



FLEXIBLE CLASSROOMS AND THEIR TEACHERS IN PRIMARY EDUCATION

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Abstract

The aim of this research was to get the opinions of primary school teacher candidates about flexible classrooms in which technology is integrated, the flexibility in the physical arrangement of the classrooms and the modern approach to classroom structuring, as opposed to the traditional classroom structure, and the role of teachers in these classrooms. The research study group consisted of 3rd-year pre-service teachers studying at a state university education faculty from 2021-2022. In the research, the data were obtained with a semi-structured interview form. For the analysis of the obtained data, the MAXQDA 2022 program and a content analysis technique were used. One of the main conclusions of the research was that the participants associated their definitions of the flexible classroom with the physical arrangement the most. According to their drawings, they preferred a u-shaped seating arrangement, and they defined the teachers of the flexible classrooms sociologically.

Keywords: Flexible classroom, classroom management, class teacher.

INTRODUCTION

Because of a change in the education paradigm, countries have been developing class structures suitable to their schools (Göçen, Eral, & Bücük, 2020). In addition to different responsibilities imposed on students in the 21st century (Walker, 2016), as the educational field has developed to better support students, constructivist pedagogies have gradually become more widespread. Today's students are demanding a change in the classroom because of the availability of different tools such as on demand videos, web 2.0 tool and computers. In the past, schools were shaped by the Industrial age; however, the classrooms of tomorrow will be shaped by the digital age (Arstop, 2018; Göçen, 2021). This new structure is called 'flexible sitting' in classrooms and has created a structure based on the view that students are in environments where they can express themselves more comfortably versus one in which they are using traditional tables and chairs (Swofford, 2021, Darling-Hammond et al., 2020). As Kennedy (2016, p. 20) considered: "Movability and maneuverability of seating are valued by 21st-century students because it facilitates the ability to work in groups or teams, which is becoming more common within the classroom, when seating configurations need to be altered within class, students may expect inherently that the classroom environment, especially seating, will be moldable to the task or purpose at hand".

The Theoretical Background of the Research

Designing flexible classrooms that are more conducive to student participation than traditional spaces has supported classroom management and students' meaningful learning. (Ellis & Goodyear, 2016; Rands & Gansemer-Topf, 2017). Zimmerman (2019) said that a flexible seating arrangement is a key part of this new, modern learning environment. The arrangement of personal living space is different from one individual to another. Seeing things that belong to a person in an environment gives the



individual a sense of owning the place and a feeling of belonging there (Büyükaşahin, 2019). Classes constitute the most important and supportive factor at schools during the education and training process. Traditionally, classrooms are spaces designed by architects that contain different items such as tables, chairs, desks, cabinets, blackboards, audio, and visual elements. Monahan (2002) used the term “established pedagogy” to describe the impact of a space design on the activities that can occur within it. While formation of a physical learning space limits certain approaches, these approaches by their very nature become possible and can reflect methods used by the teacher, technical and even school management. In established pedagogy it is possible to see different examples of this. For example, traditional classrooms with rows of students facing the 'front' of the room position the instructor as the authority and primary source of information (Chandler, 2009). The physical environment of the class is one of the areas having an important impact on the success of students. This structure can play a role in determining whether the classroom is suitable for learning, as well as determine various details such as available resources, color, seating arrangement, lighting, and air conditioning. Even though relevant changes specified here do not have a significant impact on the success of students (Nguyen et al, as cited by Ghazali, 2017), they can have an impact on strengthening learning skills of a student.

Students in Turkey continue using physical educational spaces created by the Ministry of Education. Schools are constructed without regard for classroom set-up where it is assumed that wooden desks and tables in a space surrounded with four walls are sufficient. With technological advancements, the aim is to equip classes with top level cognitive materials. However, a person integrates the concept of space by correlating it with his or her own perceptions. For this reason, a space does not constitute a dimension having definite limits based on standards (Gezer, 2012). In this context, it is necessary to switch to classroom ergonomics tailored to the needs of students in the classroom instead of standardized classrooms (Büyükaşahin, 2019). It is required for class arrangement to be more flexible and to conform to methods and techniques used in a school management approach. As the number of schools starting to redesign their learning environments increase, it is important to focus on the impact of the physical layout flexibility of classrooms and on students in the learning environment. There have been a limited number of studies that have evaluated benefits related with changes in the physical learning environment (Bagateli et al 2010; Pfeiffer et al 2008; Stapp, 2018). The fact that primary school students spend most of their time in one classroom has been very effective in understanding the impact of the learning environment on these students (Barrett et al, 2013). In today's classrooms, technological equipment such as computers with internet access and projectors are available as a requirement for modern classrooms. This technology facilitates remote access to information, carries the limits of the learning environment outside school, and changes the concept of the classroom environment (Şensoy & Sağsöz, 2015). Flexibility and openness constitute key qualities in promoting a community of relevant learners that can learn cognitively (Rands & Gansemer-Topf, 2017).

With the aim to increase participation in educational environments, educators have particularly evaluated subjects related to flexibility of physical variables of classroom space usage in schools. In the learning environment literature, there are also studies investigating how physical or established learning environments can develop pedagogy, and in return, how it can affect student outcomes (Blackmore et al, 2011; Cleveland, 2011; Clinton & Wilson, 2019; Fisher, 2005; Jamieson et al, 2005). With a pedagogic perspective, learning environments must provide teachers and students a space where they can discover information together. However, an effective learning environment must also be flexible enough to accommodate multiple learning approaches such as self-study and reflection, one-on-one teaching, peer discussion, small group work, teacher-led instruction and student presentations (Demir, Yıldız, & Tatik, 2019). Hence, some studies have concluded that when class arrangements are designed carefully, learning environments facilitate student centered teaching and this improves student participation (Cleveland, 2011; Stern & Etheridge, 2008). Gifford (2002) stated that open learning environments, classroom comfort and flexibility in furniture arrangement can have positive effects on learning outcomes.

Flexible, technology-enhanced classrooms have a variety of amenities designed to encourage student engagement, such as mobile and groupable furniture; writable surfaces; and ubiquitous access to power,



internet and content sharing capabilities. Studies conducted to understand the impact of flexible classes on teaching and learning have shown that these can positively affect academic success (Dori & Belcher, 2005) and student-teacher interaction (Walker et al, 2011). To move towards this type of student-centered learning, schools and educators are working towards a new style of learning in the 21st century. They set out to change the learning environment to meet the needs of their students and increase student engagement and academic success. As constituting part of this process, researchers have proposed changes in learning environments including improvement of teaching applications, increases in inclusion of technology, and changes in the physical class environment (Cleveland & Fisher, 2014; Kariippanon et al. 2018).

Effective usage of flexible class environments requires environmental competency to be at a high level. Environmental competence requires awareness of features related with the physical environment and skill to control or change the environment in connection with this. According to Lackney (2008), a lack of environmental competence can lead to teacher-led pedagogies in flexible learning environments. According to Robert, Ramsay & Bekiroglu (2021), lecturing is dominant in traditional classes because this is the approach where transmission is made the easiest. It revealed the effort to combine architectural design with teaching best practices to determine the impact of the physical learning environment on students (Rands & Gansemer-Topf, 2017). Successful pedagogy opens doors to success in academics, social and emotional growth, and lifelong skills (UNESCO, 2021). The educational environment is an environment where educational activities take place, where communication and interaction in teaching-learning processes take place, and where elements such as personnel, tools, equipment, facilities, and organization are formed. For this reason, it is a known fact that a well-designed classroom environment has a positive effect on students. Research (Darling-Hammond et al., 2020, Burgoyne & Ketcham, 2015; Cleveland, 2011, Stapp, 2019, Grimm, 2020; Zalud, 2020) suggests that students' learning is positively affected in flexible learning environments. In these classrooms, school management becomes easier and the communication between students who feel comfortable and teachers who effectively provide school management is strengthened. Thus, education and training become effective by differentiating from the traditional structure. Research on flexible classrooms is based on their impact on academic achievement, student learning and teachers' perceptions of the 21st century classroom. However, it should be noted that flexible classrooms do not mean the same thing for every teacher (Walsh, 2019). Some teachers prefer traditional seating arrangements (Erz, 2018) because they allow students to be disciplined (Morris, 2017) more easily than traditional educational structures. Some teachers, on the other hand, state that flexible classrooms negatively affect classroom management as they cause chaotic and waste time. Unlike other studies, the current study focuses on the characteristics that flexible classroom teachers should have. There has been no research on this topic in the literature.

The purpose of study

Changes in the structuring of traditional class organization into flexible classes came to the agenda mainly in Turkey and other parts of the world as modern and postmodern alternatives came out, but relevant studies have been quite limited. Given these new modern advances, children have the right to be educated in more flexible classes, where they are approached as individuals with personalities, interests and skills, rather than in classes where grade anxiety, standardized examinations and classification methods are used. Flexible classrooms are an alternative, where the teacher is not perceived as an authoritative force in the classroom. Instead, the classrooms are completely student-oriented, suitable for both individualization and group work in a physical sense and designed to meet the needs of the child.

The aim of this research is to determine the opinions of primary school teacher candidates about a flexible classroom structure versus the more classical classroom set-up and understand their views on the teacher characteristics within this structure, considering their interests and abilities and the abilities of the students. Sub-purposes determined in line with this aim are as follows:

- ✓ What are the opinions of primary school teacher candidates on the concept of a flexible class?
- ✓ How does primary school teacher candidate define a flexible class visually?



- ✓ What are the opinions of primary school teacher candidates on the role of the teacher in the class they drew?

METHOD

Research Design

A case study, a qualitative research design, was used in this study to determine the views of prospective teachers on flexible classrooms as an alternative layout to traditional classrooms. According to Chmiliar (2010), the case study is a methodological approach that includes in-depth analysis of relevant systems by using multi-data collection to obtain systematic information regarding how a limited system operates and processes. The most apparent feature of a case study is that an individual is examined within its context due to the unique characteristics of a related community or situation (Saban & Ersoy, 2016).

Study Group

Analogous (Homogenous) Sampling was used in the study. In the affinity sampling method, a small and homogeneous sample is considered and studied in detail (Neuman, 2014). In the affinity sampling method, the sample may include a similar subgroup in the population, or a highly specialized situation related to the problem of the research. For this reason, instead of reaching all the students who took the classroom management course, only the students studying in the department of classroom education were reached. Thus, the study group of this research consisted of 65 pre-service teachers in a state university in the 2021-2022 academic year in the faculty of education, department of elementary education, and department of classroom education. The name of the university where the research was conducted was not disclosed within the framework of ethical rules. The ethics committee letters of the relevant university for the realization of the research were obtained with the decision of the Scientific Research Ethics Committee dated 20.01.2022 and numbered 02/38. Findings relating with genders of primary school teacher candidate participating in research are given in Table 1.

Table 1. Findings about genders of participants

Gender	f	%
Female	48	73.84
Male	17	26.16
Total	65	100

It is seen from Table 1 that among 65 participants taking part in the study 48 of them are female and 17 of them are male.

In the research, the data were obtained from the participants through open-ended questions in a semi-structured interview form. Open-ended questions were prepared in line with the purpose of research by enabling participants to give answers requiring explanations rather than short answers. Questions also contained key phrases in the literature such as “flexible class”, “physical arrangement of class”, and “flexibility in school management”. Scanning was then done, and a draft interview form was prepared accordingly. To ensure that the form was valid, the prepared draft was presented to three experts in the educational field and their opinions were obtained. In line with expert opinions, the form was adjusted, and a pilot application was made. Ten pre-service teachers were selected for the pilot application, and they were requested to answer the form. Based on the initial data obtained from the pilot application, the functionality of the interview form was tested, and the final version of the form was created. To ensure external validity of the research, when findings were presented, quotes and images were included.

Questions for the interview form were created to determine opinions of participants in relation to flexible classes. The following questions were asked to participants within the scope of the study:

1. According to your opinion, what is a flexible class?
2. Can you draw a structure below that comes to your mind when you think about a flexible class?
3. What is the role of the teacher in the class you have drawn?



Validity and reliability

In qualitative research, validity and reliability depend on the degree of overlap with the realities of the person or organization, as they are evaluated with the records obtained by the researcher, or the comments made by the researcher. Records and comments are considered valid to the extent that they are in accordance with reality. However, the concept of validity and reliability, which is more commonly used in quantitative research, has been replaced by the term ‘accuracy’ in qualitative research. In this research, the terms ‘transferability’ for external validity, ‘credibility’ for internal validity, and ‘durability’ for reliability were used (Lincoln & Cuba, 1985, as cited in Şencan, 2005). ‘Transferability’ is the extent to which the researcher explains the scope of the study to the participants. ‘Credibility’ is the accuracy and reliability of the research results from the perspective of the people from whom information is collected. For this, the views of colleagues who are not in a subordinate or superior position but in a similar status are reflected (Şencan, 2005). To ensure the credibility dimension in the research, the answers given by the participants to each question were read by three experts in the field. The answers of the experts and the participants were compared and thus the consistency of the data was checked. ‘Durability’ is related to the consistency of the data. The researcher should keep good records and the research should be supported by evidence. In this study, robustness was maintained, because the researchers quoted the participants' responses exactly as they were given. In the discussion and conclusion section, the participants' views are presented in accordance with the structure in which they were found, which factors they were influenced by, and how they differ or have similarities with similar studies. The limitations of the study are also discussed at the end of the chapter. All these procedures show that this research can be accepted in terms of validity and reliability. In the analysis stage, answers obtained from primary school teacher candidates were transferred to a digital environment and a field expert was asked about the interview form with resolved data. According to the opinions received by the participants, themes and sub-themes were created and a coding key was created that indicated themes around consensus that were reached. Reliability was ensured when the same consensuses were reached among expert opinions as indicated by the newly created coding key. According to Büyüköztürk (2008), comparison of results with inclusion of a specialist other than a researcher in the analysis process, and having consensus with a ratio of 80%, ensures reliability of a study. At this stage, the Miles and Huberman's formula was used and is given as: $\text{Percentage of Agreement} = \frac{\text{Consensus}}{(\text{Agreement} + \text{Disagreement})} \times 100$ formula. The findings regarding the reliability analysis are as follows.

Table 2. Findings about reliability analysis of open-ended questions

Question no	Reliability percentage
1	91.2
2	87.6
3	80.4
Total	100

Analysis of Data

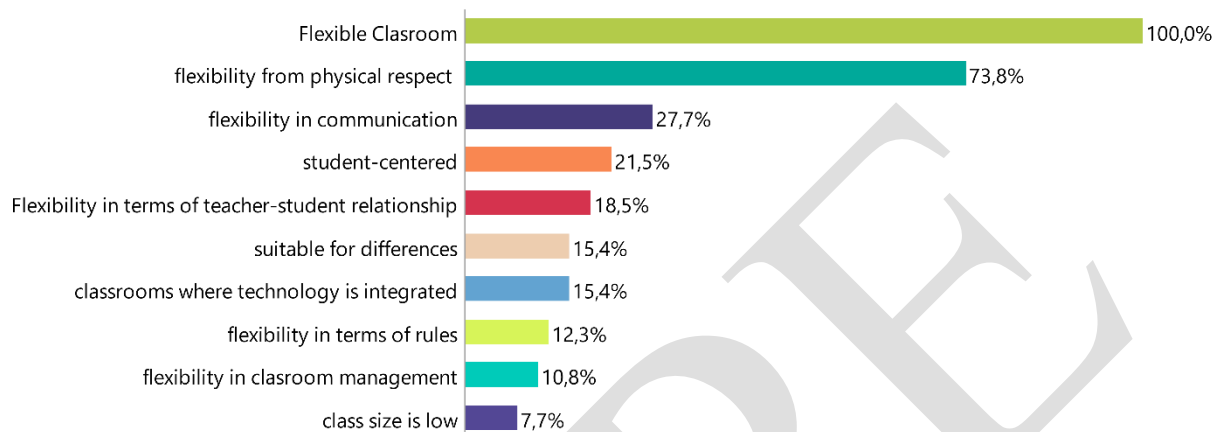
Data obtained from pre-service teachers with the semi-structured interview form consisting of 3 questions were analyzed with a content analysis technique. This technique was used to make the data meaningful by combining them within the context of scopes and themes. Content analysis is a technique that makes great contributions to the relevant literature by showing the gaps and deficiencies in the field and evaluating the features and usability of the studies (Kanlı et al, 2014). In order to make comparisons of particular concepts, themes and sub-themes, data were expressed numerically. MAXQDA 2022 was used for data analysis, particularly for systematic evaluation and interpretation of the data, because it is considered a powerful tool to develop theories and to test theoretical results. In the analysis of qualitative data, MAXQDA made it possible to develop a theory based on coding and to create a research report according to this theory, unlike other software that only codes (Çayır & Sarıtaş, 2017). Coding was made after findings with reliability analysis were obtained and then the analysis results were presented using a table and visual mapping.



FINDINGS

Findings obtained from analysis of data collected in aiming for sub-purposes of study are submitted in this section.

With regards to the preliminary sub-purpose of study, opinions of pre-service teachers about what a flexible class is are obtained and these opinions are analyzed within context of codes created in relation to definition of “flexible class” and findings given in Graphic 1 are obtained.



Graphic 1. Flexible class

As it is seen in Graphic 1, majority of participants expressing opinion about what a flexible class is have correlated this flexibility with flexibility from physical respect (73.8%). It was determined that pre-service teachers correlated flexible classes with flexibility relating with school management at minimum (10.8%). It is seen that the teachers who expressed their opinions expressed flexible classrooms as classrooms suitable for differences (18.5%), classrooms in which technology was integrated (15.4), and classrooms with a small number of classrooms.

Analysis results about dimensions with which pre-service teachers correlated flexible classes physically are presented in Figure 1.

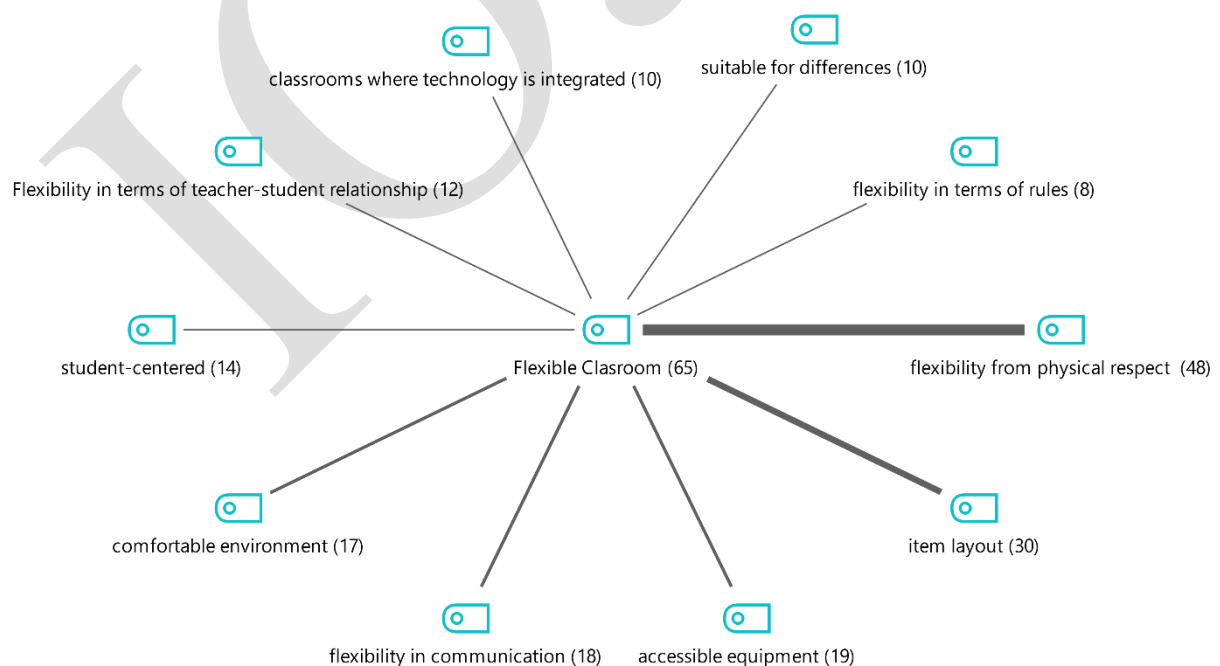


Figure 1. Flexible classes code sub-code sections model



As it is also seen in the figure, 48 of pre-service teachers expressing opinion have stated that flexible classes were physically flexible. Among participants who stated that flexible classrooms are physically flexible, 30 associated it with the arrangement of belongings, 19 with accessible tools and equipment, and 17 with a comfortable environment. Some of the opinions of pre-service teachers expressing opinion about physical flexibility code are as follows;

When defining flexible class, ÖA8 mentioned about the size of class and stated that physical order in this class must be as it is in local commodities week.

ÖA8: It is the model in which teacher has access to every student and there are no back desks. While celebrating domestic good week in our classes in the past periods, arrangement in our class was in the same form and instead of giant and long classes, sweet classes that are a bit bigger than small and a little bit smaller than big would be an example for more flexible class structure. At the same time, as I have mentioned above, more rounded classes without back desks would be warmer and each student must be reachable and seen.

ÖA8 has stated opinion that when class is small it will be warmer and has made emphasis on size of flexible classes. ÖA14 has stated the opinion that different events can be specified with lights and has mentioned that flexible class must be outside scope of traditional structure. Furthermore, according to ÖA14 there must be technological devices such as computer and tablet for each student in flexible classes and besides, school management must be supported with variables such as lighting.

ÖA14: I consider it as a class that operates as different from traditional class arrangement. Elements such as the fact that there are wheelchairs instead of normal chairs and that the tables can be adjusted according to the students' situation reflect the flexible classroom understanding. On one wall in the class there must be words, events, pictures enabling for students to get motivated which is related with the concept of flexible class. Providing electronic objects such as computer or tablet facilitates education of students. There can be lights on ceiling of class that can change according to event or the lesson. There can be light with a different color during book reading hours and there can be a different color of lighting while having lessons.

As being similar to OA14, ÖA16 stated that class arrangement must be in conformity with students and flexible classes must comply with individual differences. ÖA16 has said that in addition to physical order, school management must also be flexible, but that teacher should not compromise from his authority. Even though in the opinions of pre-service teachers it is mentioned about that there must be flexibility in physical and managerial dimensions, it is observed that the traditional structure is preserved.

ÖA16: It can be defined as class arrangement related with variability and differences in the class, enabling harmonization to take place. A seating arrangement providing comfort for each child while no child will remain in back seats can be made. Desks that can be easily moved when desired constitute the main particular of seating arrangement according to my opinion. Desk arrangement should be made which can be harmonized with individual studies, group studies, experimental arrangement, and lesson arrangement in every condition. Class teacher must adapt to flexible conditions according to each situation. He should meet requests and needs of students but at the same time he should not compromise from his authority.

When opinions of participants stating opinions (ÖA8, ÖA14 and ÖA, 16) are reviewed, it is seen that they have defined flexible class as classes arranged in accordance with differences within varieties, having physical order for the student. According to participants order of each class should be supported with technological tools and classes must be developed in accordance with needs of students with technology.



When defining flexible class ÖA21 stated that in-class materials must be reachable by students and precautionary model should be used in school management.

ÖA21: According to my opinion in the flexible class there must be an environment enabling for participation of all students in the class. Besides seating arrangement of students must enable them to be interactive in the class. Materials to be used in the class should be reachable. Measures should be taken in relation to factors affecting the class environment. A safe environment should be created.

When defining flexible class, ÖA26 and ÖA65 have stated their opinion that they considered these classes to be those not having rules, where rules have been made flexible. While defining flexible classes, ÖA26 has made emphasis on the particular that there could be space and time flexibility while lecturing as being different from traditional class environment, while there would be fun and guidance of teacher;

ÖA26: Flexible class is a class where there aren't many harsh rules but that is not independent of rules. Meaning that in each morning lessons start at hour of 09:00 and lesson hours in following week can be changed as per student participation or conditions. For example, lecturing can be done in school garden and not always in the class. Students can come to lessons in civil clothing and not in school uniforms. In the lesson student and teacher can change roles. Student can sit at teacher's desk and lecture. There can be small cupboards in the class. Students can drink water from here during the lesson. In this way learning support is provided and both learning, and fun occur at the same time.

ÖA65: Flexible class is a class where there are no rules and students can act comfortably, freely, where those who wish can sit on floor. In this class materials move; tables and desks are easily replaced. Students can move tables to where they wish.

ÖA65: Flexible class is a class where there are no rules and students can act comfortably, freely, where those who wish can sit on the floor. In this class materials move; tables and desks are easily replaced. Students can move tables to where they wish.

ÖA61: Flexible class is a class where student is at the center, has active participation, objects move easily, free physical arrangement and communication between student and teacher. Emphasis is made both on school management and physical dimension... Flexible class is a class where there is student centered learning, where there is arrangement for active participation, planning accordingly, sitting order being different from traditional sitting order, applicable as per educational techniques, and methods. Teacher's desk must be close to each student. Teacher should be able to move freely. He should be able to move in the class. Desks mustn't be locked. In this way desks could be moved. In this way there will be a class order adjustable as per lesson and lesson plan.

In their flexible classroom definitions, pre-service teachers expressed flexible physical layout, environments with an arrangement different than the traditional seating arrangement (mostly u arrangement), where the desks can be moved and the items in the classroom can be changed easily. According to the pre-service teachers, the layout and functioning of these classes facilitate classroom management, support teaching and provide flexibility in terms of both time and space. Active participation is prominent in these student-centered classrooms, and teaching is kept alive by keeping strong student and teacher communication.

Within frame of determined themes and sub-codes overlapping code models established as per the ways participants mentioned about codes are as follows.

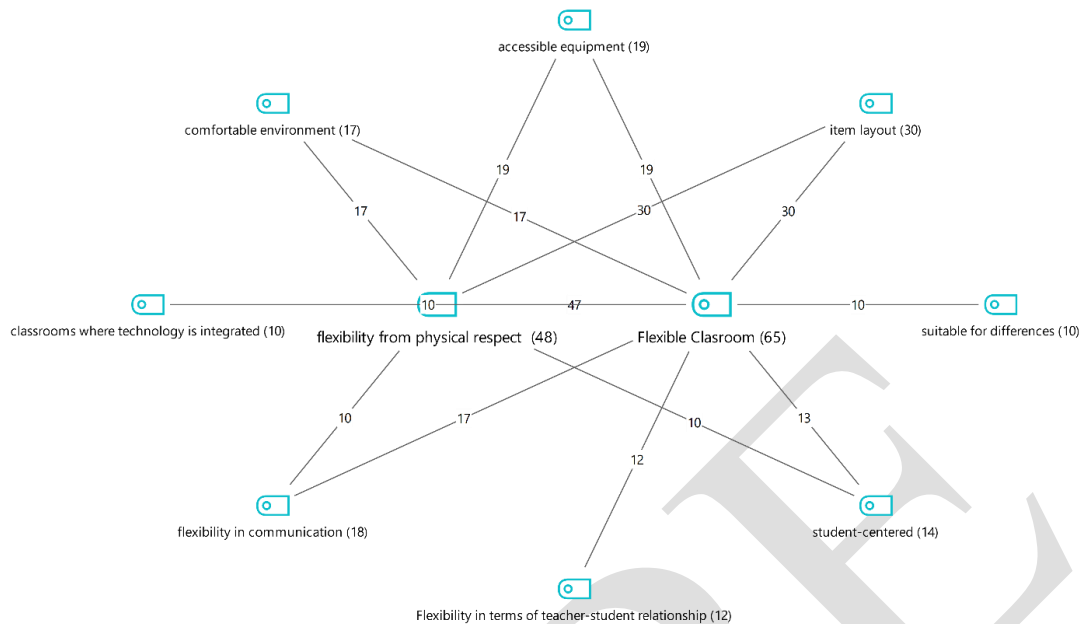
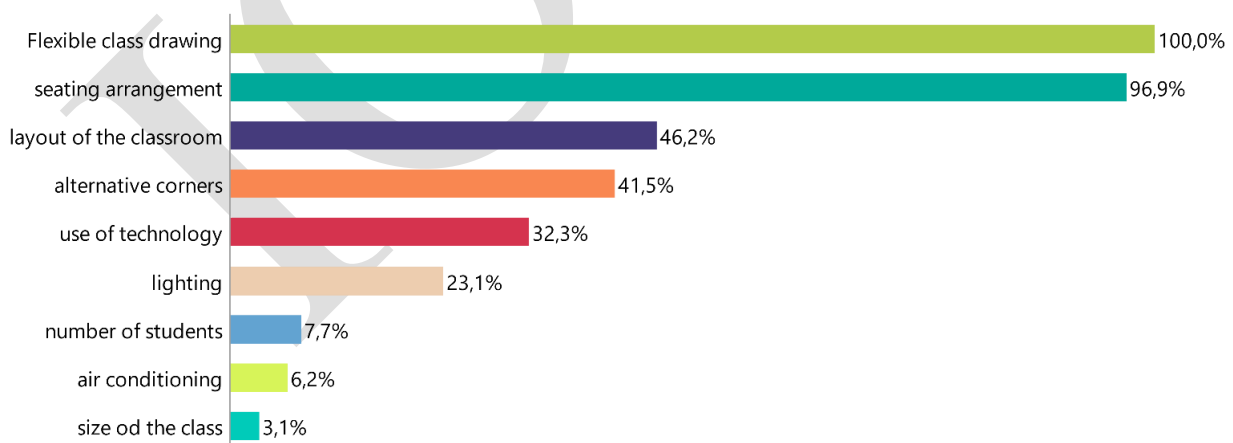


Figure 2. Physically code formation model

It is seen that teachers who express their opinions on what flexible classrooms are, correlate physical flexibility (n: 48) with the most accessible equipment (n: 19). However, it is seen that there is a connection with physical flexibility and communication in flexible classes (n: 18) and technology integrated classes (n: 10). It is seen that the participants define the flexible class as technology-integrated, flexible environments in terms of physical and management, where there is a comfortable communication environment. It is seen that pre-service teachers correlate flexibility in terms of physical environment with the availability of tools and equipment rather than the arrangement of goods.

Regarding the second sub-problem of the research, the drawings of the pre-service teachers for the flexible classroom were analyzed by coding according to the code key created within the framework of "variables related to the regulation of the physical environment" among the dimensions of school management, and the findings are presented below;



Graphic 2. Flexible class drawing

When the graph is examined, it is seen that most of the teachers (96.9%) who expressed their opinions made drawings for the seating arrangement, constituting one of the dimensions of the physical arrangement of the classroom. After the seating arrangement, the pre-service teachers mostly found the drawings related with the layout of the classrooms (46.2%) (Individual, sequential and multi-group). The drawings related to the size of the classroom (3.1%) and air conditioning (6.2) are at minimum. The



pre-service teachers who stated that there should be alternative corners make up 41.4% of the participants. Under the code of alternative corners, teachers have included many alternative corners such as plant corners, reading and resting corners, movie, and drama corners.

Drawings related with sub-codes of teachers making drawing about physical arrangement of flexible class are given in Figure 3.

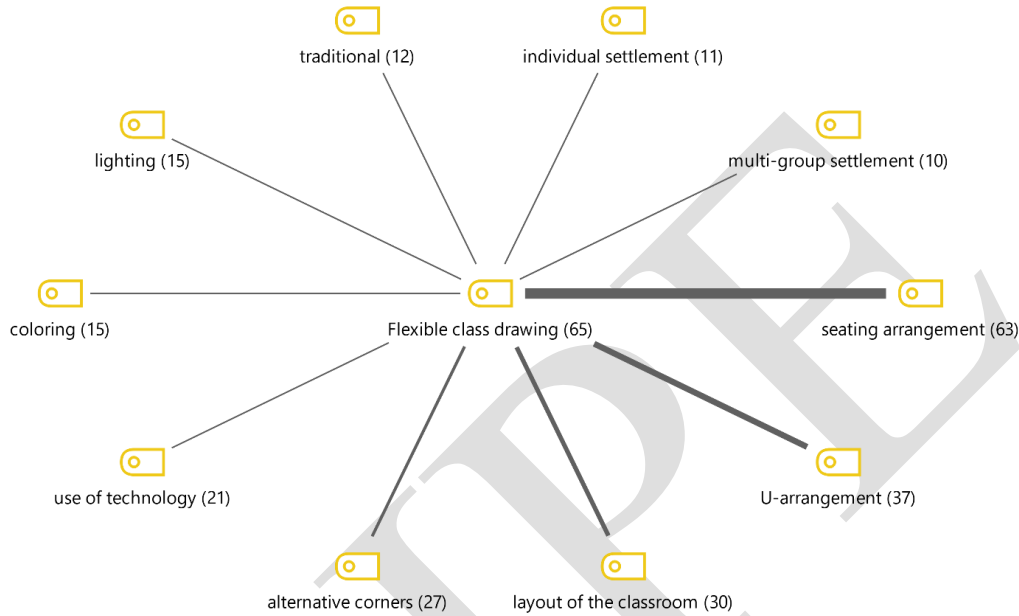


Figure 3. Flexible class drawing code sub-code sections model

It is seen that 37 out of the 63 pre-service teachers who mentioned about the seating arrangement while drawing the flexible classroom, depicted this arrangement in the form of a "u-arrangement". After the "U-arrangement" sitting style, the most traditional sitting style (n: 12) was drawn. It is seen in Figure 3 that the pre-service teachers who expressed their opinions preferred the individual layout (n: 11) in the classroom plan. Some drawings of participants making drawing of flexible class are as follows.

ÖA1:

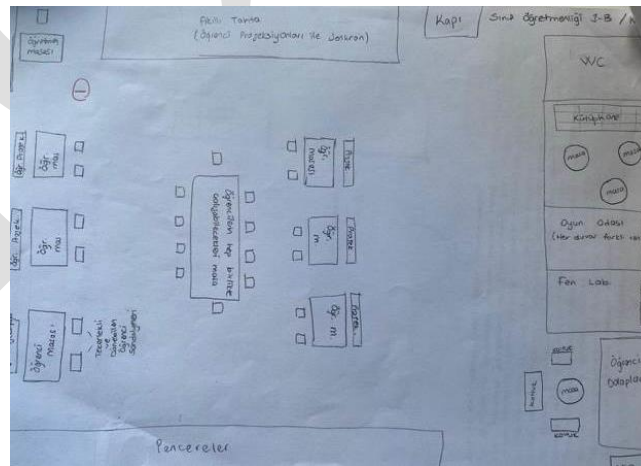


Figure 4. ÖA1's drawing

ÖA1 maintained the traditional seating arrangement constant while defining the flexible classroom visually. It is seen that this layout is supported by tables for different group activities. The participant, who visually defines the flexible classroom, has included spaces such as a toilet, game room and science



laboratory that are common to the use of the whole school, which are within the school but not specific to the classrooms, unlike traditional classrooms. Hence, he planned to make the class become more autonomous. He thought that lighting would be provided by adding windows to an entire wall of the classroom, and he created parts where students would be given individual spaces.

ÖA4:

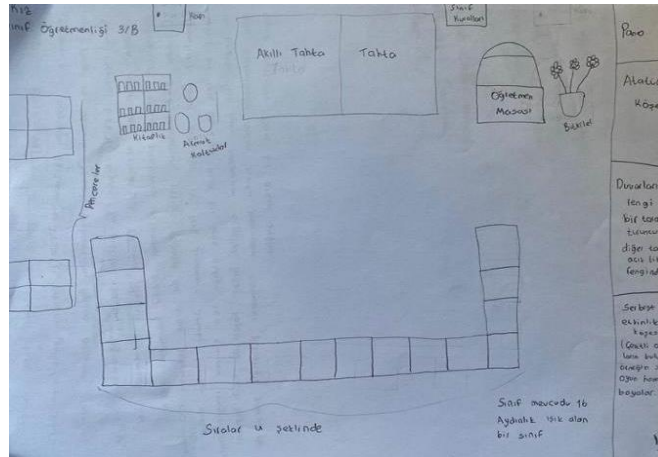


Figure 5. ÖA4's drawing

ÖA10:

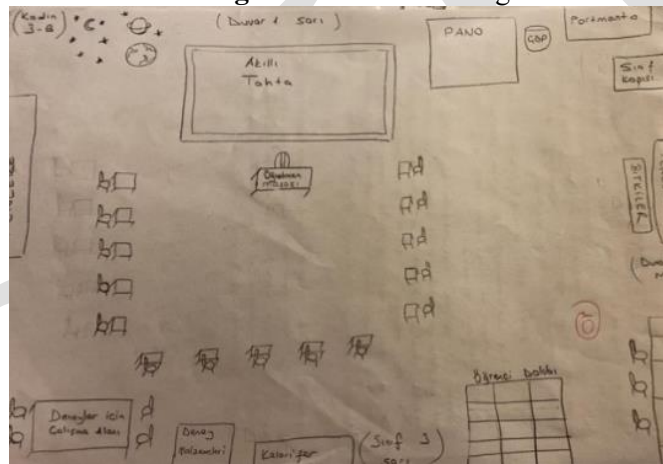


Figure 6. ÖA10's drawing

ÖA2:

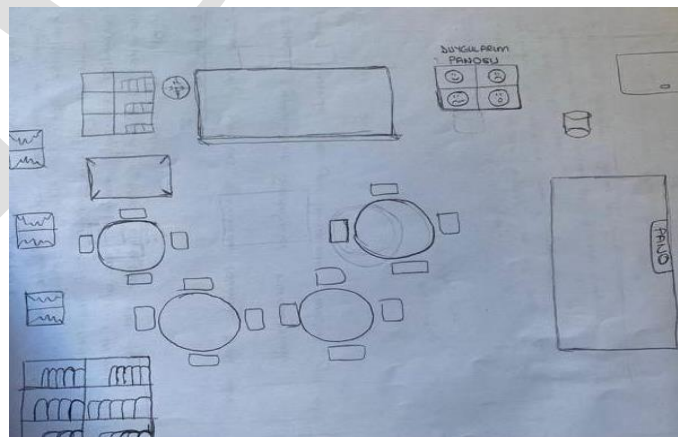


Figure 7. ÖA2's drawing

It is seen that participants ÖA2, ÖA4, ÖA10 mentioned about “u” form of sitting order in the sitting order of desks while establishing physical arrangement of class. Even though the layout differs



individually or in groups in the "U" shaped rows, the traditional classroom layout is generally reflected. PT4 added suggestions for the color and lighting of the classroom in addition to the u plan and did not find a drawing that differed from the traditional classroom. PT10 defined a class that includes alternative corners such as an experiment table with a "u" arrangement in the flexible classroom drawing. The pre-service teachers who designed the classrooms also included structures such as the board, Atatürk corner, library, student locker, which are in the classroom but do not separate the flexible classrooms from the traditional classrooms. PT2 drew the "u" layout while drawing the seating arrangement, while drawing the flexible class with the group layout. It has also added a mood board to the flexible classroom to contribute to school management.

ÖA3:

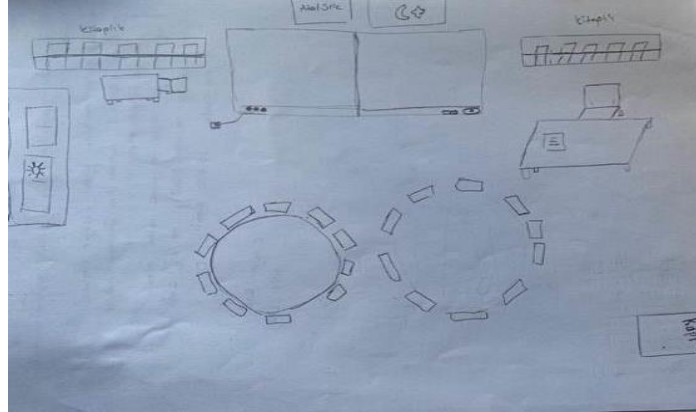


Figure 8. ÖA3's drawing

ÖA63:

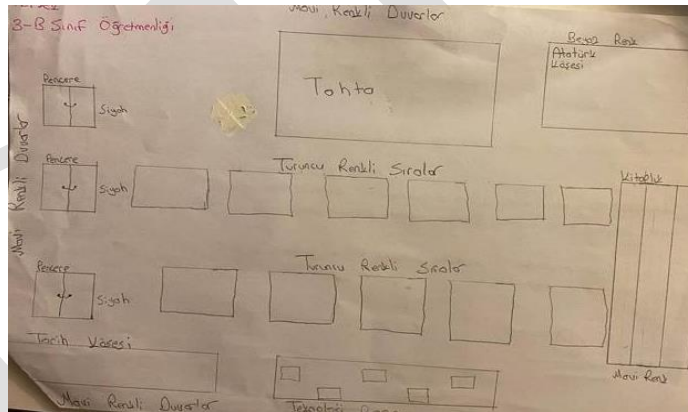


Figure 9. ÖA63's drawing

ÖA11:

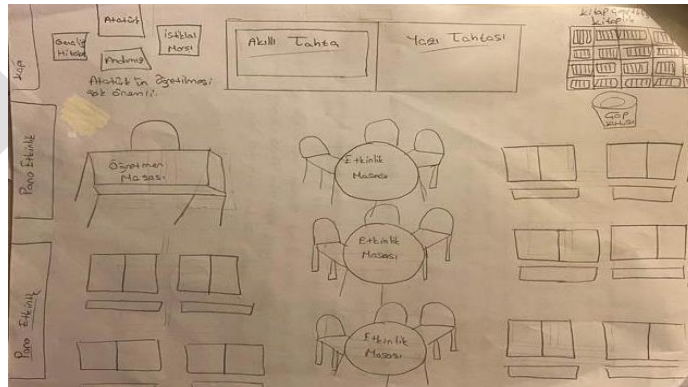


Figure 10. ÖA11's drawing



When we look at the drawings of the participants who visually define the flexible classroom, it is seen that the boards are placed as in traditional classrooms, regardless of the desk order. Although PT11 included activity tables in the classroom, he conveyed the traditional order in the seating arrangement and could not go out of the traditional classrooms. Besides, unlike the traditional classroom, it expanded the Atatürk Corner. When it was looked at, it is seen that the general structure was preserved in the flexible class definition, except for the activity tables, which were added differently from the traditional class.

Examples of some of the drawings of the pre-service teachers who designed the seating arrangement in their drawings according to the grouped layout such as clusters and grouping of groups are given below.

ÖA2:

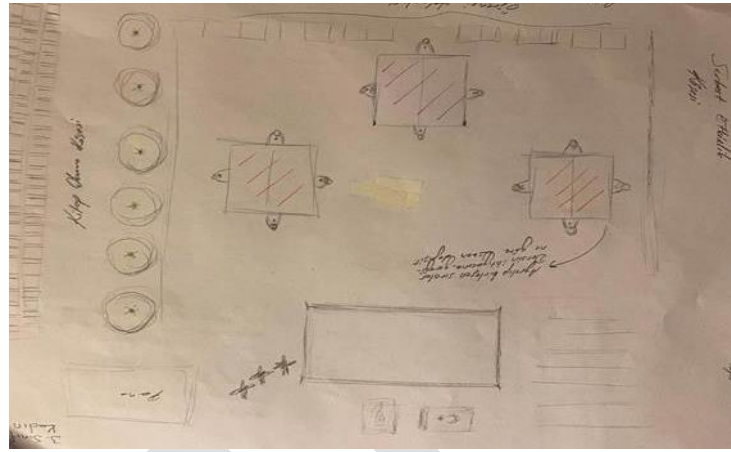


Figure 11. ÖA2's drawing

While drawing for the group layout in the classroom, ÖA2 also added a comfortable and individual book reading corner to the flexible classroom. Thus, it created areas for both individuality and group work in the flexible classroom.

ÖA9:

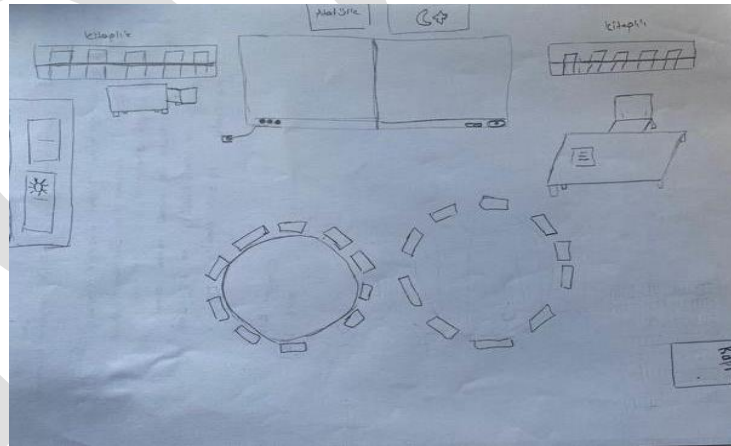


Figure 12. ÖA9's drawing

ÖA9 has defined group settlement order and flexible class visually but apart from this he could not create a drawing other than traditional class structure.

ÖA61 chose a grouped layout while describing the flexible classroom visually, and besides this, he painted a pedestal board rather than the traditional understanding of wood on the wall. This free-standing board can also be projected onto the wall and adjusted for activities. In addition, he included an alternative area to the visual definition of the flexible classroom by taking a rest and relaxation corner. Another variable that differs from the traditional structure is the presence of a food and beverage cabinet



in the classroom. It is understood from this drawing that the flexibility of eating, and drinking will be provided to the students in the classroom.

ÖA61:

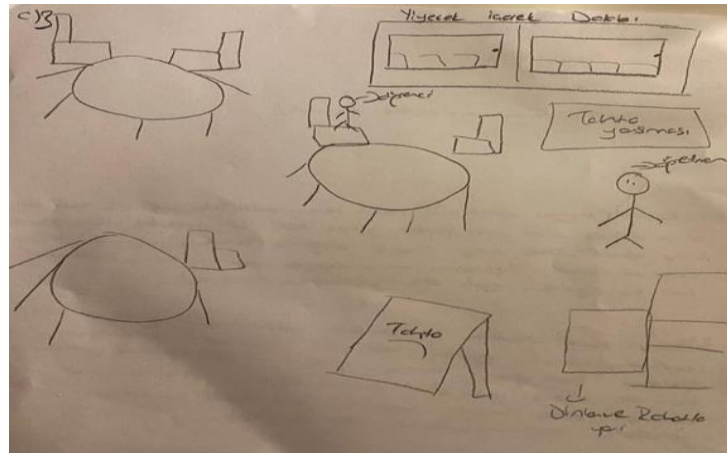
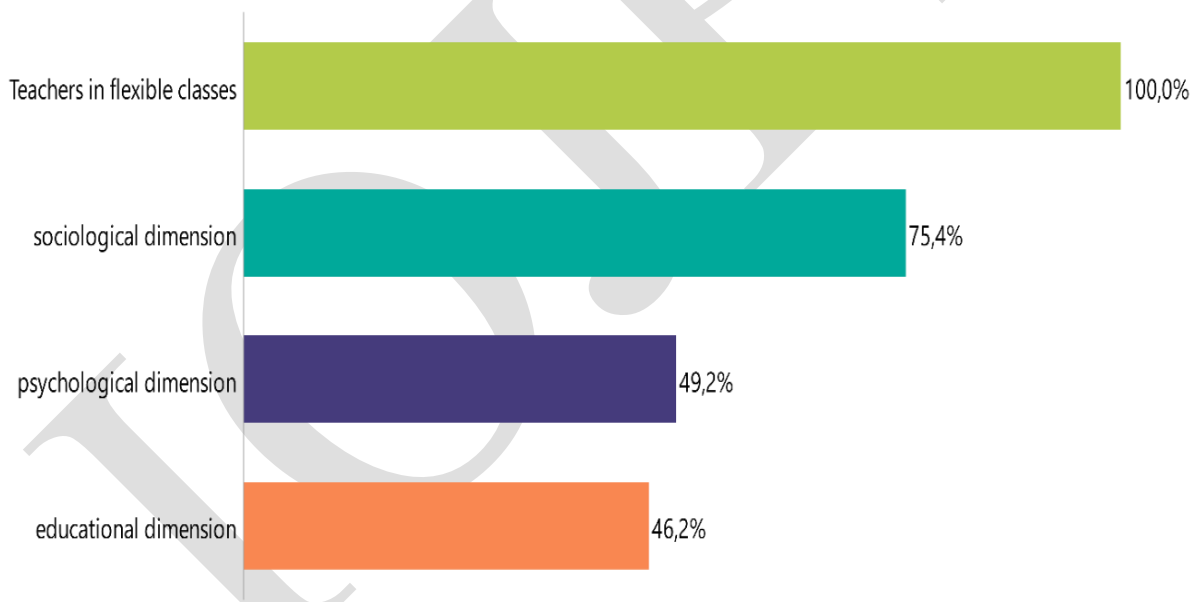


Figure 13. ÖA61's drawing

The data obtained for the third sub-purpose of the study were analyzed in terms of the characteristics that a teacher should have within the framework of the sociological, educational, and psychological dimensions of classroom management defined by Yücel et al. (2012), and the following findings were reached.



Graphic 3. Teachers in flexible classes

As can be seen in Graph 3, the majority of the participants (75.4%) expressed their opinions about the characteristics of teachers who have qualifications within the sociological dimension of classroom management. It is seen in the graph that the teachers who expressed their opinions mentioned the psychological dimension second (49.2%) and the least educational dimension (46.2%).

Some of the opinions expressed by the participants towards teachers in flexible classrooms are as follows.

When defining flexible class, ÖA14 stated as follows.

ÖA14: Teachers are guides and advisors in classroom management. The teacher to whom the logical results model is applied motivates the student and is a teacher who shows



interest. Students are reminded of the rules until they internalize the classroom rules, and when they learn this, classroom management will be easier for the student. The psychoanalytic approach also cares about the structure of the family in the behavior of the student, recognizes the students, realizes the potential of each student, is a teacher with a model of love and logic, is a teacher who respects ideas, but acts as a guide for the student.

According to ÖA14, teachers in flexible classrooms are the ones who use the logical results model and provide internal and external control by motivating students. The teacher of the flexible classroom is a conscious teacher who knows the family and respects differences and applies the necessary model where necessary by mastering the models in classroom management.

ÖA15: Teacher leaves room for student, ensures discipline and order, and enables for training to take place most efficiently.

ÖA19: The teacher in his class is a teacher who loves students, values them, respect and tolerance for differences, besides, a person who can set the rules in the classroom with an effective discipline understanding and his students respect him, he does activities and group works as long as the lessons are appropriate, he tries to make the lessons fun instead of monotonous lectures. He does not give harsh answers to students' questions. on the contrary, in his class. He thinks that the student should be active in the lesson, even though there are no strict rules, the students know what he should do to his lesson.

ÖA14, ÖA15, and ÖA19 have defined teacher in flexible class as teacher providing discipline. According to ÖA19, teacher in flexible class is a person who is loving, knows about differences, understanding and who maintains authority. Besides they stated that teacher in this class must be pleasant and loving against students and that teacher should not be unpleasant.

ÖA26 defines teacher in flexible class.

ÖA26: Knowledgeable, having good communication with his students, sometimes being a teacher and sometimes being a friend of students, acting fairly against students, knowing students well, pleasant, determining class rules with students, making lessons become more pleasant, continuously investigating and learning.

He stated that a teacher must be entertaining and by mentioning about his look, he stated that he must be well groomed.

ÖA32: Teacher in this class is pleasant and nice, he attaches importance to lecturing by attracting attention of students and not just lecturing and living the class.

Participants who expressed their opinions emphasized that the flexible classroom teacher should be friendly, affectionate and open to communication under the sociological dimension of classroom management. In addition, they stated that under the psychological dimension of classroom management, flexible classroom teachers should provide discipline and benefit from management strategies appropriate to the situations in the classroom. They stated that teachers should be qualified and be able to apply the necessary models where necessary. The flexible classroom teacher, who is the person who organizes the teaching, should be fair in the classroom, guide the student and get to know the student.

Under sociological dimension pre-service teachers defined the teacher as consistent, fair, fun, sincere, knowing about student, being at center of class, and acting as guide and has defined teacher under relevant sub-codes and related detailed analysis is given in Figure 4.

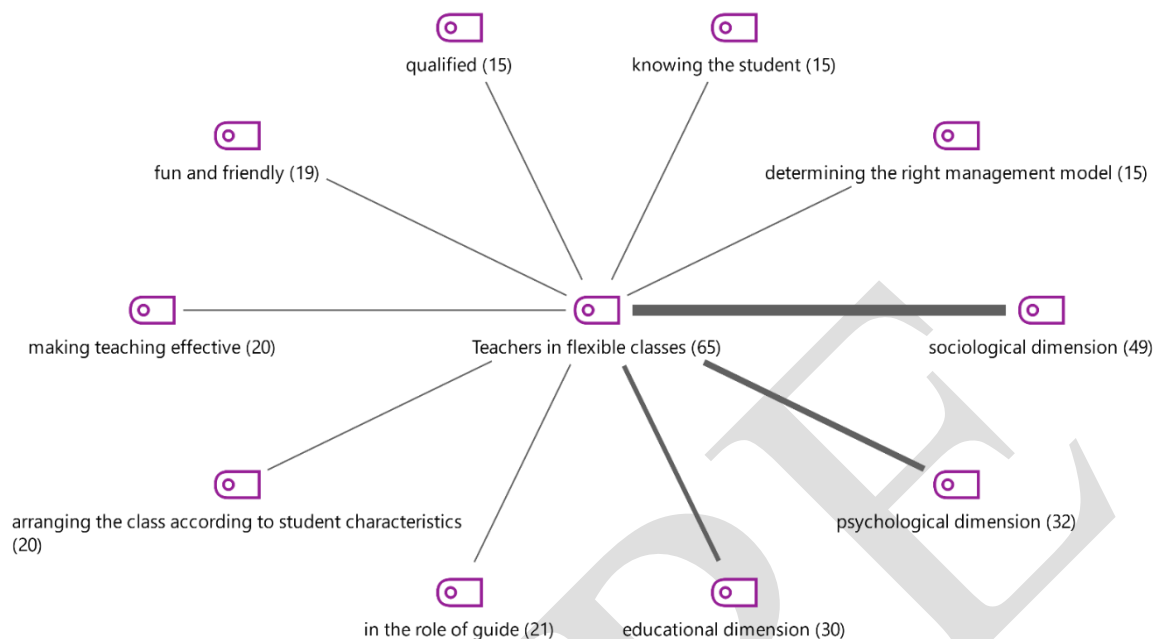


Figure 4. Flexible class teachers code sub-code sections model

The majority of the 49 participants (n: 21) who expressed their views on the characteristics of teachers in the sociological dimension defined the teacher in the flexible classroom as the "guidance" teacher. In the educational dimension, the majority of the 30 participants (n: 20) who expressed their opinions stated that flexible classroom teachers are the teachers who "make the teaching effective". Under the educational dimension, flexible classroom teachers were also defined as "qualified" (n: 15) and "determining the right management model" (n: 15).

Some of the opinions of participants about teachers in flexible class in sociological dimension are as follows.

ÖA35: Teacher in class arrangement must be a guide. He must teach students how they can have access to information. Teacher must approach students as per their development periods. He must know his students well. He should know about situations outside the school. Teacher must act in a way to improve socialization among students. Having many activities in class is helpful to improve class climate. Skills of student must be determined well.

While defining the teacher in the flexible classroom, ÖA35 emphasized the importance of the teacher getting to know the students. The flexible classroom teacher should determine the student's interests and needs, organize the teaching and guide the student. According to PT35, the person who also organizes the communication between the students will be the teacher in this class.

ÖA40: To attract attention of teacher and students to the lesson, to have better contact with them, he has used the class and desks in this form. Personally, he is a more elegant teacher at least against students.

ÖA61: Teacher must guide the students. Teacher and students should learn together. Lessons should be given with plenty of activities and games. In school management, classroom climate must be full of joy, optimism, and love. Teacher should realize management with love.

ÖA62: In the class teacher must approach students by considering cognitive approach and humanist approach of students at the fore in class environment. Teacher must be a guide leading the way for the students. He must be a teacher who respects opinions and thoughts of



students. The purpose of desk arrangement in class is to enable the teacher to see all the students. Classes should be arranged in u form not only to enable the teacher to see students but also to enable for students to see the teacher easily.

Considering the participant's views in terms of the sociological dimension of classroom management, teachers of flexible classrooms should know their students and be in favor of equality. The teacher who will guide the student is the person who increases the interaction and communication in the classroom.

DISCUSSION, CONCLUSION, and SUGGESTIONS

The results of this study, which aimed to get the opinions of pre-service teachers about flexible classrooms and the teachers of these classes, as opposed to more traditional classrooms, are as follows.

Pre-service teachers defined the flexible classroom as classrooms where flexibility in the physical sense and communication are provided, technology is integrated, and student-centered learning is encouraged, differences in learning?, are accommodated, and open communication is possible. Zimmerman (2019) determined, “In a modern learning environment, flexible classroom spaces organically integrate technology, helping teachers to better engage students and facilitate the mix of independent, small-group and whole-group class learning that is now viewed as essential to students’ success. Kennedy (2019) stated, “The goal of flexible learning spaces is to provide students with environments where they can perform to their academic potential. Başdoğan & Morrone (2021) stated in their research with higher education students that the interaction of technology, physical environment and pedagogy increases active learning. YEGITEK (2018) stated that the current student profile in the developing and changing world is constantly developing and changing, therefore, in order to achieve the desired and targeted success, it is necessary to move away from the traditional understanding of education in order to provide students with 21st century skills. Flexibility offers the ability to bring two classes together for group teaching, to divide a single class into small groups and spread them over a larger area, or to combine different classes working on learning activities that do not complement each other (YEGITEK, 2018). Lisa (2019) believes that by changing traditional classrooms to flexible classrooms, students are more engaged in learning and perform better. Göçen, Eral, & Bücü, (2020) in their study, which describes flexible classrooms as the classrooms of the future, they stated that the “class of the future” can be classrooms integrated with technology that supports learning.

Flexible classrooms are classrooms with a small number of classrooms, are comfortable in terms of rules, and have flexible classroom management. Zalud’s (2020) findings suggest that classrooms with flexible seating have a positive influence on student engagement. Physically, these classes show flexibility in terms of goods and accessible equipment. Flexible classrooms are relaxed environments and teacher-student communication is strong. Bekiroğlu, Ramsay, & Robert's, (2021) research results show that flexibility in the classroom can facilitate interaction and participation between students and instructors to create opportunities to encourage both cognitive and affective participation. These results are like the results in the current study where pre-service teachers define flexible classrooms as providing flexibility for communication, which will result in more flexibility in the physical, administrative and instructional dimensions of the classroom. Studies have also shown that flexible classes increase learning (Darling-Hammond et al., 2020, Burgoyne & Ketcham, 2015; Cleveland, 2011, Stapp, 2019, Grimm, 2020; Zalud, 2020). In Wahyudi's (2004) study, it was concluded that there is an important distinction between the perception of preferred and real learning environments and that students tend to prefer a more favorable classroom environment than they experience. In the current study, the pre-service teachers expressed their views on classrooms that were more suitable for teaching that were not like the traditional classroom structure but instead resembled the flexible classrooms they had described in their definitions. In this respect, student and teacher perceptions of preferred classroom environments are similar. Designing the walls of the classroom in such a way that the students' activities are exhibited enables the students to perceive the school as a living space. As a result, students feel more sense of belonging to the school (Ilgar, 2007). When the pre-service teachers’ definitions of flexible classrooms are examined, the definitions are closely related to those adopted by the students with the goal of



teaching effectively. Participants defined a flexible class according to these visual definitions: a classroom supported by technology and created with a group layout in a physically “u-shaped” seating arrangement, with alternative corners for different activities and relaxation. This result is like that of Şahin (2019), that the semi-circular seating arrangement is preferred by the majority of the participating teachers, both because it increases student participation, communication and student success, and because it helps the teacher with classroom management. Pedro et al. (2017) found that school administration, teachers, and students all desire more flexible, reconfigurable, and modern classroom layouts, in which technology and active pedagogical practices can be easily incorporated. Lackney (2000) defined the principles of the educational design as being cost-efficient, learner-centered, progressive, age-appropriate, reliable, comfortable, accessible, flexible, and equity-based.

Teachers mentioned other desired items in the flexible classroom in their drawings from changing the color or the lighting of the classroom to even supplying air conditioning. Other than the seating arrangement, other teachers’ drawings included specific use of technology and finding alternative corners in the classroom. Importantly, the drawings in flexible classrooms also included activity corners that would provide physical comfort to teachers while they carry out in-class activities that support education and training and reveal the relationship between the educational dimension and the physical dimension of classroom management. According to the research findings of Büyükşahin (2019) in which he investigated the effect of classroom ergonomics prepared with flexible seating arrangement on student and teacher motivation, flexible seating arrangement positively affects student and teacher motivation. In this context, it is notable that pre-service teachers emphasize the sitting arrangement the most, and its positive impact on classroom management and learning-teaching activities. Looking at the results of the current research, the teachers also mentioned many other physical dimensions that are important to consider for a classroom. These include physical elements in the classroom such as lighting, coloring, air conditioning, and alternative corners for activities. Şahin, Üstüner, & Korkmaz, (2018) agree that these physical dimensions are important, as they mention the factors that directly or indirectly affect classroom activities. These factors include social and environment factors; the number of students in the classroom; the characteristics of the furniture, light, heat, and ventilation; and the seating arrangements of the students as influenced by classroom activities. According to YALE (2016), the “u-seating arrangement” gives the teacher freedom of movement and provides significant advantages in terms of using the whiteboard and reaching the desired student when necessary. In the U-shaped seating arrangement, the teacher can move freely in the classroom, encourages in-class discussions, and increases participation in discussions. The pre-service teachers’ emphasis on the U-order in their drawings supports these findings in the literature. According to the pre-service teacher definitions, a teacher takes the role of a guide, knows the students, plans teaching by knowing student?, differences, ensures interaction in the classroom and is egalitarian. Hulac et al. (2020) and Wright (2020) indicated that there is limited research on the effects of flexible seating and questioned if the positive implications are due to teacher management or flexible seating.

In addition, in the educational dimension, pre-service teachers defined a qualified teacher as the person who makes teaching effective and determines the right model for classroom management by providing internal and external control. In an experimental study conducted by Demir-Yıldız & Tatik, (2019) on flexible classroom arrangement, they concluded that there was no effect of the flexible classroom environment on students’ learning. On the other hand, in the pre-service teachers’ definition of the flexible classroom teacher, it is assumed that teaching in a flexible classroom will be effective, and a positive change is expected on student learning. Höbek & Üredi (2017) conducted a study of primary and secondary school teachers on classroom management, and they found that teachers have a high tendency towards classroom management, behavior management, time management, organizing the educational environment, and relationship arrangements. Like the literature, the definitions of flexible classroom teachers by the pre-service teachers indicates that they are the individuals who make the environment suitable for the student and determine the appropriate method in classroom management. Based on the opinions of pre-service teachers and in agreement with similar results specified in the literature, it is possible to define a flexible class as a technology-integrated comfortable class aiming for



student success. Furthermore, this required student-centered training is established due to effective physical order, which is different from the traditional class structure in a physical and managerial sense and is within the frame of sociological and educational dimensions.

Suggestions

Based on the results of the study, suggestions for teachers who provide school management and are practitioners and for future research are listed below.

- ✓ Teachers can be given freedom regarding the physical layout of the classroom and teachers can design classrooms more comfortably according to the needs and characteristics of students. For this purpose, a budget can be allocated by the Ministry of National Education and teachers can be promoted.
- ✓ Subjects related to flexibility in classroom management and physical arrangement of the classroom can be presented to prospective teachers during their teacher education.
- ✓ A similar study can be repeated by obtaining the opinions of teachers and school administrators about flexible classes.

Ethics and Conflict of Interest

The authors declare that the study has not unethical issues and that research and publication ethics have been considered carefully. The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The ethical committee approval was obtained for this research from Çanakkale Onsekiz Mart University Scientific Research Ethics Committee with the decision numbered E-84026528-050.01.04-2200018231 dated January 20, 2022.

Limitations

In the study, data were collected only from primary school teacher candidates. This can be accepted as a limitation to approach it with a wider framework. Another limitation concerns the answers to the questions. The research is limited to the answers given by the teacher candidates to the questions.

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