

CLASSROOM MANAGEMENT IN HIGH SCHOOL MATHEMATICS
LESSONS: STUDENT AND TEACHER PERCEPTIONS

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To my family...

Classroom Management in High School Mathematics Lessons: Student and Teacher
Perceptions

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Classroom Management in High School Mathematics Lessons: Student and Teacher

Perceptions

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August 2021

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

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ABSTRACT**CLASSROOM MANAGEMENT IN HIGH SCHOOL MATHEMATICS LESSONS:
STUDENT AND TEACHER PERCEPTIONS**

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M.A. in Curriculum and Instruction

Advisor: Asst. Prof. Dr. Armağan Ateşkan

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The aim of this study was to examine perceptions of high school mathematics teachers and high school students about classroom management strategies. Furthermore, the commonalities and the differences between the students' and the teachers' perceptions were explored. For this intention, both qualitative and quantitative data were collected. Firstly, mathematics lessons were observed in the 9th, 10th, and 11th grades. Then, Classroom Management Evaluation Questionnaire was applied to 123 high school students at the end of the observed lessons. Lastly, after the lessons, semi-structured interviews were conducted with six high school mathematics teachers. The perceptions were investigated in eight themes as starting the lesson, using eye contact, voice and body language, making transitions, maintaining group focus, managing the time, anticipating problem situations, giving praise and encouraging students and, applying classroom rules. The perceptions of teachers and students about the implementation of classroom management strategies were found mostly positive and parallel to each other. However, the differences of perceptions were explored in terms of maintaining group focus and giving praise. Even though most teachers indicated they couldn't keep all of their students active in the lesson, students claimed otherwise. Moreover, the perception of the students that the teachers use praise in the lesson was found to be lower in comparison with the other strategies. On the other hand, all the teachers thought that they used praise and encourage their students to the lessons.

Keywords: Classroom management, Classroom management strategies, Mathematics lessons, Teacher perceptions, Student perceptions

ÖZET

LİSE MATEMATİK DERSLERİNDE SINIF YÖNETİMİ: ÖĞRENCİ VE ÖĞRETMEN ALGILARI

Ayça Sipahioğlu

Eğitim Programları ve Öğretim Yüksek Lisans Programı

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Bu çalışma lise matematik öğretmenleri ve öğrencilerinin sınıf yönetimi stratejileri hakkındaki algılarını incelemeyi hedeflemiştir. Ayrıca bu algılar arasındaki ortaklıklar ve farklılıklar da ortaya konulmuştur. Öncelikle 9, 10 ve 11. sınıf düzeyinde matematik dersleri gözlemlenmiş, gözlemlenen derslerin sonunda öğrencilere Sınıf Yönetimi Değerlendirme Anket Formu uygulanmıştır. Çalışmaya 123 öğrenci katılmıştır. Derslerden sonra çalışmaya katılan altı matematik öğretmeni ile yarı yapılandırılmış görüşmeler yapılmıştır. Sınıf yönetimi stratejilerine yönelik algılar derse başlama, göz teması ses ve beden dili kullanma, aktiviteler arası geçiş, grup odağını koruma, zaman yönetimi, problem durumlarını öngörme, öğrencileri övme ve cesaretlendirme olarak sekiz temada incelenmiştir. Öğretmen ve öğrenci algıları genellikle birbirine paralel bulunmuş ve her iki tarafın da algıları stratejilerin genellikle uygulandığı yönünde olmuştur. Grup odağını koruma ve öğrencileri övme ve cesaretlendirme konularında öğretmen ve öğrenci algılarında farklılıklar tespit edilmiştir. Öğretmenlerin çoğu tüm öğrencilerini derste aktif tutamayacaklarını belirtse de öğrenciler aksini düşünmüşlerdir. Ayrıca öğretmenlerin derste övgü kullandıklarına ve öğrencileri derse teşvik ettiklerine ilişkin öğrencilerin algıları diğer stratejilere göre daha düşük bulunmuştur. Öte yandan tüm öğretmenler öğrencilerini derslere teşvik ettiklerini ve övdüklerini düşünmüşlerdir.

Anahtar kelimeler: Sınıf yönetimi, Sınıf yönetimi stratejileri, Matematik dersi, Öğretmen algıları, Öğrenci algıları

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CHAPTER 1: INTRODUCTION

The necessities of the classroom vary depending on the content of the course and associated teaching techniques. One of these necessities is keeping students actively involved in lessons. Mathematics is often a course in which students are biased; many students do not enjoy mathematics lessons. Keeping students busy with the lessons is an effective way to avoid this prejudice. When students are actively involved in a lesson, this often means they are not sitting quietly at their desks. To activate students more, proper activities should be chosen by teachers according to interest of the students (Babadjanova, 2020). They are often involved in hands-on experiences and may be encouraged to leave their seats, work in groups, and to call out answers. While these activities have the benefit of engaging students to the lessons, the teacher may find monitoring student behavior more challenging. For this reason, effective classroom management is very important. The current study analyses students' and mathematics teachers' perceptions of classroom management to improve the effectiveness of classroom management strategies.

In this chapter, background, problem, purpose, research questions, significance, limitations and definitions of key terms of the study are given.

Background

A large part of the education life of the students who will shape the future is spent in the classrooms. Therefore, classroom life is crucial for teachers and students, who are the most important factors in the classroom environment. Some of the most important competencies that today's students should acquire in this classroom environment are 21st-century skills. 21st-century skills include problem-

solving and critical thinking, ability to apply, manage, and create technology. Larson and Miller (2011) outlined three key components to bring 21st-century skills into the classroom. The first one is to create environments where students can work in communication and collaboration by providing collaborative problem-solving and inquiry-based activities, the second one is providing complex and diverse learning opportunities, and lastly, providing enriched lesson contents that address many levels in Bloom's taxonomy (apply, analyze, synthesize, evaluate) to develop innovative thinking and problem-solving skills. These skills, as well as technology have strong links with mathematics (Wagner, 2008). Mathematics lessons, with both theoretical content and application areas, offer good opportunities for developing these skills. PISA defines mathematical literacy as:

The individual's capacity for formulating, employing and interpreting mathematics in variety of contexts. It also includes making mathematical deductions and applying mathematical concepts, procedures, facts and tools to describe explain and predict phenomena. Mathematical literacy helps people to identify and understand the role that mathematics plays in the world, and to make the well-founded judgments and decisions required in life by constructive, engaged and reflective citizens. (The Organisation for Economic Co-operation and Development [OECD], 2013, p. 25)

This definition emphasizes the importance of mathematical literacy which could be improved by mathematics education. In mathematics education, problem-solving, and critical thinking skills ought to be learned with interactive methods. Critical thinking needs intellectual skills such as analysis, synthesis, reflection, and these skills ought to be learned by active performing. Only lecturing is not proper to

improve these skills because generally, students do not have a chance to ask questions in lecturing and that makes the lesson dull (Chukwuyenum, 2013).

Mathematics teachers have many responsibilities within and outside of regular instructional programs, such as to provide equity in the classroom, to help students reach their potential, to prepare extra-curricular activities to motivate the students and help them to discover their interest (Smith & Posamentier, 2015). In addition to these, learning by inquiry and the ability to make real-life connections with mathematics topics is crucial. All of these responsibilities require proper classroom conditions. This is why using effective teaching methods is so important in mathematics education. Unfortunately, making a learning environment in which students are active is not easy and requires skilled teachers.

One of the problems that teachers face when trying to make mathematics more interactive is classroom management issues. Activities in mathematics lessons often require stronger classroom management ability; therefore, some teachers avoid trying different activities or using different teaching methods with their students. Biza et al. (2015) wanted to explore how pre-service teachers see themselves in the mathematics lessons while they are dealing with classroom management and mathematical learning. Their study has shown that for many participants, classroom management issues have priority and mathematical learning issues were made limited reference or ignored according to many participants. Similarly, teachers at the beginning of their teaching career mostly concentrate on being able to answer the questions or dealing with misbehavior in the lessons, instead of focusing on students' learning (Keskin, 2020).

Classroom management involves all the things a teacher should do to encourage students to cooperate and participate in the activities. To prevent

classroom management problems in mathematics lessons, the teachers should use different teaching methods and technology actively (Dirlikli et al., 2015). Well-managed class characteristics include learning engagement at a high level, clear expectations of behavior, minimum level of disruption, time-wasting or confusion, and a pleasant climate (Martin, 1990). Some educators define classroom management as "discipline" and consider good classroom management as being able to control students' behavior. Although in the 1970s, classroom management was mostly considered as behavior management and application of rules, the needs of students also changed with the changing world. Different perspectives on classroom management have emerged. Hardin (2008) investigated the perspectives under three categories, classroom management as discipline that focuses on maintaining classroom control, classroom management as a system that builds the learning society, and classroom management as instruction that focuses on developing students' prosocial skills.

Problem

Mathematics is the oldest discipline among all; it is constantly evolving and has a serious impact on the quality of life of people (Ahmed & Bora, 2011). This discipline contains information about how to transfer information from theoretical knowledge to daily life. Also, mathematics and science inform students about life and gives experience. Mathematical problem solving, scientific inquiry, and technological innovation are the main ideas of creative and collaborative engagement in today's world outside of schools. To make interaction with the world involves creative mathematical problem solving each day (Adams & Hamm, 2014). Problem-solving, mathematical reasoning and critical thinking have a strong relation. Critical thinking emerges in a mathematical curriculum with a pedagogy that

supports students' ability to contribute, affords processes of reasoning and questioning, and engages students intellectually challenging tasks (Jablonka, 2014). With a curriculum that has this pedagogy, mathematics teaches students how to develop logical thinking and to use reasoning skills; thus, they learn to apply mathematics to resolve in real life problems (Yılmaz & Kömleksiz, 2011).

Achievement in mathematics lessons gives an idea about how much the student can learn the skills and how to prepare for the future. Unfortunately, mathematics achievement of high school students in Turkey has not been improving. Even though the university entrance examination changed in 2018 (it is now the Examination for Higher Education Institutions [YKS]), student performance in mathematics is still poor. YKS is a two-stage university entrance exam, and the first stage is Core Proficiency Test (TYT). TYT mathematics exam consists of 40 basic mathematics questions. The main purpose of the exam is to measure the skills of using basic mathematical concepts, applying abstract operations using basic mathematical relations, and applying basic mathematical principles and operations in daily life (The Measurement, Selection and Placement Center [ÖSYM], 2021). The fact that the distribution of the number of correct answers is between zero and seven among 40 questions, shows that students' basic mathematics skills are not at a sufficient level. This situation in mathematics achievement has provided an environment for different studies about factors affecting mathematics achievement. Dursun and Dede (2004) stated that some of the factors affecting the mathematics achievement were physical conditions of the schools and classes, the teaching strategies used and giving a good listen to the course. These factors indicate the relationship between classroom management and achievement in mathematics.

Classroom management is more than controlling student behavior. It includes an efficient classroom environment and all activities to improve student engagement and collaboration (Martin, 1990). In this case, teachers and students are the two most important elements of classroom management. Teachers apply classroom management methods and students experience them. There have been studies investigating factors that affect the classroom management, including teacher competencies and teacher and student views. For example, Can and Arslan (2018) determined students' perceptions about their teachers' classroom management competencies. Examining teachers' and students' perceptions together is important. Exploring the perspectives of students and teachers in the evaluation of classroom management in mathematics courses is useful in describing the points of agreement and disagreements of opinions. Thus, problems in classroom management could be discerned and solutions could be determined.

Purpose

The main purpose of this study is to examine mathematics lessons in a foundation high school in Ankara in terms of classroom management. The reason for this focus is to explore views and any differences and/or commonalities of opinions that students and teachers have on this subject. Through mixed-method study, observations were made in mathematics lessons and the questionnaires were applied to the students after these lessons. Last, the interviews with the teachers were done and analyzed. Observation notes were used to see to what extent they support the students' or the teachers' perceptions. Using the information about perceptions of the teachers and the students and, how the students' perceptions of classroom management are different from the teachers' suggestions were made to improve classroom management.

Research Questions

This study addresses the following questions:

1. What are the high school mathematics teachers' perceptions about their classroom management strategies?
2. What are the high school students' perceptions about their mathematics teachers' classroom management strategies?
3. To what extent do high school students' and high school mathematics teachers' perceptions about classroom management strategies have commonalities and differ from each other?

Significance

Effective classroom management plays an important role in the success on efficiency in the lessons. In classrooms with good classroom management, implementation of teaching activities is easier which increases the effectiveness of the lesson.

Classroom management strategies and evaluations may vary from individual to individual. It is important that teachers and students, who are the two most important factors in the classroom, have shared opinions in class management evaluation and have parallel ideas about which method is efficient. In this way, an increase in classroom management and therefore efficiency of the lesson can be achieved. Results obtained from this study have a potential to give important information to teachers about high school students' views on classroom management within mathematics classes in Turkey. Attitudes that teachers think are appropriate but not considered so by students are determined. According to this information, teachers may revise their ideas on classroom management and thus make the course

more efficient in terms of classroom management. In addition to these, if there is a difference in the strategies, reasons of these differences can be examined.

Lastly, when the theses written in the field of classroom management in Turkey are examined, it is seen that quantitative methods are frequently used, the vast majority of the theses analyzed are designed in quantitative method, and qualitative and mixed methods are not used very often (Aydın et al., 2018). This study contributed to the studies in Turkey in the field of classroom management with both quantitative and qualitative data as a mixed-method convergent design research.

Limitations

This study was conducted with 123 high school students and six high school mathematics teachers in Ankara at one school. Sample would be able to be enlarged with different schools and cities. The school where the research was conducted is a foundation school which is another limitation of the study. That is why the results could not be generalized for all of Turkey.

Definition of Key Terms

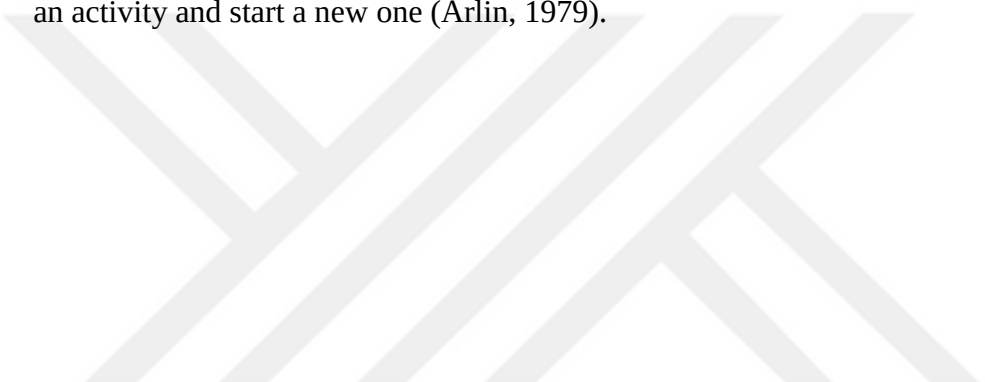
Classroom management: It has been defined as the actions and strategies teachers use to maintain order in the classroom in the more classical sense. (Doyle, 1986) In this research, classroom management indicates the actions taken for creating and maintaining a learning environment that provides successful instruction which consists of arranging the environment, establishing rules and procedures, maintaining students' attention to lessons and engagement in activities (Brophy, 2006).

Maintaining group focus: Maintaining group focus is the ability to draw students' attention, to keep students on task, alert, attentive, and make them actively involved in activities, learning procedures (Charles, 1999).

Non-verbal communication: “Direct communication between people by a means other than the spoken word; includes facial expressions, gestures, eye contact and body posture.” (Statt, 1998, p.92)

Perception: “Student perceptions are thoughts, beliefs, and feelings about persons, situations, and events.” (Schunk & Meece, 1992, p. xi) In this research, teacher perceptions are also taken into consideration as their thoughts, beliefs, and feelings.

Transition: Transition is defined as a directive given by the teacher to finish an activity and start a new one (Arlin, 1979).



CHAPTER 2: REVIEW OF RELATED LITERATURE

Introduction

This chapter provides information about the background and the framework of the study. First of all, classroom management and approaches to classroom management have been introduced. Then, students' and teachers' perceptions about classroom management have been stated and studies specifically in mathematics teaching are included.

Classroom Management

Even if the term “classroom management” evokes an order in the classroom in the first place, it includes more than that. Classroom management concentrates on the ways of establishing and maintaining safety and workable place for students and groups in a classroom, instead of focusing punishments and resolutions of misbehaviours only (Burden, 1999).

There are different models and approaches accepted in classroom management to manage the situations and to maintain order. One of the common models is based on the level of control in classroom management. There are three categories under the umbrella of this model which are low-teacher control approaches, medium-teacher control approaches and high-teacher control approaches (Burden, 1999). However, because of the fact that the class is a very active and variable area, there should be changes in approaches that are appropriate for classroom management. It has been found that old models could not serve enough to create calm and safe classroom environment (Landau & Stollenwerk, 2000). Due to those reasons, another classification has been made based on the views of classroom

management; classroom management as a discipline, classroom management as a system and classroom management as an instruction (Hardin, 2012).

Classroom Management as a Discipline

According to classroom management as a discipline, main focus is discipline. Firstly, the control in the class should be maintained then the instruction comes. Behavioral Management, Assertive Discipline, Positive Classroom Discipline, Logical Consequences models have been given in this view of classroom management.

Behavioral Management

Behaviorists believed that behavior is learned so it could be modified and changed. This behavioral change concentrates on here and now, not on the past events. Thus, environment is critical to understand and identify students' behavior. Behavioral approach focuses on increasing the desired behavior and decreasing the undesired behavior. There are three elements of behavior managements; reinforcement, punishment and extinction. Reinforcement is used to make the desired behavior more repetitive, on the contrary punishment reduces the likelihood of the undesired behavior. Lastly, extinction is an event to annihilate a behavior by ignoring or not reinforcing it (Hardin, 2012).

Assertive Discipline

Assertive discipline offered by Canter emphasizes the appropriate usage of classroom rules and their consequences (Emmer & Gerwels, 2006). Firstly, rules, procedures, and consequences of broken rules should be established. Acceptable and unacceptable student behavior needs to be clarified. Then reward system should be defined for both individual students and also the whole class. The procedure must be followed consistently. Assertive discipline suggests taking support from school

administration and parents by informing them about the procedure. Also, children's rights such as consistent encouragement, being informed of the consequences of the behaviors and, being informed of the expected behavior are highly important.

Positive Classroom Discipline

Fredric Jones, who has grounded Positive Classroom Discipline, has argued that classroom control can be maintained and learning can occur by negative reinforcement, proximity control (walking around the classroom, being at each desk) and effective body language. Positive Classroom Discipline is shaped under four components; classroom structure, limit setting, responsibility training, and backup systems (Hardin, 2012). Classroom structure should be adjusted in such a way that the teacher can be mobile maximum and the barriers between teacher and student are minimal. The technical equipment used should not be allowed to impede mobility. Limit settings refers to training students in terms of rules, not just defining the rules. To provide this, proper body language should be used. For responsibility training, students are promoted to follow the rules by incentives. Positive classroom discipline suggests a systematic backup system to apply if there is a problem in implementation of the limit setting or the responsibility training.

Logical Consequence

The logical consequences program established by Rudolf Dreikur advocates that behavioral consequences should be natural or rationally linked to the behavior (Hardin, 2012). Students have a real learning environment if we allow them to face the consequences of their acts (Dreikurs, 1964, as cited in Tauber, 2007). For providing this experience, consequences should be related to the undesired behavior, reflect a real social order, and should not be related to the moral judgment (Tauber, 2007).

Classroom Management as a System

In this view, the focus is on developing learning communities. Instruction is related with management and management should occur in a systematic way.

Discipline with Dignity, Classroom Organization and Management Program (COMP), Building Community and Discipline without Stress Punishment and Reward models have been given in this view of classroom management.

Discipline with Dignity

Disciplinary problems and conflicts have always existed since the existence of schools. Allen Mendler and Richard Curwin have agreed on that “one size fits all” policy of classroom management is not fair and effective (Hardin, 2012). They have developed a theory "Discipline with Dignity" to conflict of discipline problems.

Discipline with dignity has three-pronged approaches that are prevention, action, and resolution. According to the principles of Discipline with Dignity, everyone at school is to be treated with dignity. This theory provides a guide for teachers and, here the steps are;

1. Let students know what you need, and ask them what they need from you.
2. Differentiate the instructions based on each student's strengths.
3. Listen to what students are thinking of and feeling.
4. Use humor.
5. Vary your style of presentation.
6. Offer choices.
7. Refuse to accept excuses, and stop making them yourself.
8. Legitimize misbehaviors that you cannot stop.
9. Use a variety of ways to communicate with children.

10. Be responsible for yourself, and allow children to take responsibility for them.
11. Realize that you cannot reach every child, but act if you can.
12. Start fresh every day. (Curwin et al., 2008, pp. 21-24)

One of the important aspects of discipline with dignity is a social contract. This model argues that the social contract, which is an agreement that consists of rules, values, and consequences, should be developed between the student and the teacher. The social contract is an opportunity for the teachers to show students that their opinions and ideas are important. Also, it has an important role to support students to be a decision-maker. Moreover, many teachers think that social contract has helped to save their careers (Curwin et al., 2008). According to Burden's grouping of classroom management approaches by the degree of control, discipline with dignity is under the umbrella of medium-level control approaches (Burden, 1995).

Classroom Organization and Management Program (COMP)

Carolyn Evertson has developed Classroom Organization and Management Program as a result of long researches. There are four key principles for COMP; prevention is preferred instead of handling the problematic situation after it occurs, instruction and management are connected, while developing rules procedures and classroom management needs, students should be active in the process and their differences should be taken into account and, teaching practices can be changed by professional collaboration (Hardin, 2012).

Building Community

Kohn emphasizes that the main purpose of education is raising good people not only good learners. However, punishments, praises, or privileges could change

students' behavior, not their characteristics. For these reasons, Kohn argues that for effective classroom management, communities should be built in the classroom, traditional punishments, and focusing rewards and praises should be changed (Hardin, 2012).

Discipline without Stress Punishment and Reward

This classroom management model is also known as Marvin Marshall's total system (Charles, 2014). Classroom management and discipline should not be considered as the same thing. Classroom management is a responsibility of a teacher and the procedure of practices. However, discipline is the responsibility of the students and is the behavior that should be followed (Marshall, 2005). According to him, emotion follows cognition that is why; thoughts should be changed to change an emotion (Charles, 2014). During inappropriate behavior, the teacher asks the student to think about the reason and the level of the chosen behavior. If the behavior persists, the student must face with the consequences.

Classroom Management as Instruction

Focus mostly occurs while developing peaceful habits and teaching prosocial behaviors to students. Inner Discipline, Positive Behavior Support, Conflict Resolution and Peer Mediation and Judicious Discipline models have been given under this view of classroom management.

Inner Discipline

According to Barbara Coloroso's Inner Discipline, classrooms are proper places to teach students to take responsibility and self-control. While learning these, students should be respectful of the rights of those around them. Teachers should be the ones who provide this learning environment to students. Coloroso has suggested a three-step process when critical misbehavior exists; restitution, resolution, and

reconciliation. The first one restitution is the process of repairing the damage.

Resolution is recognizing and rectifying the reason of the misbehavior in order not to face it again. And lastly reconciliation is the process of making the people whose feelings were hurt by the misbehavior better (Charles, 2014).

Positive Behavior Support

It is a classroom management approach that includes three-step prevention. The first stage primary prevention is to prevent the development of an undesirable behavior. The second stage secondary prevention takes place when an undesirable student behavior occurs and individualized behavior management is used for prevention. The main purpose is to teach the students to self-monitor their behaviors by developing prosocial skills. If there is severe student misbehavior for which primary and secondary prevention is not enough, lastly tertiary prevention concentrates on highly individualized behavior management.

Conflict Resolution and Peer Mediation

It is an alternative classroom management approach that supports the development of students' conflict resolution skills and argues it by using this skill; students can resolve peer conflict in classrooms. Three conflict resolutions are recommended for teachers and students; mediation, negotiation, and consensus decision making. When the students learn how to apply these processes successfully, they will be more likely to use conflict resolution in other areas of life (Hardin, 2012). When conflict occurs, first the students should come together and try to solve the dispute. If students could not negotiate, an objective third party helps them to negotiate the conflict resolution thus; mediation takes place (Johnson & Johnson, 2011). Lastly, consensus decision making which is a group problem-solving strategy could be applied by arranging class meetings.

Judicious Discipline

Justice, freedom, and equality rights of students and responsibilities should be worked in a proper time, place, and manner. In this perspective, classroom management issues could be solved by considering students in class as citizens of democracy. Creating classroom rules together with students by using state interests and, solving problems in the classroom via meetings are suggested for this model.

Teachers' Perceptions about Classroom Management

Teachers' awareness should be raised about their role in education and the importance of critical link between achieving goals and creating an atmosphere that enables and encourages learning (Kalin et al., 2017). At this point, it is crucial to understand teachers' perspectives on classroom management strategies to provide a better teaching environment. Ignoring the perspectives of teachers who are one of the main participants of interaction in the classroom is not a correct approach in teaching and teacher education (Woolfolk Hoy & Weinstein, 2006). This part of the study has been devoted to the perceptions of teachers in classroom management.

Yeğen (2019) evaluated students' and teachers' opinions in terms of primary school teachers' classroom management competencies. In the study in which 155 4th grade teachers participated, it was determined that according to the teachers' opinions the highest competency areas of the teachers in classroom management are reviewing (revisiting the previous topics and summarizing the topic in transitions and, consolidating the topics by different examples) the topic, taking into account the individual differences, and managing the behavior. The areas in which the teachers have relatively lower proficiency compared to other areas are method/technical diversification and arrangement of the learning environment.

One of the necessary components to ensure a positive learning environment is time management which is an important dimension of classroom management in the lessons (Özden, 2005). Britt (1997) found negativities in teachers' perceptions of time management both during the lesson and outside of the class. In the study in which beginning teachers' perceptions were investigated, an open-ended questionnaire was applied to 35 first and second-year teachers. It was noticed that there were teachers who could not teach as detailed as they wanted because they spent a lot of time on classroom management issues during the lesson. The study showed that beginning teachers were overwhelmed and desired more lessons on classroom management and discipline. While time management can be difficult for beginner teachers, the time flow of the lessons may not progress as expected for experienced teachers, either. It would be useful for teachers to write down how many minutes each activity will take in the lesson plan, to prepare an extra supportive activity in case of an early-ending activity, or to take notes at the end of the lesson about where the unfinished activity is (Jensen, 1980).

Teaching and Learning International Survey (TALIS) 2018 conducted by Organization for Economic Co-operation and Development (OECD) revealed some important points about teachers' classroom practices, based on secondary school teachers' reports. TALIS 2018 results asserted that 72% of classroom time is spent on actual teaching and learning, and this amount of time was decreased by 6% in the past ten years in Turkey (OECD, 2019). The research also showed that 93% of the teachers in Turkey think that they explain the relation between the new and old topic in their lessons and, 84% of them regularly assess students' progress by observing.

In-class observation not only allows the teacher to determine the level of understanding of the students, but also allows the teacher to get to know the students

and thus, establishes a better relationship. Egeberg et al. (2020) suggested that teachers think caring relationship is one of the important components of an effective classroom management. They conducted a study with 50 teachers to understand how they manage their students' behaviors in the class. From the teachers, 25 of them were chosen as effective in classroom management by their students and the study revealed that those teachers believed that for an effective classroom management, caring relationship, behavior management and instructional management are important. According to them, for establishing a positive relationship, encouragement, trust, high level of expectations and appropriate challenges are essentials.

In order to increase success in classroom management, it is important to increase the level of awareness in the area. In this context, the more problems that the teachers experience in classroom management can be identified, the easier it may be to eliminate them. In a study conducted with 14 high school mathematics teachers in Turkey, it was determined that the primary problem faced by the teachers with different years of experience in classroom management was the low interest of the students in the lesson (Dirlikli et al., 2015). Classroom management problems were divided into two categories as environment-related and student-driven, in the analysis of semi-structured interviews conducted in the study by aiming to reveal the views of teachers. According to the teachers, lack of infrastructure and technical equipment and noise at schools are among the problems originated from environment-related problems. In terms of student-driven problems, attending the lesson without preparation and inadequacy in basic mathematics skills are coming after low interest to the lessons.

One of the most basic skills to be taught in mathematics lessons is problem-solving skills. Özreçberoğlu and Çağanağa (2018) investigated the relationship between acquisition of problem-solving skills and, time management and plan-program management which are the two dimensions of classroom management. In the study, which was conducted with the 9th grade high school mathematics teachers in the Turkish Republic of Northern Cyprus, interviews were conducted to understand the teachers' views and data were analyzed by content analysis. The researchers emphasized the importance of a well-designed lesson plan to provide students permanent learning when teaching problem-solving in mathematics lessons. At that point, managing the time spending in the lessons effectively and, achieving teaching different problem-solving strategies are linked with how the lesson plans are constructed. Their study suggested that helping teachers to use the time effectively and efficiently and, training teachers about curricula helps to achieve developing students' reasoning skills.

When teacher opinions have been examined, it is of great importance to understand the pre-service teachers' opinions. Nkhata et al. (2016) investigated mathematics and science education student teachers' perception of their classroom management practices with 112 student teachers. For data collection, focus group discussion and a questionnaire were used in the study. Student teachers' perception of practicum in terms of classroom management and their challenges in classroom management practices were revealed at the end of the study. Student teachers defined the areas of the challenges they face in terms of classroom managements as large classes, inadequate infrastructure, and lack of resources, discipline, and disruption of classes. Moreover, in one part of the research it was revealed that

according to the student teachers, effective classroom management requires efficient time management, proper planning and implementing the plan.

Ayebo and Assuah (2017) determined the conceptions of classroom management and control of undergraduate pre-service teachers. The majors of 72 participants consisted of mathematics education, social studies education and science education. Of them, 40% were from mathematics education. The results of this mixed-method study showed that high majority of the pre-service teachers preferred rule-based conceptions instead of dominance or nurturance conceptions. They believed that rule-based is the most suitable conception to control the class. According to the results of the analysis, the pre-service teachers especially agreed that the rules and their results should be applied consistently, rules should be determined at the beginning of the year, and that creating positive expectations from students would prevent undesirable behaviors.

Examining the ideas of trainee and in-service teachers about classroom management at the same time provides an advantage to see how experience has guided teachers about classroom management. Rosas and West (2009) determined some differences in the beliefs of pre-service and in-service teachers. They conducted a research with 5306 pre-service and 1159 in-service teachers from different majors in Ohio. Pre-service teachers indicated a higher level of confidence in most of the statements than in-service teachers. However, pre-service teachers indicated a low confidence in having techniques to intervene and direct quickly when an undesirable behavior occurs. In the study it was noticed that both in-service and pre-service teachers indicated high confidence in calming the students, motivating the student with low interest in the lesson, applying the rules and ensuring that the students followed the rules.

Students' Perceptions about Classroom Management

The interaction in the classroom is shaped around the teacher and student, and usually, the teacher is the party that prepares and creates the proper environment. Students' beliefs are needed to be considered by the teachers and they need to affect their students' opinions about lessons in a positive way (Sekreter, 2018). For an effective and successful learning environment, these arrangements made by teachers should be approved by students (Fend, 2002, as cited in Scherzinger & Wettstein, 2018). Therefore, understanding students' views on classroom management may contribute to the effectiveness of the learning environment.

Gündüz and Can (2013) examined the students' opinions of teachers' conformity of the classroom management principles. The study was conducted with 586 students from different middle schools and high schools in Turkey. They investigated the classroom management principles in two sub-dimensions; complying with the principles of teacher-student relationship and complying with the principles of education. The first sub-dimension that is the principles of the student-teacher relationship includes items such as teachers' use of body language, showing that they like the positive behaviours of students, applying classroom rules equally to all students, anticipating and preventing problems before they occur. According to the results of the study, teachers' conformity of teacher-student relationship was found low. This sub-dimension includes items related to applying rules, using body language, anticipating and preventing problem situations. The second sub-dimension which is conformity of the principles includes items such as making eye contact with students, calling students by name, entering and leaving class on time. Teachers' conformity of this sub-dimension found at a moderate. Overall, teachers' conformity

to classroom management principles found at a moderate by the students, which was less than expected.

Understanding the level of teachers' conformity to classroom management principles allows teachers to take precautions. In addition, researching students' expectations and perceptions from teachers about classroom management also provides great convenience to teachers for understanding students. Thus, more efficient changes can be made in the lessons. Infantine and Little (2005) aimed to examine students' perceptions about their troublesome behaviours and their attitudes towards teachers' efforts to reduce these behaviours. Classroom Behaviour Problems and Attitude towards Disciplinary Methods questionnaire was used as an instrument. Participants were consisted of 350 secondary school students from 12 different schools in Victoria. According to the results of this quantitative study, when secondary school students behave inappropriately, they prefer being reprimanded quietly, and likewise when they behave appropriately, they prefer being praised quietly. Moreover, students agreed that teachers' attempts to control classroom behaviour take too much time. Researchers suggested that the amount of time can be reduced by educating both teachers and students about classroom management.

Like Infantine and Little (2005) and Şahin and Arslan (2014) investigated effects of teachers' strategies against students' undesired behaviours. Their study revealed that teachers' strategies used for misbehaviours have different effects on students than teachers' expectations. From 15 different elementary and middle schools, 15 teacher and 35 student participants took part in their study. Both teachers' and students' perceptions were gathered by semi-structured interviews. As a result of the research, it was seen that some of the classroom management

strategies applied to prevent undesired behaviours in the classroom had positive effects on students and some had negative effects. The study showed that being warned one-on-one (not in front of the whole class) or by using nonverbal methods had positive effects on students. On the other hand, being punished in the classroom had negative effects on students such as feeling down.

Canter has a realistic perspective and acknowledges that discipline problems occur in the classroom (Tauber, 2007). Establishing proper classroom rules helps to reduce these problem situations. Setting up and applying classroom rules are some of the important components of classroom management. Buluc (2006) investigated the plan, preparation, implementation and evaluation process of classroom rules at the secondary school level. A 66-item questionnaire was applied to the 200 new graduates of secondary school students. According to the majority of the students, regulations are important for classroom discipline, to ensure order and to provide a democratic environment in classrooms. However, they thought that secondary school teachers are not fully able to manage the process of rule preparation. As an illustration, students thought that students, parents, and administrators are not sufficiently involved in establishing the rule process. Moreover, students believed that implemented rules were not enough to teach respect to the authority. According to the students' perceptions, rules should be pedagogically reasonable, fair and in line with social values.

Students' perceptions of classroom management strategies and the effects of strategies on students can be investigated in many different ways. Determining the effects of classroom management and relationships between classroom management and subject areas can be useful to increase efficiency in lessons. According to Kunter et al. (2007), classroom management strategies have effect on students' interest

development in secondary school mathematics lessons. Their study was conducted with 384 students in Berlin, Germany and students' perceptions were investigated by a questionnaire. Questionnaire results showed that the students' perceptions about rule clarity and monitoring during the lesson by teachers have positive relation with students' interest to the mathematics lesson.

In relation to in class management, according to the study of Kalin et al. (2017), in which 437 high school students evaluated the classroom management of 10 high school mathematics teachers, the items with the highest score in the classroom management scale was related to the teacher's clear expectation from students. Items with the lowest scores were related to trusting students, encouraging them to participate in the lessons and encouraging them for learning from their mistakes. Moreover, their study showed that primary school students evaluate their teachers' classroom management strategies more positively than high school students.

Classroom management is a complicated concept that contains lots of teacher responsibilities. One of these responsibilities is organizing and implementing teaching to maximize accessibility of learning for students (Evertson & Weinstein, 2011). To achieve this, the importance of creating an effective learning environment cannot be ignored. Vandecandelaere et al. (2012) investigated the connection between students' perceptions about the learning environment and mathematics attitude. In the study conducted with TIMSS 2003 data and 4353 eighth grade students, mathematics attitude was examined in three aspects; mathematics academic self-concept, enjoyment of mathematics, and perceived value of mathematics. The findings of the study revealed that the learning environment is linked to the enjoyment of mathematics. It is suggested that for increasing the enjoyment in

mathematics lessons Equilibrium Model should be taken into consideration which underlines the importance of motivating exert learning, activating self-regulating learning, giving feedback and, structures and steers. This suggestion is associated with classroom management because it contains some components of classroom management such as controlling the class, encouragement in the lesson, the relationship between the teacher and the students and, transitions.

Summary

The literature review provided information about approaches and perspectives in classroom management and showed the perceptions of teachers and students about classroom management, who are the main characters of the classroom environment. Resources in the literature generally revealed teachers' beliefs, self-efficacy, and difficulties in classroom management. Also, literature review shed light on the students' ideas about the classroom management strategies that teachers use and the strategies they prefer and find effective. In addition, studies provide information about the relation between classroom management and students' interest in mathematics lessons, problem-solving skills, and students' attitudes in mathematics lessons.

Classroom management is a very broad concept that has many components under it. Although there are a large number of studies about classroom management, it was seen that there are limited studies which focus on specifically components of classroom management in high school mathematics lesson. The better it is determined which components of the classroom management have conflicts, the more the awareness of teachers can be increased in that area. Therefore, examining the perceptions of teachers and students about classroom management on the basis of components would contribute to the literature.

CHAPTER 3: METHOD

Introduction

This chapter provides information about the methodology of the study. Firstly, research design, context of the study and participants were introduced. Then instrumentation, method of data collection and method of data analysis were explained in detail.

Research Design

This study is a mixed-method convergent design research. Sometimes one type of evidence does not tell the complete story, and the type of evidence obtained from one stage can differ than evidence obtained from other levels (Creswell & Clark, 2007). In these types of situations, the only quantitative or qualitative approach is not enough that is why mixed-method research is preferred for this study.

For the current study there are three research questions:

1. What are the high school mathematics teachers' perceptions about their classroom management strategies?
2. What are the high school students' perceptions about their mathematics teachers' classroom management strategies?
3. To what extent do high school students' and high school mathematics teachers' perceptions about classroom management strategies have commonalities and differ from each other?

When the research questions were taken into consideration, it was considered appropriate to understand students' ideas with close-end questions in the

questionnaires because there were sufficient numbers of students. However, as the number of teachers was limited, obtaining verbal information was proper so, it was decided to interview the teachers to gain deeper opinions of them. Lastly, the perceptions of the researcher about the teachers' classroom management were collected by observation of their lessons. In this way, both qualitative and quantitative data were collected. There are three main mixed methods design which are the convergent design, the explanatory sequential design, and the exploratory sequential design. In the convergent design, the researcher collects separately both qualitative and quantitative data, analyzes and merges the results then interprets those (Creswell & Clark, 2018). Thus, convergent mixed method design was found suitable for the current study.

Context

The study took place in the foundation high school in Çankaya, Ankara, Turkey. The school which has more than 25 years of experience as a foundation high school provides both the Ministry of National Education (MoNE) and the International Baccalaureate (IB) Diploma Programme (DP) to the students. In addition, the school was in the transition phase of the IB Middle Years Programme (MYP) while the research was being conducted. The teachers were working extensively on this subject. Each lesson takes 40 minutes in the school. There are 5 minutes break between the lessons except for the first break time which is 15 minutes to give students time to have a breakfast. Some lessons are set as block lessons for some of the classes.

The majority of the student profile consists of the students who come from the middle school of the same school. However, external students are also accepted. Within the school, the entrance/scholarship exam is applied and, new students are

selected according to this exam. The mathematics questions of the exam consist of open-ended questions which are assessing middle school objectives.

In the school, there are mathematics classrooms which are used just for mathematics lessons. Generally, desks are arranged in sets, and it is a decision taken by the administration. In some lessons, because of this arrangement, some of the students were sitting with their backs to the board. This situation caused distraction. There are mathematics formulas, tips, geometric shapes and IB learner profiles on the walls of the classroom. In general, the number of students in the mathematics lessons ranged from 10 to 25. According to the observations, projection machines were actively used by the teachers. However, because the projection quality was not very high, the classroom lights had to be kept off or the curtains had to be closed in the lessons. Only in this way, the students could see the board. However, this caused the classroom to be dark and created a disadvantage in terms of classroom management.

Participants

For this study, convenience sampling method was used to choose the participants. Convenience sampling is a sampling method which the researcher chooses a group of individuals who are available to participate to the study (Fraenkel & Wallen, 1993). This sampling is a non-probability sampling method that is the most commonly used technique in researches and useful especially it is not possible to reach the whole population and the population size is large even representing the entire population is weak (Maheshwari, 2017). The researcher chose an experienced foundation high school which provided the appropriate conditions such as the availability of the school, the willingness of

teachers to participate, ensuring sufficient participation from the students, and the suitability of the teachers' schedule.

There are seven mathematics teachers in the foundation high school and six of them participated in the study. One of the seven teachers could not participate in the study due to his or her busy schedule. The teacher participants consisted of four female and two male mathematics teachers. The teaching experience of teachers is given below (Table 1).

Table 1

Teaching Experience of the Teachers

Teacher	Experience Year in This School	Total Experience Year
A	11	19
B	22	24
C	7	18
D	18	18
E	10	12
F	8	12

As can be seen from the Table 1 above, the teachers' total years of experience in teaching vary between 12 and 24 years, and the teachers' years of teaching experience in this school where the study is conducted vary between seven and 22.

Teacher A took the students' attention at the beginning of the lesson by homework control, material check and reminding them the classroom rules. She or he used time effectively, gave clear instructions, and assess students' understanding in transitions. But she or he was not aware of all the students and did not move

around the classroom much. The use of praise to motivate students to the lesson and the use of facial expressions were used less comparing the other teachers.

The most used classroom management strategy by Teacher B was the frequent use of students' names. She or he constantly communicated with the students and tried to keep them active in the lesson. Awareness of the teacher about students was high. Students were able to express themselves freely in the classroom. Another remarkable strategy about classroom management was that the teacher's instructions given in the transitions were very clear.

Teacher C had an effective start to the lesson. She or he took students' attention, informed them about the lesson plan and gave clear instructions especially at the beginning of the lesson. She or he prevented the disruption in the lesson by repositioning the students' desks. The teacher used her or his voice to drown out the students' voices. Moving around the classroom was not observed too often. It can be said the teacher was not able to see all of the students because of the cluster seating arrangement in the lessons.

Teacher D waited until all of the students were ready to start. It was observed that she or he used the tone of voice more effectively than the other teachers. The teacher was careful about the use of the whiteboard but did not move around the classroom much. She or he made no effort to take attention of the students who did not cause problems but had less participation in the lesson. Also, the teacher was careful about giving clear and short instructions in the transitions.

Teacher E preferred to take the students' attention by chatting with them about daily life at the beginning of the lesson then started teaching. As a transition, she or he made a review of the previous lesson. For maintaining group focus the teacher asked questions to the students frequently. In this sense, she or he had strong

communication with the students. The teacher tried to encourage students to be active in the lesson by emphasizing the importance of making mistakes in the lesson and correcting these mistakes in the lesson. She or he did not interest in the arrangement of the desks and did not move much between the desks.

It can be said that medium level classroom management was used in the lessons by Teacher F. Students could stand up and move around in the classroom for several times. At the beginning of the lesson, she or he was careful about taking the students' attention and informing the students about the lesson plan. The teacher did not make any extra effort to take the attention of the students who were not interested in the lesson. She or he often warned the students verbally or by moving around them. When students made a mathematical mistake, the teacher always tried to correct their mistakes by explaining with examples.

There were 123 high school student participants who attended to the study. The grade level and gender distributions of the students are presented in the Table 2 below.

Table 2

Grade Level and Gender Distribution of the Students

Grade level	Female	Male	Total
9	17	21	38
10	32	15	47
11	20	18	38
Total	69	54	123

As seen in the Table 2, of the student participants, 69 (56%) were female and 54 (44%) were male. During the study, three ninth grade classes, three tenth grade

classes and three eleventh grade classes were observed in the mathematics lessons. Within the high school student population, 38 (31%) were ninth graders, 47 (38%) were tenth graders and 38 (31%) were eleventh graders. The achievement level of the students varied in the classes. Twelfth graders did not volunteer and participate in this study, because they were getting prepared for the university entrance exam.

Instrumentation

In accordance with the purpose of the research, data were collected to obtain the perceptions of students and teachers and to support them with the classroom observations of the researcher. Throughout the study, three different instruments; one quantitative and two qualitative, were used to collect data. The quantitative instrument is:

- Classroom Management Evaluation Questionnaire

And the two qualitative instruments are:

- Semi-Structured Interviews
- Classroom Management Observation Form

Classroom Management Evaluation Questionnaire

Classroom Management Evaluation Questionnaire was developed by the researcher inspired from Classroom Management Observation Form. After the questionnaire was developed, it was sent to an expert. The expert review helped to ensure its content validity. With the guidance of the expert, some corrections on the wording and some arrangements on the meaning of the questionnaire were made. Then, it was approved to be conducted with the students. The questionnaire consisted of two parts; both of them are formed in parallel with the observation form. In the first part, there are eight five-point Likert type questions to explore students' opinions about the classroom management strategies during the lesson (beginning,

middle, and end). Strategies for which students' ideas were taken in this part are related to arrangements in the classroom, gaining students' attention, being aware of students, time management and use of voice. The options for the five-point Likert scale of the questionnaire were “strongly disagree”, “disagree”, “uncertain”, “agree” and “strongly agree”. In the second part of the questionnaire, there are nine yes/no questions to see whether the general strategies such as using students’ names, making eye contact, giving praise, applying class rules were observed or not. Students’ responses for the first eight questions that are five-point Likert type questions were coded as scores in the range of 0-4. The intervals in Table 3 were taken into consideration for the evaluation and interpretation of the scores obtained.

Table 3

Score Intervals of the Five-point Likert-type Classroom Management Evaluation Questionnaire

Level	Score Interval Range
(0) Strongly disagree	0.00 - 0.79
(1) Disagree	0.80 - 1.59
(2) Uncertain	1.60 - 2.39
(3) Agree	2.40 - 3.19
(4) Strongly agree	3.20 - 4.00

Since the questionnaire consists of two parts, two different reliability tests were conducted. For the first and the second part of the questionnaire, Cronbach’s Alpha was .94 and .72 respectively. Content validation is a process of detecting the represent ability of the items in terms of skills, knowledge or whatever is measured (Wiersma & Jurs, 2005). See appendix A for the English version of the Classroom

Management Evaluation Questionnaire and see appendix B for the Turkish version of the questionnaire.

Semi-Structured Interviews

From the three types of interviews which are fully structured, semi-structured and unstructured interview, semi-structured interview was selected for the study. Semi-structured interviews usually consist of predetermined questions however, the researcher does not have to adhere to the verbatim questions, and questions can be shaped around to the topic (Adams, 2015). To explore the teachers' opinions clearly and deeply about the evaluation of their classroom management strategies, it was decided to conduct semi-structured interviews.

The researcher interviewed the teachers face-to-face. The advantage of the face-to-face interview is they are based on synchronous communication, there is no significant time-delay between answers and the questions so, and the answer of the interviewee is more spontaneous, without an extended reflection (Opdenakker, 2006).

The interview protocol consisted of 15 semi-structured open-ended questions (see Appendix C). Within the interview questions, four of them were obtained from the study of Paliç and Keleş (2011) where the necessary permission was taken from them. Other 11 questions were written by the researcher, in parallel with the questions of the Classroom Management Evaluation Questionnaire that applied to the students. While the first seven questions of the interview questions were about general opinions and applications of teachers about classroom management, other eight questions were about evaluation of the lessons that is observed by the researcher, in terms of classroom management.

The Classroom Management Observation Form

Robson and McCartan (2016) argue that observation is suitable to be used as supportive or supplementary method and that makes it applicable for the mixed method designs. To explore teachers' classroom management strategies, the researcher observed their mathematics lessons and fill in the Classroom Management Observation Form. Lesson Management and Classroom Control Observation Form that is developed by YÖK and the World Bank in 1998 used but some adaptations have been made (See Appendix D). To obtain more detailed information, the researcher added some questions and developed the Classroom Management Observation Form (See Appendix E). After the development, it was sent to the expert and it became ready for use after revisions were made according to expert feedback and its applicability was approved.

The Classroom Management Observation Form consists of two sections. In the first section, there are 12 statements to be filled in about the management strategies of the teacher like classroom organization, maintaining attention, transitions and time management. In the second section, there are seven statements about other strategies asked whether they were observed or not, like eye contact, using students' names, praising and monitoring. There is also "other observations" section for different situations that may have attracted the researcher's attention.

Method of Data Collection

The final version of the instruments was completed at the end of the April 2019. Later on, MoNE permission was secured. After obtaining MoNE permission, principal of the school and head of mathematics department were informed about the study and their permissions were taken for the data collection. Afterward, mathematics teachers were informed about the study and volunteer ones participated

in the study by filling in the informed consent form. Required permissions were obtained from the teachers with the Teacher Permission Form (See Appendix F). In the spring semester at the beginning of the May 2019, after the information and permission processes, schedules were created with the teachers, for the data collection. The lessons for data collection were decided along with the teachers, according to their schedule. The arrangements were done considering data collection from the lessons with the students of different levels. Observation, questionnaire and interview processes were completed in May 2019.

Within the context of the study, the researcher observed nine mathematics lessons and used the Classroom Management Observation Forms during the observations. The researcher entered the classroom with the teachers and observed the lessons from the beginning to the end of the lessons. All of the observed lessons were 40 minutes. The last 5-10 minutes of the lessons were devoted to the Classroom Management Observation Questionnaire prepared for the students.

To examine students' opinions, The Classroom Management Evaluation Questionnaires were administered to 125 students. Of them, 123 were returned which resulted in the sample population. Parents' information and permission letters were sent to the families of the students who participated in the study in advance. After the closure of the lessons the teachers introduced the researcher. The questionnaires were distributed in the classroom by the researcher and completed by the students at the end of the lesson. Before the students started to fill the questionnaire, all of them were informed that their names are not required and their answers will not be shared with any teachers, by the researcher. While the researcher was conducting the questionnaire, mathematics teachers did not interest with the students, they left the classroom or they were busy with their own work at the

teacher desk. The questionnaire required approximately 10 minutes. While the students filled out the questionnaire, the researcher answered the students' questions about the questionnaire.

Observations, surveys and interviews were conducted one after another. After each lesson observed, the researcher interviewed the teacher face-to-face right after the lessons. The observed lessons were chosen in such a way that the teacher could be interviewed without entering any another lesson. Thus, it was aimed that the teacher could evaluate the observed lesson better with considering more details. Before the interview, each teacher was informed about the content of the interview and its privacy. In order to make the teachers feel more comfortable and express themselves better, the interviews were conducted one to one. All the interviews were recorded with digital voice recorder. The interviews took approximately 15 minutes.

Methods of Data Analysis

Quantitative Data Analysis

The quantitative data were obtained from the Classroom Management Evaluation Questionnaires. The data analysis was carried out by using descriptive statistics using the Statistical Package for Social Sciences (SPSS, v. 19.0). There are 17 items in the Classroom Management Evaluation Questionnaire; eight of them are rated by using five-point Likert scale. Mean values and standard deviations were given as a result of these eight items. Other nine items had two response options that are “yes” and no”. For these items, the percentages were used to represent the data.

Qualitative Data Analysis

The qualitative data of the research consisted of semi-structured interviews with the teachers and the Classroom Management Observation Forms filled by the researcher.

Burnard et al. (2008), claim that there are two main qualitative data analysis methods as inductive and deductive. In deductive approaches, the researcher applies their theories or structure to the data before the analysis. On the contrary, the inductive approach does not contain or contains little predetermined theory, and, it is the most prevalent approach for qualitative researches. Inductive approaches use the data to infer the structure of analysis. In this research the data analyzed with no predetermined theory so, an inductive approach was used.

For the semi-structured interviews, the answers given by the teachers to the open-ended questions were transcribed. After the transcription, the semi-structured interviews were translated from Turkish to English. Letters A, B, C, D, E and F were assigned to each teacher as pseudonyms to keep the teachers' personal data confidential. Then all verbatim transcripts were read carefully for several times. For the qualitative data in vivo coding were used to code the data. In vivo coding allows researcher to use participant's own words or short phrases in the data, as code (Miles et al., 1994). This well-known method is also proper for thematic analysis (Given, 2012). Thematic analysis method was used to analyses the data. Thematic analysis is the process of classifying qualitative data into clusters of related entities, or conceptual categories, and identifying consistent patterns (Figgou & Pavlopoulos, 2015). Students' and teachers' perceptions are organized under eight themes; starting the lesson, using eye contact-voice and body language, making transitions, maintaining group focus, managing the time, anticipating problem situations, giving praise and encouraging students and applying classroom rules.

After the analysis of the questionnaire and interview data was completed, the observation forms were read carefully several times. Considering the determined

themes, it was identified to what extent the observation notes supported the perceptions of teachers and students.

To control the reliability and validity of a qualitative data analysis there are various techniques and one of them is member checking. Member checking is a process of questioning some of the members of the study about the research to be sure on the accuracy (Fraenkel et al., 2012). This method was used for the current study by getting some help from some of the teachers who participated in the study.



CHAPTER 4: RESULTS

Introduction

This chapter is devoted to presenting the findings of the study that was gathered by using qualitative and quantitative methods to examine mathematics lessons and explore students' and teachers' perceptions, differences, and/or commonalities about classroom management strategies. The findings are presented according to the research questions of the current study.

Findings of the Study

High School Mathematics Teachers' Perceptions about Their Classroom Management Strategies

To explore high school mathematics teachers' perceptions about their classroom management strategies, semi-structured interview questions were used. The perceptions of high school mathematics teachers about their classroom management strategies were investigated under eight themes: starting the lesson, using eye contact-voice and body language, making transitions, maintaining group focus, managing the time, anticipating problem situations, giving praise, and encouraging students and applying classroom rules. Firstly teachers' general beliefs about classroom management were explained and then their specific opinions and perceptions were given under these categories.

Starting the Lesson

All the teachers ($N=6$) stated that before they started the lesson, they did something that would attract attention and help students to be ready for the lesson. No teacher ignores this step, they all thought that they kept order and made the

necessary arrangements, and then they started the lesson. Some of the methods that they mentioned to ensure the order are warning the students, explaining the lesson plan, reminding the rules, giving students time to prepare, and making a connection to the lesson. Half of the teachers ($n=3$) mentioned the importance of making a connection with the previous lessons at the beginning of the lesson. They affirmed that it is effective to remind the previous lesson with the question-answer method or to start the current lesson by summarizing the previous ones. As Teacher E expressed:

I like to summarize previous lesson when I start a new lesson. Because underlining where we were, what we will put on it, are both a recall and a factor that increases the effectiveness of the lesson. In this way, the students pay more attention to the lesson, they do not get messy, which also affects the classroom management.

As could be understood from Teacher E's expressions, in addition to being an efficient method to take students attention at the beginning of the lesson, summarizing the previous lessons also increases the overall effectiveness of the lesson.

During the interviews, some teachers ($n=2$) mentioned that the hunger of students might also affect the beginning of the lesson. To illustrate Teacher D stated that "The students get hungry in the last lesson before the lunch break, that is why they could come to the lesson as scattered. I wait a while for them to get ready for the lesson." The extract below from Teacher E is another example:

Students are allowed to eat out of the school during lunch break, so there may be a few minutes delay in the lesson after the lunch break. I welcome these situations with tolerance; I do not ask a late paper for those who are late.

Using Eye Contact-Voice and Body Language

All the teachers ($N=6$) said that they made eye contact with students, they used their voice effectively and they used their body language. Among these three behaviors, it was the eye contact that all the teachers focused on the most. In Teacher B's opinion, there are some students who lost their attention if the teacher does not make eye contact with them. That is why she or he should be aware and has to pay attention on them always; one of the ways to do this is eye contacting. Teacher A stated:

In my opinion, using eye contact, voice and body language are the most effective methods on the students to keep their attention in class. I usually prefer to make my warnings with eye contact and body language. I do not like yelling, but I lower and raise my voice. Providing discipline by yelling causes loss of the self-confidence of the student, I prefer hard looks instead of yelling.

Two teachers think that making eye contact useful to explore students' understanding in the lesson. Moreover, they could review some parts of the lesson according to this exploration. They confirmed that it is especially useful to check if they understand the answer after question solutions. In this way, teachers can understand whether students can follow the lesson and prevent them from being distracted.

On the other hand, according to Teacher E, students may not always be open to eye contact. She or he faced that situation in the observed lesson and shared her or his experiences as:

There was a student who sat on the back corner and, avoided making eye contact with me in the class, which made harder to communicate with her or him. That is why I felt the need to go there and being around her or him.

Teacher B approached using names and eye contact from another angle. She or he stated: “The students should feel the message “you are here and I see you, I am aware of you”. One of the best ways to achieve this is to use their names and to establish eye contact.”

When voice use is asked, most of the teachers ($n=5$) commented on yelling in the lessons. “Yelling every time is not effective”, “If I want, I can raise my voice a lot” are the statements that some of the teachers mentioned about voice use. Teacher C commented: “It is get used to not yelling a lot, we try to use our voice better because, we need to yell when it is necessary.”

Even yelling is the first thing that they thought about voice usage, one of the teachers mentioned different voice use such as altering the level of voice or changing the tone of voice. Teacher D explained her or his voice usage:

I do not say ‘stop’ or ‘do not do it’ to the students. I either snap my fingers or wait quietly. For example, when there is anybody tries to use mobile phone in the lesson, if necessary, I speak with a harsh tone.

From this statement, “waiting quietly” can be examined as a use of voice. Also, in terms of body language, some of the teachers ($n=2$) indicated they strongly tried to keep their bodies especially their faces turned towards the students. In this respect Teacher D noted that she or he tried to check every student, due to turning toward them was important, she or he used the whiteboard facing the students by standing on the right side.

Making Transitions

Individual interviews with the teachers pointed out similar outcomes about making transitions between activities. All of the teachers ($N=6$) claimed that they paid attention to the transitions, made smooth transitions and the instructions were

clear. When the teachers were asked about the points they paid attention about moving from one activity to another, all of them underlined that they checked whether the students understood the learning objective or not. When most teachers ($n=5$) realize that there is something that students do not know or misunderstand during the lesson, they increase the efficiency of the lesson by adding an unplanned spontaneous activity. Teacher D stated: "When I notice something students do not know, I try to teach this to them without making them realize that I noticed. Thus, I made a smooth transition".

All the teachers ($N=6$) took transitions between activities into consideration as the transition between questions solved during the lesson. In the lessons when the time spent mostly on solving questions, all the teachers agreed not to continue to the next question before making sure the students understood the former question. At this point, to evaluate the students' understanding, Teacher E walked around the classroom and made observations, and asked students whether there is a part that they do not understand. If there was, she or he repeated that part with similar examples and then continued to the next activity.

Interaction between students in the transitions is mentioned by most of the teachers ($n=4$). According to the teachers, when students are allowed to communicate, they could help each other while moving from one activity to another, this helps students to make the instructions clear. Also, teachers ($n=2$) believe that communication between students can increase the effectiveness of the lesson, and there is more student participation in the lessons in which that communication is allowed. Teacher D supported that by stating "It is very effective for students to learn from each other, while one of them is explaining to another student, both can

comprehend effectively. Hereby, students become ready for the next step, new activity".

Teachers ($n=4$) think that the links between activities are very important. Students need to establish the connection between the subject they know and the subject they will learn, so they will feel the need for the new activity. Thus, students grasp the logic behind the activity and why they are applying the activity. Moreover, Teacher A emphasized the importance of clear instructions. According to Teacher A's statement, if the instructions are not clear, then the students get lost in it. For this reason, teachers should be very careful and clear about the instructions.

Summarizing the completed topic or activity and giving students time are given as examples of other strategies for smooth transition. Teacher F indicated that giving students time to write, comprehend and, identify the parts they do not understand helps to make a balanced transition and prevents confusion.

Maintaining Group Focus

Most of the teachers ($n=4$) think it is impossible to keep all students on task in the lesson; they could not maintain the group focus during the lessons. The main reason behind of their thought is that each student's attention span is different. However, other teachers ($n=2$) stated that they kept all the students on task throughout the lesson. Teacher D is one of the teachers who maintained group focus during the lesson, in her or his opinion. Teacher D explained:

Since all students have different attention spans but, on average it is 20 minutes, I tried to use a stimulus every 20 minutes. Sometimes by saying their names out loud, sometimes by finger-snapping. When you warn a student, other students tidy themselves up and concentrate, too. That is how I balance the lesson.

Other than Teacher B and Teacher D, teachers ($n=4$) agreed that they could not keep all students active during the lessons. They all gave a few examples of students that they couldn't keep on task. According to Teacher E, there were two students who did not follow the lesson. One of them was diagnosed with attention deficit disorder, and the other one did not intend to take this course next year, that is why she or he lost interest in the lesson.

Teacher C underlined that the differences in terms of academic achievement level of students in the class makes it difficult to keep everyone on task at the same time.

Generally, those who are the best and the weakest academically tend to lose attention to the lessons. This class consists of students with different levels of academic achievement. For this reason, it is very difficult to involve everyone in the activity at the same time. I tried to differentiate the lesson by giving different tasks according to the current situation in the lesson.

Managing the Time

Although the researcher did not mention the word "plan", all of the teachers evaluated time management whether the lesson was in line with the plan, using the expressions "there was no problem ", "it went as planned". The teachers mentioned that they had reached the point they planned so there was no time management problem. According to their time management perceptions, all of the teachers ($N=6$) managed time effectively.

Additionally, two teachers expressed that there were few questions that could not be solved because time was not enough. Teacher F addressed that issue with this expression:

There are a few unresolved questions left, but that is not a problem. The important thing is to understand what we are doing rather than solving two more questions. There was a subject I noticed the students had forgotten, I spent time for reviewing it, all in all, it is much more efficient for the topic.

Anticipating Problem Situations

Individual interviews with the teachers show all the teachers are of one mind that there was nothing that could cause an extreme problem. Minor distractions and a few students who were talking were remarked by all the teachers. Teachers ($N=6$) stated that they anticipated that kind of situations and took the necessary actions. When they realize students were interested in something different, one of the strategies preferred by the teachers is removing distractions, such as mobile phones. Teacher F reported that the more aware you are of what students are doing, the more problems you can prevent. Some of the teachers ($n=2$) stated that short-term distractions are small details that need to be accepted.

If the teacher goes into the small details, students will focus on the details and the tolerance will decrease in the class environment. Students may have a tendency to act spoiled when there is a different person in the class. There was a student who behaved differently due to your presence, their friends noticed and warned her or him, so I didn't have to do anything extra. (Teacher D)

Time period of the lesson could be a reason for a problem sometimes. Teacher E mentioned that she or he predicted some of the students could be late because the lesson was right after the lunch break. According to her or him, giving those students a little bit more time was enough to prevent problems. That was done in that lesson by the teacher. Planning and preparing of the lessons were discussed in terms of anticipating problems. Teacher C said: "The questions to be solved finished

earlier than I planned, some students were faster than their normal. I had to find additional questions to get all students working, otherwise, a problem could occur”.

Since I knew the questions to be solved in the lesson beforehand, I could more or less predict which question students would get stuck in. That is why I took my precautions beforehand. For example, if it is a question that will be very difficult for students, I gave students more time to work on it. Of course, I am doing this on purpose, thanks to years of experience, I can foresee this. At this point, preparation is very important. (Teacher A)

Giving Praise and Encouraging Students

All teachers ($N=6$) said that they encouraged the students to participate and praises were used during their lessons. Teacher B thought that she motivated the students especially those who remembered the previous topics, by the praises like "you are great", "you did it right", "quite well". Moreover, she or he claimed that giving praise could be defined as a reinforcer that encourages students to participate in the lesson and, in this lesson it worked.

Teacher D expressed that besides praise, he motivated the students by giving plus sign which brings additional points, in the lesson. “Well done” is given as a praise example by Teacher D.

Teacher F stated that:

There is no single solution in mathematics. Sometimes one of the students solves a question and others contribute to the solution. Further, sometimes they can find solutions that I could not see. I like these situations even more and at that time, I emphasize that this is another important solution. I give praises a lot, this is exactly what happened in this lesson.

Applying Classroom Rules

Last question in the interview with teachers was about application of class rules. All of the teachers ($N=6$) stated that the class rules are applied during their lessons. However, Teacher B and Teacher E claimed that there were some rules that were not followed by the students about the dress code. Some of the students' clothes were not met the expectations of the school. Both teachers claimed that this problem is about school rules, not a class. Teacher E added that she or he still felt the need to warn so, warned the students whose clothes are improper.

Teacher A claimed that the teacher should be clear about the rules and underlined the importance of determining the rules at the beginning of the year.

When asked about the application of class rules, teachers ($n=5$) mostly mentioned the rules about taking students' mobile phones away and not allowing them to chew gums, but Teacher C approached classroom rules from a different angle. Teacher C stated:

As the students' grade level increases, the certainties of the classroom rules diminishing. There are clearer rules in primary and secondary school than in high school, but here in high school, it is important to be respectful and not disturb the order. Apart from that, there can be situations such as not being interested in lessons. It happened in this lesson too; I tried to guide the student to something else.

Five teachers' thoughts show that the school should set the rules clearly, be consistent, and then teachers should set the classroom rules for each class. At this point, the importance of being clear in school rules and consistent behaviors by all teachers is emphasized by three teachers.

It is necessary to be consistent in school rules. Perhaps this is the biggest obstacle to the enforcement of the rules. All teachers need to behave equally, and the

administration should monitor the application of rules. Because after I warned students about the rules, if one of the other teachers or administrators sees they and they don't warn about that rule, there will be inconsistency and therefore the student can behave comfortably. (Teacher E)

Teachers ($N=6$) do not have strict views about classroom rules; they think that rules can be determined together with students within the framework of classroom dynamics. However, this does not mean that the application of the determined rules is not clear.

High School Students' Perceptions about Their Mathematics Teachers' Classroom Management Strategies

In this part of the study, students' perceptions were given under the eight categories; starting the lesson, using eye contact-voice and body language, making transitions between activities, maintaining group focus, managing the time, anticipating problem situations, giving praise, and encouraging students and applying classroom rules. The responses of the students were coded as scores. The first eight questions that are five-point Likert-type questions, were coded in the range of 0-4 and a descriptive analysis was performed. The questions between 9 and 17 were the yes-no type of questions. The answers given by the students for these questions are shown as percentages.

Starting the Lesson

Two questionnaire items (statements 1 and 3) investigated students' perceptions about teachers' strategies related to starting the lesson. The results are showed in the Table 4 below.

Table 4

Means and Standard Deviations of Students' Views for Statement 1 and Statement 3 on Classroom Management Evaluation Questionnaire

Teachers	S1		S3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
A	2.77	1.45	3.15	1.16
B	2.47	1.22	2.89	1.41
C	2.58	1.31	3.42	1.02
D	3.17	1.04	3.67	0.69
E	2.33	1.49	3.03	1.27
F	2.55	1.51	2.09	1.51

Note. S1: The teacher organized the desks, chairs and the lesson materials before the lesson started. S3: The teacher gained students' attention then started the lesson.

As seen from Table 4, the mean values of the students' responses for statement 1 ranged from 2.33 to 3.17. With highest mean value and lowest standard deviation, it can be seen that students agreed that Teacher D organized the desks, chairs and the lesson materials before the lesson started. Also, for Teacher A, Teacher B, Teacher C and Teacher F, the students agreed that they organized the desks, chairs and the lesson materials before the lesson started. However, the results for Teacher E show that the students selected the option "uncertain" for the statement 1.

The mean values of the students' responses for the statement 3 are ranged from 2.09 to 3.67. According to the mean values belongs to the statement 3, the students strongly agreed that Teacher C and Teacher D gained students' attention

then started the lesson. On the other hand, the students selected the option “uncertain” for Teacher E.

Using Eye Contact, Voice and Body Language

Students’ views which are related to eye contact, voice use, and body language of the teachers were investigated with the statements 8, 9, 10, and 17 in the questionnaire. Table 5 shows the students’ responses for the statement 8.

Table 5

Means and Standard Deviations of Students' Views for Statement 8 on Classroom Management Evaluation Questionnaire

Teachers	S8	
	M	SD
A	3.31	1.19
B	3.42	1.26
C	2.95	1.55
D	3.72	0.67
E	3.13	1.46
F	2.27	1.85

Note. S8: The teacher's voice was not monotonous; s/he used her/his voice effectively.

With the greatest mean value of 3.72 and the lowest standard deviation of 0.669, students strongly agree that Teacher D’s voice was not monotonous, he used his voice effectively. Furthermore, the students strongly agreed that also Teacher A’s and Teacher B’s voices were not monotonous, they used their voice effectively. However, the results for statement 8 revealed that the students are unsure that Teacher F’s voice was not monotonous, she used her voice effectively.

Overall, a considerably high proportion of the students think that all the teachers used students' names, made eye contact with the students, and used their body language effectively. Nevertheless, 26% of the students think that Teacher C did not use body language effectively. Details for the three items are listed in Table 6.

Table 6

Percentage of Students' Views for Statement 9, Statement 10 and Statement 17 on Classroom Management Evaluation Questionnaire

Teachers	S9		S10		S17	
	Yes	No	Yes	No	Yes	No
A	92	8	92	8	85	12
B	100	0	100	0	95	5
C	89	11	95	5	74	26
D	89	11	100	0	100	0
E	100	0	97	3	93	7
F	100	0	91	9	91	9

Note. S9: The teacher used students' names. S10: The teacher made eye contact with the students. S17: The teacher used body language effectively.

Making Transitions

Two questionnaire items (Statements 2 and 5) were related to transitions between activities in the lessons. Students' perceptions about transitions were investigated with these items. Table 7 represents the results of students' responses to items about making transitions in the questionnaire.

Table 7

Means and Standard Deviations of Students' Views for Statement 2 and Statement 5 on Classroom Management Evaluation Questionnaire

Teachers	S2		S5	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
A	3.46	1.03	3.50	0.99
B	2.84	1.17	2.47	1.39
C	3.26	1.37	3.21	1.27
D	3.72	0.83	3.72	0.58
E	2.97	1.10	2.80	1.27
F	2.18	1.66	2.09	1.51

Note. S2: The teacher set up activities and gave clear instructions. S5: The teacher was able to maintain momentum when moving from one activity to another and the students in the class were not distracted.

According to the mean values given in Table 7, students strongly agree that Teacher A, Teacher C and Teacher D ($n=3$) set up activities and gave clear instructions. For the statement 2, the highest mean value and the lowest standard deviation belongs to students' views for Teacher D. For Teacher B and Teacher E, students agree that these teachers set up activities and gave clear instructions. When it comes to Teacher F, students are uncertain that Teacher F set up activities and gave clear instructions.

Regarding the results of statement 5, students are uncertain about Teacher F was able to maintain momentum when moving from one activity to another and the students in the class were not distracted. The answers given for Teacher D have the highest mean value of 3.72 and the lowest standard deviation so, students strongly

agree that Teacher D was able to maintain momentum when moving from one activity to another and the students in the class were not distracted.

Maintaining Group Focus

Two questionnaire items (statements 4 and 6) were related to maintaining group focus during the lessons. Students' perceptions about maintaining group focus were investigated with these items. Details for these items are represented in Table 8.

Table 8

Means and Standard Deviations of Students' Views for Statement 4 and Statement 6 on Classroom Management Evaluation Questionnaire

Teachers	S4		S6	
	M	SD	M	SD
A	3.46	0.91	3.42	1.10
B	3.16	1.34	3.05	1.08
C	3.37	1.27	3.00	1.11
D	3.67	0.69	3.39	0.85
E	2.77	1.28	2.80	1.27
F	2.18	1.47	1.91	1.22

Note. S4: The teacher was aware of the students who distracted the lesson and made the necessary interventions. S6: The teacher kept students on task, as well as dealing with the students who finished early.

The highest mean value about keeping students on task belongs to statement 4, for Teacher D. To both of the statements in the context of keeping students on task, students agree or strongly agree for all the teachers except Teacher F. Students are unsure that Teacher F was aware of the students who distracted the lesson, made

the necessary interventions and, kept students on task, as well as dealing with the students who finished early.

Managing the Time

Perceptions of students about the teachers' time management in the lessons were analyzed with statement 7 and statement 15 in the questionnaire. Results are given in two tables. Details for the responses of the students for statement 7 are listed in Table 9.

Table 9

Means and Standard Deviations of Students' Views for Statement 7 on Classroom Management Evaluation Questionnaire

Teachers	S7	
	<i>M</i>	<i>SD</i>
A	3.65	1.09
B	3.11	1.15
C	3.32	1.29
D	3.89	0.47
E	2.90	1.45
F	2.18	1.78

Note. S7: The teacher managed time effectively; s/he started the lesson on time and finished on time.

Regarding the statement 7, students strongly agree that Teacher A, Teacher C and Teacher D managed time effectively; they started the lesson on time and finished on time too.

Interestingly, 32% of the students think that Teacher C did not allow time for students to pack up; even so, they agree that Teacher C managed time effectively. In

addition to that, students are not sure that Teacher F managed time effectively, started the lesson on time, and finished on time but, all of them think that the teacher allowed time for students to pack up. Detailed percentages are given below in Table 10.

Table 10

*Percentage of Students' Views for Statement 15 on Classroom Management
Evaluation Questionnaire*

Teachers	S15	
	Yes	No
A	81	19
B	79	21
C	68	32
D	72	28
E	90	10
F	100	0

Note. S15: The teacher allowed time for students to pack up.

Anticipating Problem Situations

Statement 11, 12 and 13 were related to anticipating problem situations during the lessons. These items in the questionnaire investigated students' perceptions about the teachers' strategies about anticipating problem situations. Detailed percentages of the results of students' responses for these items are given in Table 11.

Table 11

Percentage of Students' Views for Statement 11, Statement 12, and Statement 13 on Classroom Management Evaluation Questionnaire

Teachers	S11		S12		S13	
	Yes	No	Yes	No	Yes	No
A	100	0	54	46	88	12
B	100	0	84	16	84	16
C	95	5	74	26	84	16
D	94	6	89	11	94	6
E	93	7	87	13	100	0
F	100	00	64	36	91	9

Note. S11: The teacher scanned the class, s/he was aware of all students. S12: The teacher moved around, s/he did not stay in one place. S13: The teacher anticipated problem situations.

According to the percentages given in Table 11, students agree with all of the statements within the context of anticipating problem situations in the questionnaire. Results revealed that students think all the teachers scanned class and they were aware of all students. However, the statement that students agree with the least is about moving around, not staying in one place.

The statement with the lowest “yes” answer in the whole questionnaire revealed that 46% of the students think Teacher A did not move around the class and stayed in the same place.

Giving Praise and Encouraging Students

Students' perceptions which are related to teachers' strategies about giving praise and encouraging students were investigated with statement 14 in the questionnaire. Details for the responses to the statement 14 are listed in Table 12.

Table 12

Percentage of Students' Views for Statement 14 on Classroom Management

Evaluation Questionnaire

Teachers	S14	
	Yes	No
A	65	35
B	95	5
C	68	32
D	78	22
E	87	13
F	64	36

Note. S14: The teacher gave praise and encouraged the students.

In the entire yes-no questions, statement 14 is the one that students selected the option “no” the most. Compared to the other statements, too many students think that the teachers did not give praise and encourage them. However, 95% of the students agree that Teacher B gave praise and encourage them.

In addition, one of the Teacher C's students noted that “The teacher speaks in a way that breaks the hearts of the students and also, s/he is not repeating to explain the questions which are not understood.” The student's statement reveals that when the teachers do not give students' needs like explaining a solution again, students are able to feel not supported and not encouraged.

Applying Classroom Rules

Students' perceptions which are related to the application of classroom rules were investigated with statement 16 in the questionnaire.

Table 13

Percentage of Students' Views for Statement 16 on Classroom Management Evaluation Questionnaire

Teachers	S16	
	Yes	No
A	100	0
B	100	0
C	84	16
D	94	6
E	100	0
F	100	0

Note. S16: The teacher applied the class rules.

The percentages given in Table 13 show that the students think that all of the teachers applied the class rules. Statement 16 is the statement in which the students answered "yes" the most in the entire questionnaire. According to the results, 119 of the students have declared that the rules are applied by the teachers.

To What Extent Do High School Students' and High School Mathematics Teachers' Perceptions about Classroom Management Strategies have Commonalities and Differ from Each Other?

This section summarizes the results obtained from questionnaire and interview administered to the participants in order to explore the differences and commonalities between the students' and teachers' perceptions. In addition to data

collected from the questionnaire and interviews, data obtained from observations were used for triangulation.

Starting the Lesson

Teachers and students have the same perception about the organization of the class before the lesson started. Teachers made the necessary arrangements and prepared the materials for the lessons. There was a difference of perceptions between students and teachers based on only one teacher, regarding starting the lesson after drawing attention. Teacher D, who has the most positive student attitudes in terms of starting the lesson, stated that when she or he entered the classroom, the students were hungry and scattered because the lunch break was close so, she or he only waited for 15-20 seconds silently for them to get ready. It was supported by the observation that this strategy works effectively for getting students to prepare for the lesson.

Using Eye Contact-Voice and Body Language

The results showed that the perceptions of teachers and students about making eye contact were the same. Teachers made eye contact with the students during the lessons and it was approved by the observations. Another important point is that all the students of Teacher B, who emphasized the importance of making students feel that teacher is aware of them, stated that she or he often had eye contact with them and called students with their names.

Except for Teacher D, all teachers considered voice usage as yelling and thought that they used it well in this context. On the other hand, Teacher D stated that her or his vocal octave was very high and so she or he could use it by lowering and raising it a lot. According to the students, Teacher D is the teacher whose voice

was not monotonous and who used her or his voice most effectively. In addition, observations showed that teachers raise their voices to drown out students' voices.

It was observed that Teacher C and Teacher A who have the lowest agreement by the students for the statement "teacher used body language effectively" did not use facial expressions enough. The results reveal that students and teachers agree that teachers use body language effectively. However, observations indicated that teachers' body language was limited, and there was a need for improvement.

Making Transitions

Teacher D, to whom the students gave the most positive answers about the transitions, is the teacher who believes that the transitions should be smooth and be made without the students noticing. Moreover, students gave considerable positive answers for transitions of Teacher A who states instructions between activities have to be clear to make a good transition. According to the observer notes, Teacher A gave instructions during the transitions and did not leave time for the students to be idle.

Maintaining Group Focus

An interesting difference was found between the perceptions of students and teachers in terms of maintaining group focus. Although most of the teachers stated that they could not keep all students active in the lesson, even that it is impossible, students claimed otherwise for the teachers. According to the students, almost every teacher kept students on task. The most consistency between perceptions of teachers and students was found in Teacher F. Neither side could claim that all students were active in the lesson. On the other hand, for the teacher who thinks that she or he kept students on task during the lesson, students' perceptions were parallel that. Observations show that teachers are aware of the distracted students who disrupt the

flow of the lesson and they try to take the necessary precautions, take the attention of those students to the lesson. However, overall keeping all students on task could not be observed.

Managing the Time

The students thought that the lessons started and ended on time and the time was used effectively. Teachers considered time management as following the plan. Since they believed that the lessons were taught in accordance with the plan, they thought that there was no time management problem in the lessons. It has been found that teachers and students have the same perspectives on time management in the lessons.

Anticipating Problem Situations

It was noted by all the teachers that no situation would pose a serious problem in the lessons, and possible problems were noticed and resolved. The students' opinions were also in the same direction and revealed that the teachers were able to anticipate the problems.

There was no difference between the opinions of the teachers and the students about the fact that each teacher was aware of the class and scanned the class. Observation notes are also in line with the opinions of the teachers and the students; teachers' awareness level of students is high during the lessons. When it comes to moving around, especially for teachers A and F, there was an important difference in student opinions compared to other questions. Nearly half of the students think that these teachers did not walk around the classroom, and they stayed in the same place. Although the students thought other teachers were walking around the classroom more, the decrease in yes answers compared to other questions is remarkable for other teachers too. On the other hand, all teachers stated they walk

around the class and check students' work. Interestingly, according to the observations, only teacher E walked around the class sufficiently. Other teachers' moving around in the classroom is rare, not sufficient. In this context, the observer notes gave results closer to student ideas.

Giving Praise and Encouraging Students

Even all of the teachers strongly said that they gave praise and encouraged the students, a considerable number of students did not agree with it. The results of the observations were also close to the students' opinions, in the three lessons out of nine lessons, the teachers do not use enough praise and encourage students enough. According to the observation results, teachers tend to support only the student who solves the question correctly. Some students' comments shed light on this on the questionnaire, too. It has been noticed that students who have struggled with the solution, are encouraged less than the expectation.

Applying Rules

The results revealed that both students and teachers agreed with the application of the rules. Although some teachers mentioned the problems with the dress code of the students, it was seen that the students did not consider it as a class rule. The perceptions of both sides about the rules in the classroom were in the same framework; class rules were applied, and observations also led to the fact that class rules are applied in the lessons. Moreover, observations include that some of the teachers noticed the dress code violation and they warned those students.

CHAPTER 5: DISCUSSION

Introduction

This final chapter discusses the general findings of the research in reference to the literature. In the first part, an overview of the study is given and major findings are discussed. Then the implications for practice are clarified and lastly, the implications for further research are explained.

Overview of the Study

The overall intention of this study is to examine the classroom management strategies used in high school mathematics lessons, to determine teachers' and students' perceptions about teachers' classroom management strategies, and to explore the differences or commonalities of these perceptions. For this intention, both qualitative and quantitative data were collected during the study. Six high school mathematics teachers and 123 high school students attended the study. The students' and the teachers' perceptions are investigated in eight themes: starting the lesson, using eye contact, voice and body language, making transitions, maintaining group focus, managing the time, anticipating problem situations, giving praise and encouraging students and, applying classroom rules. Detailed findings of data analysis were given in Chapter 4.

Discussion of Major Findings

High School Mathematics Teachers' Perceptions about Their Classroom Management Strategies

One of the aims of this study is to investigate high school mathematics teachers' perceptions about their classroom management strategies.

According to the teachers, warning students, explaining the lesson plan, reminding the rules, allowing students to get prepared for the lesson by giving time are effective methods to maintain order at the beginning of the lesson. Babadjanova (2020) argued that specifying entry routine at the beginning of the lesson gives the message that the lesson is starting and could also avoid disorder. In addition to preparing learning materials and making seat arrangements that are in line with teachers' opinions in this study, doing a short physical "warm-up" activity or checking homework are suggested as entry routine. Moreover, this study indicated that teachers think starting the lesson by establishing connections with students' previous learning is effective for both attracting students' attention to the lesson and increasing the overall effectiveness of the lesson. Like in the current study, the majority of the teachers in Turkey states that they make connections between the current and the previous topic to maintain the management of the classroom (OECD, 2019). According to Yurtbakan et al. (2016), primary school teachers believe that one of the ways to increase students' success in mathematics lessons is to review previous topics in the lessons. Students' academic success is related to their motivation (Schunk et al., 2014) and, an increase in motivation reduces classroom management problems (Vatansever Bayraktar, 2015).

This study indicated that making eye contact with students is very common among teachers and applicable for different purposes. Some of the purposes of making eye contact are, drawing the attention of the students who got distracted, examining the students' understanding, warning a student for inappropriate behavior, and communicating with the students. According to Kwok's (2019), making eye contact is used in order to deal with misbehavior and stop students from talking to each other. Another area of utilization of making eye contact is sending students a

message that "I am aware of you". Similarly, Çalışkan and Karadağ (2010, p. 80) stated that proper eye contact with the students sends a message of “I'm paying attention to you, I'm listening to you”.

Teachers' use of voice, especially the tone of their voice is correlated with the level of functioning of teachers. Different voice tones of teachers could change the level of facilitative conditions for the students in the classroom. (Henderer, 1971). Therefore, students' behavior in the lesson could also change. However, this study revealed that the majority of the teachers consider the use of voice as just yelling. Moreover, according to the observation notes teachers' use of voice did not differ much from each other. They only occasionally increased their volume to take attention and drowned other voices out. Arı et al., (2016) found that only 2% of the teachers raised their voices as a solution method for classroom management problems in the study conducted with primary school teachers. On the contrary, it was seen that this method was used by most of the teachers in this study. Intonations and emotions are important in teachers speaking, because, students' attention could be lost if the speech is monotone or boring (Babadjanova, 2020). Douglas (2019) suggested using voice to take attention and make the voice interesting by slowing down, giving dramatic effect, varying the tone, and using silence, rather than shouting over the class to stop the students' talking.

Body language is the most efficient factor in effective nonverbal communication (Mehrabian, 1981). Although the teachers indicated that they used their body language well, they could not explain this in detail. The teachers' failure of giving more detailed descriptions of their perceptions of body language and use of voice could reflect their limited knowledge in these areas of classroom management. They stated that they turned toward the students in a way to not blocking the board

and not interrupting their communication with the students. From this point of view, even though it is understood that teachers see body language as a means of communication with students, teachers' awareness of the use of their body language is low. However, as stated in the literature, teachers should first understand themselves and then be able to evaluate their own behavior along with the student's behavior. Therefore, teachers need to understand body language (Habacı et al., 2013).

In the current study, teachers stated that they made smooth and effective transitions. Interviews showed that teachers tend to reflect on the transition between activities mostly as passing from question to question. It should be taken into account that some of the lessons in which the research was conducted focused on question-solving, which might have led teachers to identify it as transitions between questions. For the transitions between questions, the most important thing that teachers pay attention to is whether the problem solved is understood by the students. Some of the strategies that they use to understand this are walking around, monitoring students' works, and asking if the solution is understood. Instead of asking students whether they understand or not, asking questions about the content of the lesson is an effective way to evaluate students' understanding. Morgan and Saxton (1991) argued that asking questions to the students helps teachers to evaluate the students' learning and manage their behavior because it keeps students active in the lessons. In addition, using questions as a teaching strategy could motivate students, encourage them to participate in the lesson, and improves classroom interaction. (Shahrill, 2013). Thus, while distractors in the lesson reduce, managing the classroom could become easier.

Another important finding is that teachers think interaction among students in transition is an effective method for maintaining momentum and keeping students' attention. According to Allen (1986), socializing in the classroom is important for the students and the lessons that focus on individual and non-social learning are not enjoyable. Students relish learning in the lessons that allow teacher-student and students-students learning activities. Teachers believe that participation in the lesson increases when they allow students to communicate. If this communication is in transition parts, students help each other to complete the previous activity and are ready for the new one. According to the teachers, in order to get the students ready for the new activity, instructions in transition parts should be clear. Otherwise, students could be confused and, this may lead to distraction. One of the teachers who participated in the study stated that for smooth transitions to occur, students should not be aware of the transition. On the contrary, according to Arlin (1979), teachers who made a smooth transition, broke the momentum in the classroom and had clear ends and clear beginnings. Thus, definitive transitions between activities are felt by the students and they could follow the process in an on-task manner. While making a transition, teachers should give enough "wait time" to students to get them ready for the new activity (Smith, 1985). It was suggested by the teachers to give "wait time" to the students during the transitions and to review the previous knowledge in this study.

Another important finding is about maintaining group focus. This study showed that a majority of teachers believe that it is almost impossible to keep all students on task during the lesson. The reasons for this are the differences in the attention span of the students and the differences in their academic achievement levels. Even if it is said that students' attention starts to decrease after 10-15 minutes,

this is not always true. Teachers should try to estimate the attention span in the lessons, taking into account the individual attention differences of the students (Wilson & Korn, 2007).

In this study, it was understood that the teachers consider time management as conformity to the lesson plan. A higher level of effective time management skills is linked to more effective planning abilities (Papa-Gusho & Biçaku-Çekrezi, 2015). Even if the teachers prepared effective lesson plans and could not finish the plan in the lesson because some previous learning needed to be review, they did not think there was a time management problem.

All the teachers believed that they anticipated the problem situations in the classroom and they took necessary actions against them. This result of the research is compatible with the results of the research conducted by Bulut and Topdemir (2018) with mathematics teachers. Teachers emphasized that it is important to be aware of the students in the lesson and to plan the lesson carefully in order to anticipate the problems. They also stated that when they saw a distractor during the lesson, they keep it away.

According to the interviews, teachers tend to encourage the students who participate in lessons well. No teacher mentioned encouraging a student who fails or has no motivation for the lesson. It can be said that teachers in this study are inclined to ignore the students who participate in the lessons less. The methods teachers prefer for giving praise and encouraging students to the lesson were mostly verbal or giving extra points. Can and Arslan (2018) reported that the students' expectations from their teachers include extra points and praises which they think could increase the participation in the lesson. Akin-Little et al. (2007) found similar results with this study about the praise teachers give.

In the interviews, it was seen that some teachers do not consider school rules as classroom rules. Johnston and Lubomudrov (1987) suggested that the school rules have to be consistently enforced otherwise teachers could lose control, and then chaos ensues. Similarly in the current study, teachers think that the whole school should act consistently with the school rules, and then classroom rules should be set. Tillery et al. (2010) found similar results about abiding by school rules as a whole school. In this study, it can be thought that the inconsistency in the implementation of school rules may have caused these rules not to be considered as classroom rules.

High School Students' Perceptions about Their Mathematics Teachers'

Classroom Management Strategies

This study examined students' perceptions about the implementation of teachers' classroom management strategies. In this context, students were asked whether the strategies of starting the lesson, using eye contact, voice and body language, a transition between activities, maintaining group focus, managing the time, anticipating problem situations, giving praise and encouraging students, and applying classroom rules, were implemented or not by their teachers.

According to the results, the perception of most of the students is that effective lesson starting, eye contacting, effective voice and body language use, maintaining group focus, effective time management, anticipating problem situation, smooth transitions, and classroom rules are applied in the lesson. In the study of Gündüz and Can (2013), the views of the students are mostly similar to this study, except for the teachers' body language and anticipating problem situations. Teachers' use of body language in the lessons was found to be low level by students according to the results of Gündüz and Can (2013). Contrary, in the current study most of the students think that the teachers use body language effectively. However, the

observation notes are in the opposite direction of the students' thoughts. It was observed that the teachers' use of body language was limited. Similarly, the students thought that the teachers' voice use was effective and not monotonous, and the observer evaluated the teachers' voice use as mostly not effective. The reason for this difference can be predicted as the school where the current study was conducted is a small school, the mathematics teachers have been working together for many years so their teaching styles are similar. Thus, the students' awareness of body language and voice use could not be well developed.

In this study, most of the students have a common perception that is the teachers managed time effectively. Even though the teacher did not give the students the time to pack up at the end of the lesson, the students evaluated the teacher's time management effectively. Hence, it can be claimed that not having time for packing up at the end of the lesson does not affect the students' view on the time management. However, in the school study conducted, students need to pack up and change classroom for each lesson. So, when they do not have time for packing-up at the end of the lesson, they need to use their break time for it.

Contrary to the study of Gündüz and Can (2013), this study shows that students strongly believed that their teachers anticipated problem situations. Also, students strongly agreed that teachers scanned the class during the lessons and they were aware of all the students. However, it was noticed that students' perception about teachers' moving around and, not staying in one place strategies are less positive compared to the other strategies for effective management of the classroom. The fact that the observed mathematics lessons were mostly question-solving and the teachers focused on completing the lesson plans may have prevented them from observing the students by walking around the classroom. One of the teaching

abilities is the effective use of classroom space, which allows teachers to be aware of all students. Desks should be arranged accordingly and accessible paths should be created to use classroom space better. Thus, more effective classroom management could be provided (Tauber, 2007). According to the observation notes in this study, the desk arrangement in some classrooms was not suitable for teachers to walk between the desks. Hence, observation notes show parallel results with students' opinions. These reasons may have reduced anticipating problem situations.

Moreover, the results of the study showed that starting the lesson strategies, especially the one that the teacher made the necessary arrangements in the classroom before starting the lesson, were perceived less positively by the students than the other strategies. In the literature, the studies examining classroom teachers' classroom management competencies, found that students' perceptions of teachers' ability to organize the classroom environment were high (Gündüz & Bozkuş, 2016; Yeğen, 2019). At the school in which the current study was conducted, the fact that, the mathematics teachers did not have their own classrooms unlike the classroom teachers can be seen as one of the reasons for this difference. Also, Kalin et al., (2017) suggested that as students get older, teachers pay less attention to classroom management dynamics, and high school teachers are more concentrated on lesson goals rather than classroom management components compared to primary school teachers.

Moreover, it can be said that students think that giving praise and encouraging students strategies were used less than the other strategies in the lessons. According to the students' perceptions, the least applied strategy in the lesson was being praised and encouraged to the lesson. Also, it is noticed that students who have difficulty in learning may have a tendency to feel lonely in the

lessons. Sekreter (2018) claimed that the experience of failure in secondary mathematics lessons could lead students to learned helplessness, which has a strong demotivation effect. Some of the suggestions given to prevent this are; direct support especially for the students who are struggling, underlining success against failure, providing suggestions for dealing with challenges and weaknesses, and giving clear explanations.

In the current study, high school students think that the teachers applied classroom rules in the lessons. Buluc (2006) also found similar results; students think that the rules are applied. For this study, observation results also showed that the rules are applied, except for the dress code. High school students do not feel responsible for implementing the rules if they are not involved in the process of rule preparation (Buluc, 2006). In the school the current study was conducted, the dress code was defined by the school administrators, and the students were not a part of this decision process. So, students did not feel responsible for this rule and that could be a reason that the students think rules were applied even there was a dress-code rules violation.

Differences and Commonalities in the Perceptions of the Teachers' and the Students'

In this study, classroom management strategies of high school mathematics teachers were examined according to the teachers' and students' perceptions, and mostly parallel perceptions have emerged. Although it was seen that the expectations of the students were met to a large extent, it was explored that there are some differences in the opinions. It can be said that high school mathematics teachers' perceptions of classroom management strategy skills are relatively higher than the

students'. Interestingly, in terms of the ability to maintain group focus, students' perceptions are higher than the teachers'.

According to the results of the research, students' and teachers' perceptions are common for the themes of starting the lesson, using eye contact-voice and body language, making transitions between activities, managing the time, anticipating problem situations and, applying classroom rules. The perceptions of both parties are that these classroom management strategies are applied in the mathematics lessons.

According to the result of the study, at the beginning of the lessons, teachers and students believe that the teachers were able to gain students' attention and then started the lesson. Results show that the one strategy which was found effective by the teacher, the students, and the observer is that teacher should wait for students silently until they realize the lesson is starting and then get prepared for the lesson. Bulut and Topdemir (2018) found that mathematics teachers had positive self-efficacy beliefs of the physical arrangement of the classroom and they believed they made necessary arrangements in the lesson. In this study, the teachers thought that the necessary material preparation and adjustments were made in the classroom. Although the students also agree with this view, a decrease was observed in the positive response they gave for the related statement. While the teachers thought that connecting the computer to the projector and preparing the worksheets was sufficient, the students might have expected a different preparation. The fact that the places of the desks were not changed at the beginning of the lesson and the preparations made by the teacher were routine for the student may have caused a decrease in their perception.

Interestingly, in this study, although the students' and teachers' perceptions of the body language of teachers in the lessons were found mostly effective, the

observer noted notes are that body language was used poorly. Therefore, it is concluded that teachers' and students' awareness about the nonverbal communication is not matching with the observer's note. Miller (1988) argued that nonverbal communication awareness should be high in order to be a better receiver of students' messages and to be a teacher who can send positive messages to encourage learning. From this point of view, the fact that students think that they were not so much encouraged in the lesson and that teachers' use of body language is insufficient for the observer can be associated with low body language awareness of both teachers and students.

According to Arlin (1979), the transition should be structured and the time in transitions should be arranged and monitored carefully. In this study, similar results were found, when the student and teacher results were examined. It was seen that the perceptions of teachers and students in terms of transitions are mostly common. Giving clear instructions and, arranging the time in transitions, were positively perceived by the students. Observations also support students' and teachers' opinions.

According to Penny Ur, one of the qualifications that teachers need to have as role models is good time management. Lessons should be divided into parts and teachers need to complete every part on time for good time management in the lessons (Babadjanova, 2020). It was determined that the students' and the teachers' perceptions about time management in lessons are common. Although some students state that the teacher does not give enough time to pack up at the end of the lessons, this may be due to the fact that the questionnaires were conducted at the end of some observed lessons.

The perceptions of students and teachers about the implementation of the rules are very parallel to each other. Observation notes also support both teachers'

and students' perceptions, except for the violation of the dress code. Based on the observations, it was concluded that both sides did not see the violation of the dress code as a violation of the implementation of the class rules.

Another result of the study is that both teachers and students perceive that teachers can predict problems in the lesson. Both sides thought that the problems were anticipated and necessary precautions were taken. Regarding this, it can only be said that the perception of the students that the teachers did not stay in one place and they moved around the classroom is less than the teachers' perceptions. For effective classroom management, being proactive as a teacher and walking around the classroom are strongly recommended (Pedota, 2007). Despite this, both students and teachers have a common perception that teachers scanned the classroom.

On the other hand, some differences were determined in the perceptions of students and teachers in maintaining group focus and, giving praise and encouraging students themes. A considerable difference between students' and teachers' perceptions is determined about maintaining group focus. Although most of the teachers think that they could not keep the students on-task during the lessons, the students believe that they were kept on-task by the teachers. Observation notes also support the perceptions of the teachers. The reason for this difference may be that students' and teachers' understanding of "keeping on task" and "being active in the lesson" are different from each other. The students who thought group focus is maintained may have thought that their silent classmates were following the given task even if they were not following the lesson. Moreover, the factors that negatively affect mathematics achievement in Turkey or the reasons for the problems encountered in classroom management are students' disinterestedness toward mathematics lessons (Dirlikli et al., 2015; Yayla & Bangir-Alpan, 2019). This

indifference is a much-discussed problem and the need for continuous improvement is emphasized. Mathematics teachers may be looking through this lens and may therefore feel inadequate about maintaining group focus.

According to the results of this study, there were differences between students' and teachers' opinions about being encouraged and giving praise. Even the teachers believed that they encouraged the students and gave praise; these were not considered enough by some of the students. There are studies in the literature supporting that teachers give praise mostly on students' academic work (Clunies-Ross et al., 2008; Beaman 2006). In this study, a similar result was obtained and it was determined that the teachers praised the academic success, but the student who needed help and was unsuccessful felt alone in the lesson. For effective praise, stating the important points that cause success should be praised instead of giving praise to general success (Can, 2005). According to observations, teachers praised just the success of students in the lessons. For this reason, praise has not been considered sufficient according to the students' responses, and differences in perceptions may have arisen.

Implications for Practice

- All teachers and school administrators should work in harmony on the implementation and supervision of rules. Supervision of the rules by the school administration can increase the consistency of the teachers in implementing the rules.
- More frequent use of formative assessments in lessons can provide information to both students and teachers about the performance of the students. In this way, one can minimize the difference of opinion between teachers and students about maintaining group focus in lessons.

- In-service training should be given to increase the awareness of teachers about non-verbal communication. Also, seminars may be organized to raise awareness about non-verbal communication for the students. Moreover, the use of nonverbal communication in lessons can be increased by including creative drama in mathematics lesson activities.
- The reasons for students' perceptions that the praise they receive is insufficient to encourage them to the lesson can be investigated. It can be revealed whether the students found it insufficient because they were brought up with too much support and praise, or whether the teachers do not encourage them even though they think they did. Help can be requested from the guidance service.

Implications for Further Research

- This study is based on face-to-face education. Distance education, a very new concept for high school teachers and students, has become very common due to the pandemic. Studies can be conducted on student and teacher views on classroom management in distance education.
- This research was implemented in the foundation high school in Ankara. Another research can be implemented in different cities and public schools.
- The current study is conducted with 9th, 10th, and 11th-grade students and their mathematics teachers. Another study can be conducted with different levels and different lessons.
- Further studies can be conducted with strategies other than the classroom management strategies considered in this study.

- At the time this study was completed, there were limited sources on teachers' perceptions of body language in classroom management. Different studies can be conducted to reveal the perceptions of teachers and to improve their awareness.
- Teachers' awareness can be increased by conducting research on the opinions of students who do not think that they are adequately encouraged during the lesson.
- The reasons for the differences of perceptions between teachers and students about encouraging students towards the lesson can be investigated. At this point, the environment in which students are raised should be taken into consideration.
- The participants of this research consist of teachers and students. More comprehensive results can be obtained by including school administrators.
- This study was conducted once in a certain period. It can also be checked to see if there is consistency in different time zones.

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APPENDICES

Appendix A

Classroom Management Evaluation Questionnaire

Demographic Information

Gender:

Grade:

Followed curriculum:

Please complete the following questionnaire by placing a CROSS in the appropriate box.

<i>Please choose the most appropriate one according to your previous lesson in the frame of classroom management.</i>		strongly disagree	disagree	not applicable	agree	strongly agree
1.	The teacher organized the desks, chairs and the lesson materials before the lesson started.	☐	☐	☐	☐	☐
2.	The teacher set up activities and gave clear instructions.	☐	☐	☐	☐	☐
3.	The teacher gained students' attention then started the lesson.	☐	☐	☐	☐	☐
4.	The teacher was aware of the students who distracted the lesson and made the necessary interventions.	☐	☐	☐	☐	☐

5.	The teacher was able to maintain momentum when moving from one activity to another and the students in the class were not distracted.	☐ ☐ ☐ ☐ ☐
6.	The teacher kept students on task, as well as dealing with the students who finished early.	☐ ☐ ☐ ☐ ☐
7.	The teacher managed time effectively, s/he started the lesson on time and finished on time.	☐ ☐ ☐ ☐ ☐
8.	The teacher's voice was not monotonous, s/he used her/his voice effectively.	☐ ☐ ☐ ☐ ☐

<i>If you agree with the statements below, please place a cross in the YES box, if you do not agree, please place a cross in the NO box.</i>		YES	NO
9.	The teacher used students' names.	☐	☐
10.	The teacher made eye contact with the students.	☐	☐
1.	The teacher scanned the class, s/he was aware of all students.	☐	☐

2.	The teacher moved around, s/he did not stay in one place.	☐	☐
3.	The teacher anticipated problem situations.	☐	☐
4.	The teacher gave praise and encouraged the students.	☐	☐
5.	The teacher allowed time for students to pack up.	☐	☐
6.	The teacher applied the class rules.	☐	☐
7.	The teacher used body language effectively.	☐	☐

Other comments:

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.....

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Appendix B

Sınıf Yönetimi Değerlendirme Anket Formu

Demografik Bilgiler:

Cinsiyet:

Sınıf:

Takip edilen müfredat:

Lütfen aşağıdaki anketi uygun kutuya bir İŞARET yerleştirerek doldurunuz.

Lütfen dersinizi sınıf yönetimi açısından değerlendirerek, sizin için en uygun olanı işaretleyiniz.		Kesinlikle katılmıyorum	Katılmıyorum	Emin değilim	Katılıyorum	Kesinlikle katılıyorum
1.	Öğretmen ders başlamadan önce masaları, sandalyeleri ve ders materyallerini düzenledi.	☐	☐	☐	☐	☐
2.	Öğretmen aktiviteler uyguladı ve bunlarla ilgili net talimatlar verdi.	☐	☐	☐	☐	☐
3.	Öğretmen öğrencilerin dikkatini çekti ve daha sonra derse başladı.	☐	☐	☐	☐	☐
4.	Öğretmen ders düzenini bozan öğrencilerin farkındaydı ve gerekli müdahaleleri yaptı.	☐	☐	☐	☐	☐
5.	Öğretmen bir aktiviteden diğerine geçerken	☐	☐	☐	☐	☐

	dengeyi koruyabildi ve sınıf düzeni bozulmadı.	
6.	Öğretmen öğrenciler verilen görevi erken bitirmiş olsalar bile dersle alakalı olmalarını sağladı.	☐ ☐ ☐ ☐ ☐
7.	Öğretmen zamanı etkili kullandı, derse zamanında başladı zamanında bitirdi.	☐ ☐ ☐ ☐ ☐
8.	Öğretmen ses tonunu etkili kullandı, sesi monoton değildi.	☐ ☐ ☐ ☐ ☐

<i>Aşağıdaki ifadelerle katılıyorsanız, lütfen EVET kutusuna bir çarpı işareti koyun, katılmıyorsanız, lütfen HAYIR kutusuna bir çarpı işareti koyun.</i>		EVET	HAYIR
9.	Öğretmen öğrencilere isimleriyle seslendi.	☐	☐
10.	Öğretmen öğrencilerle göz teması kurdu.	☐	☐
11.	Sınıf öğretmenin gözetimi altındaydı, öğretmen bütün öğrencilerin farkındaydı.	☐	☐
12.	Öğretmen sınıfta dolaştı, sabit bir yerde durmadı.	☐	☐
13.	Öğretmen sorun yaratabilecek durumları	☐	☐

	öngördü.	
14.	Öğretmen öğrencileri övdü, derse teşvik etti.	☐ ☐
15.	Öğretmen öğrencilerin toparlanması için zaman tanıdı.	☐ ☐
16.	Öğretmen sınıf kurallarını uyguladı.	☐ ☐
17.	Öğretmen beden dilini etkili bir şekilde kullandı.	☐ ☐

Diğer yorumlar:

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Appendix C

Görüşme Soruları

(Görüşme soruları Günay Paliç ve Esra Keleş 'in yapmış olduğu çalışmadan faydalanılarak araştırmacı tarafından hazırlanmıştır (Paliç, G. & Keleş E., 2011). Gerekli yazılı izin EK H'de verilmiştir.)

1. Sınıf yönetimi denildiğinde aklınıza neler gelir?
2. Dersinizde öğrencilerin bireysel ihtiyaçları mı sınıfın genel ihtiyacı mı sizin için önceliklidir?
3. Sizce sınıf kuralları öğretmenler tarafından mı belirlenmeli yoksa öğrencilerle beraber mi seçilmeli?
4. Etkili bir sınıf yönetimi için önemli gördüğünüz öğretmen özellikleri sizce nelerdir?
5. Sınıf yönetimi sağlamada ne gibi yaklaşımlar sergiliyorsunuz? Örnek veriniz.
6. Sınıf yönetiminde ne gibi sorunlarla karşılaşıyorsunuz?
7. Sizce etkili bir sınıf yönetimi için yapılması gerekenler nelerdir?
8. Ders başlangıcında öğrencilerin dikkatini toplayıp derse başlama sürecinde nelere dikkat ettiniz?
9. Öğrencilerle olan göz temasınızı, ses ve vücut dili kullanımınızı nasıl değerlendirirsiniz?
10. Aktiviteler arası geçişlerde dikkat ettiğiniz şeyler var mı? Varsa nelerdir?
11. Bütün öğrencileri derse ilgili tutabildiğinizi düşünüyor musunuz? (Dikkati dağınık olanlar, verilen görevi önceden bitirenler gibi).

12. Bu dersi zaman yönetimi açısından nasıl değerlendirirsiniz? Ders zamanında başladı mı, ders bitiminde öğrencilere hazırlanmaları için vakit verdiniz mi?
13. Ders sırasında sorun oluşturabilecek durumlar öngördünüz mü? Örgördüyseniz önüne geçmek için ne yaptınız?
14. Öğrencileri motive etmek amaçlı övgülerde bulundunuz mu?
15. Bu derste sınıf kurallarının uygulanışı ile ilgili düşünceleriniz nelerdir?



Appendix D

Lesson Management and Class Control Observation Form

Class observed:

Teacher:

Provide comments on the following strategies to during the lesson (beginning, middle, and end)	Strategies observed
Organizing the classroom environment (desks, chairs, course materials)	
Handling students' entering the class and taking attendance	
Setting up activities and giving instructions	
Gaining attention and starting the lesson	
Dealing with distractions (such as latecomers, announcements, etc.)	
Transitioning from one activity to the next and maintaining momentum	
Maintaining attention	

Keeping students on task (as well as dealing with students who finish early)	
Time management, ending on time	
General observations/other observations	

General/other strategies	Observed	Did not observe/not applicable
Using students' names		
Eye contact		
Scanning the class/awareness of all students		
Moving around/monitoring		
Anticipating problem situations		
Giving praise encouragement		
Allowing time for students to pack up		
Other:		

General comments about strategies and their effectiveness	
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Appendix E

Classroom Management Observation Form

Class Observed:

Teacher:

Provide comments on the following strategies to during the lesson (beginning, middle, and end)	Strategies observed
Organizing the classroom environment (desks, chairs, course materials)	
Handling students' entering the class and taking attendance	
Setting up activities and giving instructions	
Gaining attention and starting the lesson	
Dealing with distractions (such as latecomers, announcements, etc.)	
Transitioning from one activity to the next and maintaining momentum	
Maintaining attention	

Keeping students on task (as well as dealing with students who finish early)		
Time management, ending on time		
Intervention to the problem, guiding the student		
Accepting students' feelings and answers, labelling		
Other observations (use of voice, body language, rules)		
General/other strategies	Observed	Did not observe/not applicable
Using students' names		
Eye contact		
Scanning the class/awareness of all students		
Moving around/monitoring		
Anticipating problem situations		
Giving praise encouragement		

Allowing time for students to pack up		
Others		
General comments about strategies and their effectiveness		



Appendix F

Teacher Permission Form

Değerli Öğretmen,

Okulunuzda yürütülecek olan bir çalışmada sizinle görüşme yapabilmek adına izninize ihtiyacımız bulunmaktadır. Bu çalışmanın amacı öğrencilerin, sınıf yönetimleri yaklaşımınız ve değerlendirmeniz hakkındaki veri toplamaktır. Görüşme dijital ses kayıt cihazıyla kayıt altına alınacaktır. Bu çalışmanın sonucunda elde ettiğimiz veriler doğrultusunda matematik derslerindeki sınıf yönetimi hakkında öğrenci öğretmen fikir ayrılıkları belirlenmeye ve önerilerde bulunulmaya çalışılacaktır.

Verdiğiniz tüm cevaplar gizli kalacaktır. İsim sorulmayacak ya da herhangi bir belgede görüntülenmeyecektir.

Bu çalışmaya ilişkin detaylı bilgi için lütfen iletişime geçiniz.

Desteğiniz ve işbirliğiniz için çok teşekkür ederiz.

Eğer katılımınızı onaylıyorsanız lütfen aşağıdaki kısmı imzalayınız.

İmza: _____

Adın-Soyad: _____

Tarih: _____