of classroom were given in Table 1.

*Table 1. The opinions of the teacher candidates' about the points to consider during physical organization of classroom*

	High Traffic Area		Sight/ Visibility		Equipments/ Accessibility		Notice Boards and Corners	
	Observed	Dreamt	Observed	Dreamt	Observed	Dreamt	Observed	Dreamt
Teacher candidate (n=102)	34	36	48	23	80	62	91	54

Teacher candidates focused the same factors of physical organization in observed and dreamt classroom yet the order of their mentioning was different. Especially in sight / visibility teacher candidates mentioned less. Furthermore, they generally observed negative facts in observed classroom yet all the negative facts were eliminated with positive facts in their dream classroom. Especially equipment / accessibility most of the teacher candidates mentioned negatively about observed classroom yet in their dream classroom they equipped and easy access policy towards facilities. The same is valid for notice boards and corners as well as high traffic area.

*The category of physical variables*

The opinions of the teacher candidates about the physical variables in the observed and dreamt classroom were given in Table 2.

*Table 2. The physical variables in the observed and the dream classroom*

Physical Variables	Teacher Candidates (n=102)	
	Observed (n)	Dreamt (n)
Number of Students	81	30
Bookcase	76	47
Cleanliness	65	31
Heat	56	35
Appearance	49	41
Lighting	51	26
Colour	40	33
Size	31	8
Noise	23	13

When Table 2 was considered, it was seen that the teacher candidates focused on the variables of number of students, bookcases, and cleanliness and heat the most in the classrooms they observed. Regarding the observed classroom, the variables of noise and size were mentioned the least. In terms of their dream classroom, the variables which were considered the most were bookcases and appearance. The least mentioned variables in their dream classroom were noise and size which were same as in observed classroom.

Most of the teacher candidates less mentioned physical variables in their dream classroom. In the content of their reports, it seems that they arrange their dream classroom as it's supposed to be. Yet in actual classrooms in their observation they noticed negative facts of physical variables. Teacher candidates mentioned negative facts of observed classroom in all variables. However, number of students, bookcases and cleanness were the most elaborate ones. Regarding of dream classroom, teacher candidates elaborate bookcases and appearance mostly. Furthermore, they

were reducing the number of students so size of the classroom becomes acceptable. Introduced new items (tables, clothes, flowers etc.) and new facilities (sink, toilet etc.) so classroom becomes aesthetic and clean. In actual classroom, heating and lighting were negatively mentioned by teacher candidates. Nevertheless in dream classroom heating options were limited to facilities of air conditioning while lighting is naturally obtained from windows so directions and angles of windows becomes most mentioned solutions.

#### *The category of the students-desks organization*

All of the teacher candidates focused on the organization of students' desks in the observed and dream classrooms. Most of the teacher candidates expressed that the seating arrangement was in the traditional layout in the classrooms which they observed. It was seen that the teacher candidates generally preferred single-group seating arrangement ("U" or "V") in their dream classroom. Some of the teacher candidates, on the other hand, did not renounce the traditional seating arrangement and some of them adopted a flexible one in their dream classrooms (See Appendix 1.).

While the observations of the teacher candidates about how the students are seated in the classroom (two or three students on one desk, gender mixed or not), in dream classroom they mentioned more the factors that must be considered while seating the students in the classroom than how the students are seated in the classroom (changing places, physical or individual characteristics, fairness etc...).

### **Discussion**

When the teacher candidates' preferences about the formation of their dream classrooms were taken into account, it was found that only 35 of 102 teacher candidates designed the classrooms according to their dreams. Most of the teacher candidates produced their dreams according to the actual classrooms. This can be accepted as an indicator that shows that the teacher candidates perceived the classroom's physical structure as an environment which was formed before by somebody (Weinstein & David, 1987). This can be explained in our country by having adopted monotype school model in the school buildings (MEB, 2015). However; it is remarkable that the teacher candidates got used to this opinion and they did not interfere it even in their dreams.

#### *The Category of Points to Consider During Physical Organization of Classroom*

It can be said that the teacher candidates have a picture about the points to consider during the physical organization of classroom in their minds and the factors they talk about match up with the key principles of arranging a good classroom largely (Everston, Emer and Worsham, 2003). Positive and negative opinions in their explanations and different suggestions can be shown as a proof for this. The high traffic area, visibility and equipments were emphasized more by the teacher candidates. Despite not being among the codes, notice boards and corners were the factors which were mentioned at a considerable extent.

Teacher candidates who found the high traffic area limited and inadequate in the classrooms which they observed drew attention to the narrow spaces between cupboards, chairs, boards, teacher's desks and students' desks. The teacher candidates aimed to create a corridor and provide motion comfort by making changes in their dream classrooms so as to eliminate these negative mood. In other words, the teacher candidates were able to reclaim proposals for easing the traffic in the classroom by creating corridors in their dream classrooms. This can be explicated that the teacher candidates were aware of Everston, Emer and Worsham's (2003, s.8) principle of "*defining the places in the classroom in which too much motion will be*", which must be considered in physical organization of classroom.

Another physical factor which was emphasized by the teacher candidates was equipments. Classroom cupboards, media materials, coat hangers, lesson equipment and maps were the physical factors which were mentioned by the teacher candidates the most. Regarding their dream classrooms, the teacher candidates indicated the individual student lockers differently. Besides, they also stated the accessibility to the equipment in the classrooms.

There were only a few teacher candidates who pointed out if the sight or visibility factor was appropriate in the classrooms which they observed or not. Furthermore, it is really important for this factor to be dealt with by even only a few teacher candidates.

#### *The Category of Physical Variables*

Under the category of physical variables, it was found that the teacher candidates focused on the variables of the number of students, bookcase, and cleanliness and heat the most and the variables of noise and size the least. In terms of their dream classrooms, it was observed that the teacher candidates considered the variables of bookcase and



appearance the most. Besides, the teacher candidates also mentioned the variables of cleanliness and heat. The variables which were mentioned by the teacher candidates the least were noise and size.

Most of the teacher candidates pointed out that the sizes of the classrooms which they observed was at standard sizes but they looked like small because of the high number of students. This can be because of adopting the monotype school model in general and converting some buildings which had been designed for different purposes into schools in some situations in our country (MEB, 2015; Yucel, 2008). The teacher candidates reported that the classrooms which they observed were at standard sizes. It can be said, however, that the classrooms were not at appropriate sizes when the principle of *“the space for one student must not be less than 1.2 meters”* in the Ministry of National Education Instruction was compared with the number of students (the teacher candidates reported that the number of students was above 30 in 60 classrooms) in the classrooms which were observed by the teacher candidates. The teacher candidates' demanding large classrooms and defining the number of students in their dream classrooms as between 12 and 30 can be interpreted that they were aware of this principle in the instruction of Ministry of National Education. This finding can also be commented that the teacher candidates were aware of the relationship between the number of students in the classroom and the quality of teaching. In order to improve the quality of learning, the interaction and dialogue between the teachers and students, the authorities have been trying to reduce the number of students in many countries (Blatchford, Bassett, & Brown, 2011; Ehrenberg, Brewer, Gamoran, & Willms, 2001). In addition to this, the frequency of positive student behaviours will increase and the teachers will be able to manage the classroom more effectively and create opportunities to facilitate the effective learning in the classroom (Aydin, 2008; Celep, 2008). Consequently, a classroom size in which every student can participate in the lesson at the highest level and effective teaching can be realized is important (Isik, 2004)

Another variable which is mentioned by the teacher candidates a little was noise. The teacher candidates' opinions about the variable of noise coincide with the related literature (Celep, 2008; Tabançali, 2007; Tayfur & Celikten, 2008). The teacher candidates underlined that the noise in their dream classrooms would be prevented by means of the precautions which would be considered at the stage of placing and construction of the school building and the noise inside the classroom would be stopped by well-established classroom rules as overlapping with the literature (Celep, 2008; Tabançali, 2007; Tayfur & Celikten, 2008)

Based on the findings about lighting, it can be said that the teacher candidates gave special importance to natural and unproblematic lighting. The performances of the students in the lessons, their willingness to study, their cognitive characteristics and so their health are affected in a positive way in the classrooms which are lighting naturally (Wei, 2003; Hescong Mahone Group, 1999; Hand, 2014; Ahrentzen & Evans, 1984). Windows and daylight are very important for primary school students. Besides, students prefer indirect natural light. It was also determined that the students attend the classes more, they participate actively and the exam scores are higher in classrooms which are lighting naturally (Hand, 2014). In classrooms which are lighting naturally and with no problems, the motivation of teachers and their interactions with students are healthier. (Hescong Mahone Group, 1999; Hand, 2014). The authorities at schools in which natural and unproblematic lighting, which is such an important variable, is not provided should be warned.

The variable of heat has become one of the variables emphasized the most by the teacher candidates. This shows that the teacher candidates care about the relationship between the heat of the classroom and the students' performances (Bull and Solity, 1996). The heat between 17 and 23 °C is considered as normal. The individuals can study and produce effectively in these temperatures (Aydin, 2008; Isik, 2004). The teacher candidates underlined that both the classrooms which they observed and their dream classrooms were heated and cooled by air-conditioning and the heat was appropriate for education. Heating or cooling the classrooms by air-conditioning can be related with the seasonal temperature values of the city in which the research was being carried out (Korkmaz, 2001).

It can be said that the colour and the cleanliness were linked to each other in the classrooms which were observed because the teacher candidates stated that two colours were used in the classrooms they observed as dark colours (brown, grey...) on the lower parts of the walls and light colours (yellow, green, cream, ...) on the upper parts of the walls. These colours result in a perception of the classrooms' becoming narrow though they were preferred to keep the classrooms clean for longer periods. The teacher candidates explained that they would use hot colours (*colours such as yellow, pink, orange should be used in the elementary school classrooms*) in their dream classrooms as matching up with the literature. This finding can be commented that the teacher candidates were aware of the effect of colours on people and they could choose suitable colours for the educational level they would teach. The colour is an important variable because it is effective on not only the formation of suitable physical environment but also mental preparation process (Ozden, 2005).

Almost all of the teacher candidates mentioned the garbage bin in the classrooms they observed. This finding can be interpreted that the teacher candidates associated the cleanliness and the garbage bin directly. Later, the teacher

candidates focused on the classrooms' being clean/neat, dirty/untidy and aerated/nonaerated. The impressions of clean, neat and well-kept environments on us are different. When it is thought that a primary school student is affected by clean, neat and well-kept environments, a lot of duties and responsibilities fall to primary school teachers beyond keeping a garbage bin in the classroom. Because of this, the responsibilities for keeping the classroom clean and aerated and providing the continuity of this should be shared with the students. Besides, some rules must be set so as to create awareness about cleanliness and turn this into a habit. On the other hand, the findings of this research revealed that only a few teacher candidates mentioned *"the rules about having students on duty in the classrooms and cleanliness"*. Regarding their dream classrooms, some of the teacher candidates told that *"they wanted to have a sink and a toilet in the classroom"*. This can be interpreted that the teacher candidates were aware of the fact that says the physical variables should be changed according the educational level.

The bookcases, their accessibility and their book-rich were one of the physical variables on which attention was drawn a lot by the teacher candidates. It is promising but challenging that the teacher candidates mentioned the bookcase in both classrooms they observed and their dream classrooms although reading rate is so low in our country (Ozden, 2005). This finding can be interpreted that the teacher candidates believe that children should start reading at early ages and think that reading is important even though they do not read books themselves.

In the variable of appearance, the teacher candidates focused on if the classrooms they observed looked aesthetic or not and drew attention that the classrooms they observed were not aesthetic. In addition to this, it can be construed that the teacher candidates had the opinion which said the classrooms should please the eyes of the students as they focused on similar aesthetic components in terms of appearance in their dream classrooms. According to Celik (2002), human beings have inherent tendency to search aesthetic. The classroom environment's having suitable standards in terms of appearance carry vital importance for both students and teachers. Weinstein and Mignano (2007) underlined the importance of aesthetic appearance which made the students feel relaxed and peaceful in the classroom and emphasized that colour harmony and live plants could be given place in the classrooms.

#### *The Category of Classroom Seating Chart (Organization of Desks, Students' Seating Plan)*

Most of the teacher candidates expressed that the seating arrangement was in the traditional layout in the classrooms which they observed. It was seen that the teacher candidates generally preferred single-group seating arrangement ("U" or "V") in which the teacher becomes a part of the group and the students have great opportunities to observe each other. Some of the teacher candidates, on the other hand, did not renounce the traditional seating arrangement and some of them adopted a flexible one in their dream classrooms. From this point of view, it can be said that teacher-centered instruction was preferred in the classrooms which were observed but the teacher candidates had the tendency to prefer student-centered instruction. The organization of desks and students' seating plan reflects the teaching understanding and philosophy of the teacher. Besides, the classroom seating chart is related with many variables which is directly effective on academic achievement, such as group communication, interaction and participation (Ozden, 2005). In this context, it was determined that the teachers who prefer traditional seating arrangement limit the group work and the interaction between the students by taking the importance of teacher and the presentation into prominence. In contrast with this, it was revealed that the teacher who gives importance to the collaboration and the interaction between the students preferred group, single-group ("U" or "V") or flexible seating arrangement (Hand, 2014; Isik, 2004; Sahin, 2009; Weinstein & Mignano, 2007). It was specified that the teacher candidates mentioned desks and tables for one person that allows an individual seating arrangement only a little. This can be explained by the teacher candidates' lack of knowledge because the teacher and the students can come together in different ways in the individual seating arrangement and this will let the classroom's seating arrangement be changed in a short time as appropriate for the teaching objectives. Furthermore; such a seating arrangement can be needed when students are instructed to study on a subject intensively by themselves (Tabançali, 2007).

### **Conclusion and Suggestions**

As a conclusion, teacher candidates did not mention the affective influences of physical layouts and environments on individuals (teacher or student). As a result, it was seen that the teacher candidates paid attention to components such as high traffic area and equipment in the physical dimension of the classroom but they emphasized only a few of the physical variables. What is interesting is that almost all of the teacher candidates drew attention to Ataturk Corners and the notice boards which were used for different purposes in the classroom. Nearly all of the teacher candidates underlined the seating arrangement in the classrooms and they stated that it was in traditional seating arrangement. The teacher candidates made arrangements which would protect the traditional layout in their dream classrooms but limited number of teacher candidates used a flexible seating arrangement according to the activity. In line with these results, it can be concluded that the teacher candidates had information about the physical dimension of classroom management but they believed that they had restricted authorization to interfere this dimension.

The physical arrangements which are made to create the classroom environment are limited with the structure of the school building. The realization of a versatile communication based on mutual interaction which is student-centered and between teacher-student and student-student is a problem of construction of school buildings as well as the curriculum which is being implemented. It is difficult to change the seating arrangement in square classrooms in square school buildings. Construction of the school building affects not only the seating arrangement but also the light and noise etc. Because of this, the constructions of school buildings must be rearranged first if a student-centered teaching is demanded. In order to change the teacher candidates' beliefs about being able to make only limited changes in the physical dimension, some implementations such as situations and scenarios in which they can construct the physical dimension effectively must be placed in the scope of the classroom management course. More rights and authorities must be given to teacher candidates in the classrooms which they visit for practice in the courses of "school experience" and "school practice" in the teacher training programs. In this way, the teacher candidates will be provided to manage the process about the physical dimension of the classroom and it will be possible for them to improve these skills when they are assigned as teachers. Thus teacher candidates became aware of the role of the teachers, creating the learning environment within an architectural facility, so they recognize the teacher-designed environment as an active influence on the lives of students and teachers within the school day. In the daily processes of classrooms, the physical environment arranged by the teacher provides the setting for learning and at the same time acts as a participant in teaching and learning.

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Appendix 1. Example about drawing of observed and dream classroom

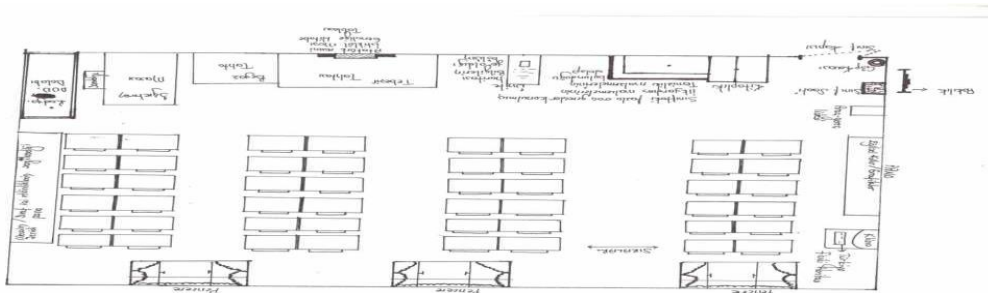


Figure 1. Drawing of Observed classroom (Participant 52)

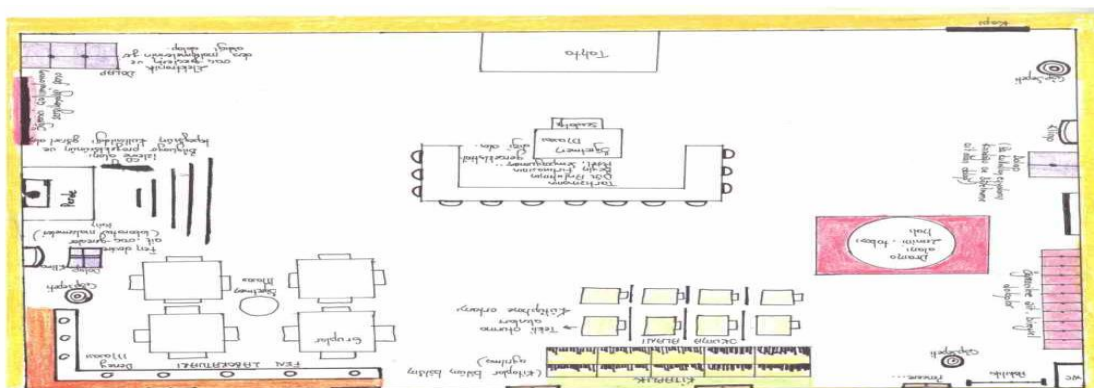


Figure 2. Drawing of dream classroom (Participant 52)

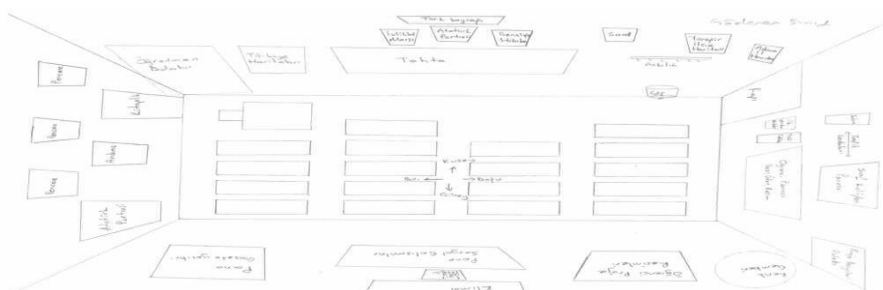


Figure 3. Drawing of Observed classroom (Participant 35)

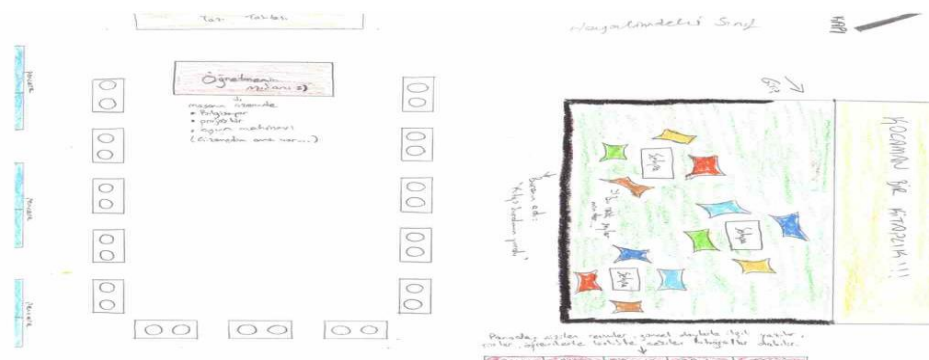


Figure 4. Drawing of dream classroom (Participant 35)