

INVESTIGATING THE READINESS OF PRESERVICE MATHEMATICS
TEACHERS TOWARDS TEACHING PROFESSION

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ABSTRACT

INVESTIGATING THE READINESS OF PRESERVICE MATHEMATICS TEACHERS TOWARDS TEACHING PROFESSION

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The aim of this study was to investigate to what extent the preservice teachers perceived that they were ready for the teaching profession and the differences in preservice teachers' readiness based on the year in the teacher education program, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family. The study was conducted at the Elementary Mathematics Education programs of universities in Ankara, Burdur, Bolu, Gaziantep, İzmir, Samsun and Sakarya in the spring semester of 2009-2010 academic year. The data were collected from 728 third and 4th year preservice mathematics teachers. Readiness of preservice mathematics teachers was assessed with a readiness scale which was developed by the researcher in the fall semester of 2009-2010 academic year. Data were analyzed with descriptive and inferential statistics.

The results indicated that preservice mathematics teachers did not perceive their readiness at a high level. There was a significant difference in readiness scores for 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers. It was found that the readiness of 4th year preservice mathematics teachers were significantly higher than the readiness of 3rd year preservice mathematics teachers. On the other hand, the results showed that there was no significant difference in readiness scores for female preservice mathematics teachers and male preservice mathematics teachers. Similarly, there was no significant difference in readiness scores for preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types, and between existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers. Findings of the study indicated the need for improving the practice courses in order to increase preservice teachers' readiness for the profession.

Keywords: Preservice Mathematics Teachers, Readiness, Teacher Education, Mathematics Education

ÖZ

MATEMATİK ÖĞRETMEN ADAYLARININ ÖĞRETMENLİK MESLEĞİNE YÖNELİK HAZIR OLMALARININ İNCELENMESİ

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Bu çalışmanın amacı, matematik öğretmen adaylarının öğretmenlik mesleğine karşı kendilerini ne düzeyde hazır algıladıklarını ve bu hazır olmayı, sınıf düzeyleri, cinsiyet, mezun oldukları lise türü ve ailelerinde öğretmen bulunup bulunması gibi değişkenlerle incelemektir. Çalışma 2009-2010 eğitim-öğretim yılının bahar döneminde Ankara, Burdur, Bolu, Gaziantep, İzmir, Samsun ve Sakarya'daki üniversitelerin İlköğretim Matematik Öğretmenliği programlarında yürütülmüştür. Veriler, 3. ve 4. sınıfta öğrenim görmekte olan 728 matematik öğretmeni adayından toplanmıştır. Matematik öğretmen adaylarının hazır olmaları, araştırmacı tarafından 2009-2010 eğitim-öğretim yılının güz döneminde geliştirilen bir ölçek ile araştırılmıştır. Bu ölçek aracılığıyla toplanan veriler betimsel ve çıkarımsal istatistiksel yöntemler aracılığıyla analiz edilmiştir.

Sonuçlar, matematik öğretmen adaylarının kendilerini öğretmenlik mesleğine yüksek seviyede hazır olmadıklarını göstermiştir. Çalışmanın bulgularına göre, 3.sınıf matematik öğretmen adaylarının hazır olmaları ile 4. sınıf matematik öğretmen adaylarının hazır olmaları arasında anlamlı bir fark çıkmıştır. 4. sınıf matematik öğretmen adaylarının hazır olmaları, 3. sınıf matematik öğretmen adaylarının hazır olmalarından daha yüksek çıkmıştır. Diğer yandan, sonuçlar bayan matematik öğretmen adayları ile erkek matematik öğretmen adaylarının hazır olmaları arasında anlamlı bir fark bulunmadığını göstermiştir. Benzer şekilde, öğretmen lisesinden mezun olan matematik öğretmen adaylarıyla, diğer okul türlerinden mezun olan matematik öğretmen adaylarının hazır olmaları ve ailesinde öğretmen bulunan matematik öğretmen adaylarıyla, bulunmayan matematik öğretmen adaylarının hazır olmaları arasında anlamlı bir fark bulunmamıştır. Çalışmanın bulguları öğretmen eğitimi programlarındaki okul deneyimi derslerinin öğretmen adaylarının mesleğe hazır olmalarını destekleyecek şekilde geliştirilmesi gerektiğini ortaya koymuştur.

ANAHTAR KELİMELER: Matematik öğretmen adayları, Hazır olma, Öğretmen Eğitimi, Matematik Eğitimi

**To Emre Türkmen,
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LIST OF ABBREVIATIONS

ABBREVIATIONS

HEC: Higher Education Council

MNE: Ministry of National Education

AFT: American Federation Teachers

NCTM: The National Council of Teachers of Mathematics

NCES: National Center for Education Statistics

PSTI: Perceptions for Student Teaching Instrument

EME: Elementary Mathematics Education

METU: Middle East Technical University

EFA: Exploratory Factor Analysis

KMO: Kaiser-Meyer-Olkin Measure of Sampling Adequacy

PCA: Principal Component Analysis

IV(s): Independent Variables

DV: Dependent Variable

N: Sample size

SD: Standard deviation

p: Significance level

M: Mean

Df: Degree of freedom

f: Frequency

CHAPTER I

INTRODUCTION

Teachers are one of the most important components of an education system. Teacher education programs have a major role in their preparation. Teachers have various roles including analyst, curriculum developer, material developer, mentor, team member, researcher, and professional (Richards & Lockhart, 1996). They have different responsibilities in a typical classroom and they are supposed to be competent in several domains involving lesson planning, implementation skills, classroom management, and fostering professional and personal qualities. Therefore, teacher education institutions develop different strategies so that they can contribute to the preparation of teachers. As the quality of education in the future depends on the preservice teachers (Nuangchalem & Prachagool, 2010), teacher education programs spend considerable effort in order to develop teachers in terms of the knowledge, skills, and attitudes, and to prepare the students for the society (Bezzina & Michalak, 2009). However, one of the latest European Commission communications indicates that teachers express “a lack of competence to deal with new developments in education, including individualized learning, preparing pupils for autonomous learning, dealing with heterogeneous classrooms” (European Commission, 2007, p. 5).

Teachers’ competencies address the standards that teachers should have and help in increasing teachers’ knowledge and skills (Seferoğlu, 2009). Teacher competencies can be defined as “the general information, abilities and attitudes that

are necessary to have to do the teaching profession effectively” (Seferoğlu, 2009, p. 204).

Several stakeholders have been involved in teacher education in Turkey due to the centralized nature of the teacher education programs at the universities. These stakeholders have different perspectives about the competencies of teachers. For example, The Higher Education Council (HEC) defines the main competencies of graduates of teacher education institutions as the mastery of subject matter knowledge, the management of teaching-learning process, and providing guidance and personal and professional qualities through teacher development (HEC, 2007). On the other hand, the Ministry of National Education (MNE) outlines competencies as personal and professional values-professional development, knowing the student, learning and teaching process, monitoring and evaluation of learning and development, school-family and society relationships as well as knowledge of curriculum and content knowledge (MNE, 2008). Teacher education programs generally feel obligation to fulfill these two major stakeholders’ proposals and try to improve their programs. However, to what extent the preservice mathematics teachers feel that they are ready for the teaching profession when they graduate is not much investigated.

The first year in teaching is a critical period for beginning teachers. Novice teachers begin their profession with enthusiastic and idealistic feelings since they think that they spent their education years following and interacting with their teachers (Huling-Austin, 1992). When beginning teachers start teaching, they have to convey all information regarding curriculum, learning, and pedagogy and they need

to manage their classrooms effectively. Contrary to time when they took lessons related to teaching profession, their first year is the time to struggle with the challenges and stand on their own feet. First years of teaching are one of the biggest challenges for many teachers (Craig, 1995). They generally feel inadequate while coping with individual differences, assessment, motivating students, discipline, adapting school culture and policies, teaching load, insufficient preparation time, relationships with colleagues and administrators, and cooperating with parents (Haser, 2010; Kuzmic, 1994). Beginning teachers have difficulties in solving these challenges (Fotland, 2004) and this results in decrease in feelings of efficacy which were increased during the teacher education programs (Cruz & Arias, 2007). The unrealistic expectations might eventually make beginning teachers quit teaching profession because they would not be able to deal with increased workload, large classroom sizes, student attitudes, low salaries, lack of parental and administrative support, lack of resources, lack of student achievement and recognition, feelings of isolation, job dissatisfaction, burnout, and stress (Anhorn, 2008; Liu, 2007). Therefore, in order to keep beginning teachers in the profession, it is important that their readiness for teaching is investigated before they start teaching.

Considering the need for understanding the perceived readiness of preservice teachers, this study aims to investigate to what extent preservice mathematics teachers perceive that they are ready for the teaching profession.

1.1. Purpose of the Study

The main purpose of this study was to investigate to what extent the preservice teachers perceive that they are ready for the teaching profession and the

differences in preservice teachers' readiness based on the year in the teacher education program, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family.

1.2. Research Questions and Hypotheses

The specific research questions addressed in this study are:

1. What is preservice mathematics teachers' perceived readiness for teaching profession?
2. Is there any statistically significant difference between 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers on their readiness scores?
3. Is there any statistically significant difference between female and male preservice mathematics teachers on their readiness scores?
4. Is there any statistically significant difference between preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types on their readiness scores?
5. Is there any statistically significant difference between existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers on their readiness scores?

Hypotheses in the study were formulated as follows:

2. There is no statistically significant mean difference between 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers on their readiness scores.

3. There is no statistically significant mean difference between female and male preservice mathematics teachers on their readiness scores.

4. There is no statistically significant mean difference between preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types on their readiness scores.

5. There is no statistically significant mean difference between existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers on their readiness scores.

1.3. Significance of the Study

The purpose of this study is to investigate the perceived readiness of preservice mathematics teachers for the teaching profession and to determine the possible differences in preservice teachers' readiness based on the year in the teacher education program, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family.

Beginning teachers in their first years encounter various problems. The problems they generally meet are insufficient teaching materials, unmotivated students, lack of classroom discipline, management of individual differences, assessment of students' work, relationships with parents, and design of the classwork

(Veenman, 1984). Teacher education programs provide opportunities to learn and experience teaching for the beginning teachers and also might have a considerable effect on students' learning (Tatto, Lerman & Novotna, 2009). On the other hand, teachers are now expected to meet demands of the latest change in the mathematics curriculum which requires more efforts of teacher education programs. Preservice teachers' feelings of preparedness might help teacher educators understand the current state of teacher education in meeting these requirements (Lewis et al., 1999). Thus, outcomes of the study might provide crucial information in terms of programs and policy for the teacher educators.

The year level in the teacher education program might have an influence on preservice teachers' feelings of readiness for the teaching profession. In Işıksal's study (2005), it was found that there was a significant effect of year in the program on both preservice teachers' performance and self-efficacy scores. Considering the findings of this study, it might be hypothesized that the year level in the teacher education program might create a difference on the readiness of preservice teachers. Besides, 3rd and 4th year of teacher education programs are the periods in which the preservice teachers are presented with more pedagogical content knowledge courses. The fourth year in Elementary Mathematics Education (EME) programs includes two teaching practice courses with different intensities. Considering the importance of practice courses on preservice teachers' training for the profession (Weitman & Colbert, 2003), the study focuses on the possible differences due to the year level in the teacher education program.

The possible difference due to the gender of preservice teachers is another focus of this study. Since gender has been one of the most crucial variable studied in mathematics education for many years (Işıksal, 2005) and gender differences in mathematics education have been considered as a source of concern for mathematics educators (Alkhateeb, 2001; Ercikan, McCreith, & Lapointe, 2005), it might be the case that the preservice teachers might have different feelings of readiness due to their gender.

A third important concern of the study is the high school that the preservice teachers have graduated. Most of the preservice teachers come to the teacher education programs from teacher education high schools where teaching related courses are presented to the students. Teacher education high schools are established in order to increase the teacher quality (Çeliköz & Çetin, 2004). Therefore, teacher education high schools might make a significant difference in the readiness of preservice mathematics teachers.

The existence of a teacher in the immediate family of preservice mathematics teachers is the last issue investigated in this study. Coultas and Lewin (2002) stated that family have a great influence on preservice teachers. Considering that the preservice teachers might take a role model in their family, it might be speculated that existence of a teacher in the immediate family is likely to create a difference on the readiness of preservice teachers.

Teachers' readiness worth investigating since it helps in understanding the strengths and weaknesses of the teacher education programs. The areas preservice teachers feel unprepared would be identified and courses that address these

weaknesses might be arranged to help them in getting prepared for the challenges of teaching especially in the first few years. Considering the lack of studies related to the readiness of preservice mathematics teachers toward teaching profession in Turkey, it is believed that the findings of this study will also make a contribution to the literature about teacher education in Turkey and direct further studies. Moreover, it would provide valuable information in developing the inservice programs especially for beginning teachers.

1.4. Assumptions and Limitations

It is assumed that the preservice mathematics teachers participated in the study replied the items sincerely and reflected their opinions objectively. It is also assumed that the sample reflects the target population. Lastly, the readiness scale is assumed to measure the readiness of preservice mathematics teachers adequately and the differences in the scores might not be due to the university the participants attended.

The study is limited to the data collected in the academic year of 2009-2010 in the universities in Ankara, Burdur, Bolu, Gaziantep, İzmir, Samsun, and Sakarya. Data collection in the universities outside Ankara was conducted by the help of graduate assistants or faculty members contacted at those universities. Therefore, the conditions that the scale was implemented at those universities were unknown. This is a serious limitation which might affect the normality of the data. In order to decrease this effect, the contacted faculty members and the graduate assistants were instructed either via e-mail or on the phone on how they should be implementing the

scale. It was assumed that the scale was implemented under similar conditions in Elementary Mathematics Education Program courses.

The convenience sampling employed in this study addresses a problem for the generalization of the findings. Although the data was collected through convenience sampling, the universities that were contacted were located throughout Turkey. Moreover, since Elementary Mathematics Education programs have very similar courses and course layout through the semesters, it is assumed that the sample of the study would reflect the population to a certain extent.

The study investigated preservice mathematics teachers' readiness for teaching profession only by quantitative data collected through a questionnaire. Therefore, it lacks an in-depth analysis of their readiness. Additional interviews might have been used to gather more in depth information from a representative of the preservice mathematics teachers.

1.5. Definitions of Important Terms

Preservice Mathematics Teacher: Preservice mathematics teacher refers to 3rd and 4th year elementary mathematics education program students at the universities.

The following definition by Black (2003) is employed for the study:

Teacher Preparedness: "The extent to which teachers' training prepares them to meet the challenges of this profession." (p.14).

Teacher Readiness: It is a psychological construct that addresses the extent the preservice mathematics teachers feel that they are ready for the teaching profession and it can be measured via Readiness to Teaching Scale which has 44 items.

For the purposes of the study, teacher preparedness and teacher readiness are used interchangeably.

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter represents the related studies conducted abroad and in Turkey concerning readiness of preservice teachers. The review of literature consists of five sections about teachers' self-efficacy, novice teachers, teacher education and readiness for teaching, field experience, and teacher quality and competencies. Since very few studies have focused on the readiness of preservice teachers, first self-efficacy will be mentioned since teacher's perceptions of preparedness might be significantly related to teachers' sense of efficacy (Raudenbush, Rowen, & Cheong, 1992). Because views of self-efficacy are shaped early at the beginning of the profession, how novice teachers feel they are prepared for the teaching profession and the problems in their first year will be explored. As the field experience is vital for the preparation of teachers (Weitman & Colbert, 2003), , the influence of field experience courses as well as the recent teacher competencies of the MNE will also be presented.

2.1. Teachers' Self-Efficacy

Social learning theory focuses on the observation of other people as a part of the learning process (Woolfolk, 2004). Social cognitive theory brings cognitive elements such as beliefs, self-perceptions, and expectations in the social learning theory; therefore, delineating learning from carrying out of the actions that were learned earlier. Through models, it is possible to acquire skills and strategies that an

individual might not show at the time that they observed the model behavior, rather the person might wait until he/she wants to implement the learned behavior and thinks that it is the right time to do this (Schunk, Pintrich & Meece, 2008).

Several internal and external elements act upon the process of learning in social cognitive theory. Personal factors, the physical and social environment, and behavior influence and are influenced by each other and Bandura calls this interaction of forces “reciprocal determinism” (Bandura, 1986). Personal characteristics of a person are determined by both one’s behavior patterns and environmental conditions. Similarly, behavior is shaped by person’s personal characteristics and environmental conditions. This framework addresses a complex relationship between teaching behaviors, the environment where the teacher works, and personal dispositions, such as feelings of preparedness (Housego, 1990). According to Pajares (2002), Bandura changed the name of his theory from “social learning” to “social cognitive” in order to separate it from other social learning theories and to address that cognition has a critical role in people's capacity to structure reality, self-regulate, set information, and carry out behaviors. Bandura (1997) broadens social cognitive theory’s context in order to include learning and performance of cognitive, social, and motor skills, strategies, and behaviors. Self-efficacy is the core of social cognitive theory (Çapa, 2005).

Self-efficacy is related with the individual’s self judgment about his capacity to organize the necessary activities and do these activities successfully for a specific performance (Bandura, 1986). In other words, it is the individual’s self belief which is related to the extent she/he can cope with the difficult situations in the future. The

examples for the difficult situations might be examinations, competitions, teaching in a class, and public speaking. Self-efficacy is not a function of individual's abilities. It is the product or the result of the individual's judgments about what he can do by using his abilities. Self-efficacy is the person's self-perception, belief and judgment that is related to his ability and capacity to achieve and handle different situations (Senemoğlu, 2003).

Teacher efficacy is explained as "the teacher's beliefs in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233). It is an estimation of future capability. It is also explained as "teachers' beliefs in their ability to have a positive effect on student learning" (Ashton, 1985, p. 142).

There is a link between teachers' sense of preparedness for teaching and their personal teaching efficacy (Ashton & Webb, 1986). Black (2003) claims that feelings of self-efficacy in motivating students and dealing with individual differences might not be related with actual competency levels as expected, but might be more connected to self-perceptions of teachers' abilities in the classroom. While maturation brings competencies with the age, it provides readiness that is necessary for an individual to gain new and complicated behaviors as long as learning opportunities are given. Readiness includes not only individual's maturational level but also his prior learning, interests, attitudes, motivational level, abilities, and general state of health (Senemoğlu, 2003). On the other hand, views of self-efficacy appear to be formed early at the beginning of the profession and difficult to be

changed later. (Tschannen-Moran et al., 1998). Since feelings of well-preparedness and high motivation are crucial in terms of teaching (Housego, 1990), how preservice and beginning teachers feel about being prepared for the profession becomes important.

2.2. Novice Teachers

Teaching is not much considered as a difficult job, but it is more difficult than it seems. Novice teacher begin their profession with a belief that they can make small and important changes on both society and students' life. However, these best ideals and dreams become nightmares. Hence, they start to struggle with the challenges in order to survive (Krasnow, 1993). Approximately one-fourth of new teachers quit the teaching profession within four years. Professional development programs aiming to provide beginning teachers with more knowledge and skills about pedagogy and curriculum, adapting to the school atmosphere, improving their organizational skills, and gaining confidence in working with colleagues and stakeholders might not be sufficient for novice teachers to continue teaching profession (Hoerr, 2005).

The difficulties beginning teachers meet are related mostly to students and classroom. Classroom management and discipline problems are identified as the most serious and persistent issues in most of the studies concerning early experiences of teaching (Barrett & Davis, 1995).

When beginning teachers enter the classroom, the expectations about the profession and the realities they encounter might not be the same (Melnick & Meister, 2008). Beginning teachers may have unrealistic expectations regarding teaching profession before entering the classrooms. When they enter the classroom,

they face a harsh reality of everyday teaching (Lundeen, 2004) which Veenman (1984) describes as the “reality shock” (p. 143). Veenman’s extensive review on beginning teachers’ problems in the early years of teaching addresses that the most serious problem beginning teachers face is classroom discipline. Dealing with students’ motivation, individual differences, assessment of students’ work, relationships with parents, class work organization, lack of materials and supplies, and the problems of individual students are also widely mentioned for beginning teachers both in elementary schools and in secondary schools. Most of the beginning teachers do not feel well prepared to accomplish these daily challenges. This results in leaving the profession at the early stages (Thomas & Kiley, 1994).

Novice teachers graduate from a teacher education programs trained as teachers and are aware of what it means to be a teacher and the teaching profession (Smith, 2005). Although teacher education programs have been found successful in preparing the preservice teachers to teaching profession, the reality shows difference. Many novice teachers find the transition from preservice teacher to inservice teacher difficult (Lindgren, 2005). This results in feelings of unpreparedness for meeting the needs of students, classroom management, and understanding culture of school (Stanulis, et al., 2002). Therefore, determining the challenges the new teacher encounter is important and support should be provided (Fantilli & McDougall, 2009). According to Veenman (1984), the concept of reality shock in the first year of teaching may be prevented by understanding the perceptions of novice teacher’s beginning teaching experiences. Courses focusing on the specific demands of teaching are also reported as a need by beginning teachers (Britt, 1997).

2.3 Teacher Education and Readiness for Teaching

A teacher as a human engineer is the fundamental part of the education. Teacher is the most efficient and responsible person who shapes the students' life styles, their attitudes toward the society, and affects students' development as well as creativity (Ataünal, 2000). The basic determiner of the education quality is the teacher. He has a direct effect on not only the environment but also the country's development (Ünal & Ada, 1999). Therefore each country gives importance to the preparing their teachers through special programs (Ataünal, 2000). The National Council of Teachers of Mathematics (NCTM, 2000) has stressed the importance of high-quality teacher preparation which affects the development of the society. Moreover, it was found that not only the course but also teacher quality had an effect on the mathematics success of students (Presley & Gong, 2005).

Teacher education programs are the places where preservice teachers are trained for their future profession (Imbimbo & Silvernail, 1999). Many beginning teachers feel unprepared when they start teaching in their first year, despite the efforts of the teacher education programs. Teachers with less preparation for teaching are not as confident and successful with students as prepared teachers (Darling-Hammond, 2000). Therefore, preparing high-quality teachers is the key in students' success. However, teacher education programs have been addressed as ineffective in preparing the teachers for the new requirements, distant from practice, and not attractive in recruitment of clever students in teacher education institutions (Darling-Hammond, 2000). While teacher education needs an extensive investigation, examining to what extend teachers feel prepared when they graduate from the

teacher education programs to satisfy the expectations and demands would provide a great value (Lewis et al., 1999).

Feelings of preparedness have a great value in terms of teaching tasks (Housego, 1990). Besides, they are one of the major indicators of the readiness of teachers. Teacher qualifications and preparation do not completely inform us about whether teacher education prepares teachers to respond the challenges they meet. It is reported that teachers feel either “moderately” or “somewhat” well prepared in terms of conducting classroom activities. The areas that teachers do not feel ready are conducting different activities and determining the needs of students with different home conditions (Lewis et al., 1999).

Research addresses contradictory findings about feelings of preparedness for classroom management. It has been reported that classroom management is the issue that the new teachers struggle the most (Veenman, 1984). Classroom management involves arranging classroom settings, establishing predictable classroom rules, providing special outcomes for poor behaviors, and giving positive reactions for appropriate behavior. Since beginning teachers have not have had such training as part of their teacher preparation program, they are confronted with the difficulties in the classroom (AFT, 2007). Therefore, they feel insecure regarding classroom management (Fottland, 2004). However, some studies have shown that the area that teachers felt very well prepared in maintaining order and discipline in the classroom as well as effective classroom management skills (Lewis et al., 1999; Imbimbo & Silvernail, 1999). Moreover, Imbimbo and Silvernail (1999) indicate the areas that the teachers mostly consider being prepared are the subject area knowledge and

instructional strategies, and proficiency in utilizing educational technology. On the other hand, integrating technology into course was one of the areas that teachers felt least prepared. In his study, Housego (1990) stated while greatest feelings of preparedness are seen in adapting school setting, designing and using questions as well as encouraging students, preservice teachers feel least prepared to handle some situations, such as solving classroom behavior problems, grouping and assessing learners, and selecting appropriate methods for teaching. It was also found that preservice teachers at field experience in grades 7 and 8 were not as ready as preservice teachers in 9 through 12 grades (Lewis et al., 1999).

Beginning teachers' feelings of preparedness were investigated in Texas to see how prepared they feel to teach all students without considering the level of poverty (Zientek & Thompson, 2008). Novice mathematics and science teachers in their first three years of teaching were implemented a survey about their self-efficacy in classroom teaching both online and in real environments. The results showed that overall preparedness was minimally related with prior classroom experience as most of the mathematics and science teachers had classroom experience before teaching. Most of the teachers felt fairly prepared about using technology in the classroom. Teachers also felt relaxed while working with colleagues. On the other hand, both science and mathematics teachers did not feel well-prepared to identify and obtain materials for a multicultural curriculum, create discipline and interdisciplinary curriculum, help self-motivate students, work with parents to understand students, help students self-assess their learning, or develop curriculum based on students' experiences. The study showed that teacher preparation programs might not respond

the challenges of teaching for all students and might need revisions for preparing teachers. Similarly, the preparedness of traditional preservice teachers (18 to 21-year old age) has been investigated in several teacher education programs in Tennessee (Ayers & Thompson, 1990). The “Perceptions for Student Teaching Instrument” (PSTI) was developed in order to investigate preservice teachers’ perceived readiness and views about: (1) college preparation for student teaching experience, (2) knowledge of subject(s), (3) management/communication skills, (4) organization skills, (5) communication skills, (6) previous field experiences/practicum, (7) instructional ability, and (8) overall assessment of preparedness. The results showed that there were no significant differences in perceptions of preparedness for student teaching between students, genders, and institutions. It was suggested that the study should be replicated including different institutions and students.

Belcheir (1998) investigated the readiness of new teachers for the classroom after their graduation from a teacher education program. The beginning teachers were asked what they were doing and, if they were teachers, what they were thinking about their preparation for the profession. Although most of the graduates claimed that they were well-prepared for the teaching profession to a great extent, they wished that they would have had more time and chance in real classrooms during their undergraduate education.

2.4. Field Experience

Practice and field experience courses are important for the preparation of teachers (Weitman & Colbert, 2003). Field practice provides an opportunity for preservice teachers to get ready for their profession and help them make decisions.

Preservice teachers can develop their goals and apply techniques regarding the profession through the field experience (Aklan & Hacıoğlu, 1997). Student teaching gives preservice teachers many opportunities, such as performing their teaching skills in real classrooms and raising awareness of feelings of preparedness before entering the real classrooms as formal teachers. Negative emotions affect not only feelings but also performance for student teaching. It is reported that the more preservice teachers have field practice, the more successful they are in the real classrooms (Weitman & Colbert, 2003). Field experiences are considered to make student teachers feel more prepared for their profession. Even one year of studies in teacher education program could significantly increase the feelings of preparedness of student teachers about teaching (Housego, 1990). Therefore, how well the preservice teachers feel about the teacher education program experiences are crucial (Ayers & Thompson, 1990).

Field experience provides student teachers with the opportunity to transfer what they have learned in the university to the practice as a real experience. It is widely considered to be the most crucial component of teacher preparation. A study conducted in Singapore (Goh, Wong, Choy, & Tan, 2009) shows that confidence level of student teachers become greater at the end of teaching practices. Field experiences in the teacher education programs involved in this study are effective in terms of making student teachers feel well-prepared for the teaching profession. It was emphasized that getting firsthand experience in schools gave an advantage to student teachers for being prepared better. Therefore, investigating the influence of field experience on readiness of preservice teachers seems to be important.

There are several studies related to field practice in Turkey. For instance, a study was conducted in Erzincan University at the Department of Elementary Education three times in the academic year 2007-2008, at the beginning of the fall semester, at the end of the fall semester and at the end of the spring semester (Özturan Sağırılı et al., 2009). Its aim was to investigate the influences of the courses of School Experience II and Teaching Practice on the perception of self-efficacy towards teaching. The participants were the senior students studying at Mathematics, Social Sciences, Natural and Applied Sciences, and Primary School Teaching Programs. Outcomes of the study showed that the perceptions of self-efficacy of preservice teachers towards teaching had increased after taking the courses of School Experience II and Teaching Practice. Furthermore, it was also found that preservice teachers from Social Sciences and Primary School Teaching Programs had more the increase in the perceptions.

In Çiçek and İnce's study (2005), twenty four senior students at physical education teacher education program constituted the sample of the study. They were attending field practice course. It was found that classroom management, content knowledge, and classroom discipline were the helpful parts of the field practice. In addition to this, senior students reported that field practice made contribution to their personal characteristics and increased their communication skills. As a conclusion, field practice helped senior students in developing teaching skills in a real atmosphere and relationships with students as well as content knowledge.

In Eraslan's study (2009), 47 preservice teachers taking field practice course wrote their reflections regarding field practice. Findings displayed that they did not

enough opportunity to practice teaching, they took little or no feedback from their teachers, and there was no link between pure mathematics courses and school mathematics. On the other side, preservice teachers indicated that they got benefit from the courses related to teaching and this made them feel as the real teachers of the classroom. Furthermore, they stated that the field practice gave more opportunity to know the students and school environment.

Turkish studies have shown that field experience is an important component of the teacher education programs in terms of preparing preservice teachers for the teaching profession.

2.5. Teacher Quality and Competencies

The competencies that a teacher needs to have are continually discussed in Turkey as well as all around the world. Thus, the teacher training programs are frequently updated according to these competencies (Şişman, 2009a). Ministry of National Education (MNE) lists some values under the titles of “personal and occupational values” about teacher competencies, however, whether these values are personal or occupational is an issue which should be discussed (Şişman, 2009). Furthermore, values belonging to affective domain take little part in teacher competencies because they are not seen as measurable (Şişman, 2009a).

Teaching profession includes not only theory but also practice. To be equipped only with theoretical knowledge is not enough to be a qualified teacher. At the same time, practicing and gaining experiences are essential for teachers. It is known that the Higher Education Council (HEC) also works on the definition and the development of the teacher competencies. The most important thing is to provide

continuity on the implementations. It is necessary to do implementations for sufficient time and support them with scientific studies (Ayas, 2009).

A study comparing the qualities and competencies required by MNE and preservice mathematics teachers' acquisitions in education faculties have been conducted in Turkey (Arslan & Özpınar, 2008). The findings showed that preservice teachers claimed that they had most of the competencies defined by MNE in terms of personal and professional development, the process of learning and teaching, evaluating of learning and development, and school, parent and community relations. However, preservice teachers were concerned about the curriculum and using instructional technology in the classroom because they did not have enough opportunity to implement them in the real teaching environments. They felt inadequate in terms of relating mathematical content to daily life and other disciplines and utilization of the contextual resources which were not mentioned sufficiently in the textbook. Findings of interviews displayed that although alternative assessment and evaluation techniques and the rights and responsibilities of teachers were placed in the textbooks, preservice teachers did not feel adequately prepared for these areas. When textbooks were inspected, it seemed that they covered most of the competencies. As a conclusion, competencies identified by MNE and acquisitions of preservice teachers in education faculties were mostly consistent. Authors claimed that research about to what extent preservice teachers in education faculties meet the general teaching competencies stated in the elementary education programs would be needed (Arslan & Özpınar, 2008). In order to respond to the concerns of educators in adequately preparing teachers, examining the degree to

which teachers feel themselves prepared needs to be investigated (Lewis et al., 1999).

2.6. Summary

Research has shown that there is a link between teachers' sense of preparedness for teaching and their personal teaching efficacy. Teachers' sense of efficacy is likely to develop in the early years and therefore their feelings of preparedness may also be developed in teacher education programs. The challenges beginning teachers struggle with indicate that beginning teachers may not feel well-prepared for the teaching profession. While the teacher education programs and certain components of these programs such as field experience courses seem to be effective in preparing teachers for the teaching profession, to what extent the preservice teachers feel themselves ready for the teaching profession is unknown.. Studies about to what extent preservice teachers meet the general teaching competencies and readiness to teaching profession in Turkey was also few, addressing the need for investigating preservice teachers' readiness for the teaching profession.

CHAPTER III

METHOD

The main purpose of this current study was to investigate the extent of perceived readiness of preservice elementary mathematics teachers and the possible differences in their readiness based on the year level in the teacher education program, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family. The specific research questions addressed in this study were:

1. What is preservice mathematics teachers' perceived readiness for teaching profession?
2. Is there any statistically significant difference between 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers on their readiness scores?
3. Is there any statistically significant difference between female and male preservice mathematics teachers on their readiness scores?
4. Is there any statistically significant difference between preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types on their readiness scores?
5. Is there any statistically significant difference between existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence

of a teacher in the immediate family of preservice mathematics teachers on their readiness scores?

This chapter will give a detailed account of the overall design of the study, participants, instrumentation, data collection procedures, data analysis methods, and threats to internal validity.

3.1. Overall Design of the Study

A causal-comparative research design was employed for the study since this design helps in to determining the possible causes or consequences of differences that already exist between or among groups of individuals (Fraenkel & Wallen, 2006). After determining the difference between the two groups of individuals and then the possible causes for the difference, or consequences of, this difference is investigated. Table 3.1 shows the overall research design.

Table 3.1. Overall Research Design

1. Research Design	Causal-Comparative Research
2. Sampling	Convenience Sampling
3. Variables	
Independent Variables:	Year, Gender, High School Type, Existence of a Teacher in the immediate family
Dependent Variable:	Readiness to teaching profession
4. Instrument	Readiness to Teaching Profession Scale
5. Data collection procedure	The readiness scale was employed to 728 preservice mathematics teachers at ten universities in their classes within 15 minutes
6. Data analysis procedure	Descriptive statistics and independent-samples t- tests

Causal-comparative research design was employed and convenience sampling was used in the present study. The year level in the teacher education program, gender, graduated high school type and the existence of a teacher in the immediate family were the independent variables. Dependent variable was the readiness scores. Readiness to teaching profession scale was used for data collection. This scale was employed to 728 preservice mathematics teachers at ten universities in their classes within 15 minutes. Descriptive statistics and independent-samples t- tests were conducted for data analysis procedure.

3.2. Participants

A total of 420 third year preservice mathematics teachers and 308 fourth year preservice mathematics teachers from ten universities in Ankara, Burdur, Bolu,

Gaziantep, İzmir, Samsun, and Sakarya in 2009-2010 education year constituted the sample group of the study. The preservice teachers were studying at Middle East Technical University, Hacettepe University, Gazi University, Başkent University, Mehmet Akif Ersoy University, Abant İzzet Baysal University, Gaziantep University, 9 Eylül University, 19 Mayıs University, and Sakarya University. All 3rd year preservice mathematics teachers and senior preservice mathematics teachers in Turkish universities were identified as the target population. However, there are 44 universities with Elementary Mathematics Education (EME) Program in Turkey, which would require extensive time and resources in order to reach all the EME programs in Turkey. Instead, the researcher tried to reach the preservice mathematics teachers at the universities in which she had contacts. Hence, a convenience sampling was used in the study since the researcher was able to reach the preservice teachers at the mentioned universities through convenient contacts. The reason why participants were chosen from 3rd and 4th year preservice mathematics teacher was that in contrast to other year levels, the preservice teachers in these year levels would be enrolled in more pedagogical knowledge and pedagogical content knowledge courses, and especially 4th year students would be enrolled in their field practice courses, which has been generally reported to influence readiness (Goh et. al., 2009).

3.2.1. Demographic Background of the Participating Preservice Teachers

Four hundred and twenty 3rd year preservice mathematics teachers and 308 senior preservice mathematics teachers from ten universities constituted the participants of the study. Overall, there were 487 female and 241 male participants. The distribution of preservice teachers ($N = 728$) by the year level, gender, high

school type, and existence of a teacher in the immediate family are presented in table 3.2.

Table 3.2. Participants' Demographic Data

Variable		N	%	M	SD
Year	3 rd year	420	57.7	3.70	.58
	4 th year	308	42.3	3.96	.55
Gender	Female	487	66.9	3.81	.57
	Male	241	33.1	3.82	.61
High school type	Teacher education	423	58.1	3.79	.60
	high school				
	Other	305	41.9	3.84	.55
Existence of a teacher in the immediate family	Yes	256	35.2	3.88	.59
	No	472	64.8	3.78	.57

Note: Number of missing values is not presented in the table.

3.3. Instrumentation

The data were collected through a survey instrument with 44 items composed of readiness statements with a 5-point scale, where 1 corresponded to “not ready” and 5 corresponded to “completely ready.” The lowest score that could be obtained from the scale was 44 while the highest score was 220. A higher score on this scale pointed higher readiness for the profession.

3.3.1. Instrument Development

A readiness scale composed of two parts developed by the researcher was used for data collection. The first part of the scale included questions related to the demographic information, including the department, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family in order to investigate the possible relationship. The second part included items from the readiness scale developed and used by Belcheir (1998) and items developed after an extensive literature review including the teaching profession competencies study conducted by the Ministry of National Education (MNE). An initial item pool of 49 items was generated based on Belcheir's study, MNE's teaching profession competencies, and related literature. There were 23 items related to instructional planning, instructional approaches, learning environments, evaluation of student competency, applications of technologies, students as learners, professional development, and parent/colleague/community relations in Belcheir's (1998) study. However, there were not any items regarding the preservice teachers' readiness in teaching in relation to the content knowledge. Readiness in content knowledge was considered as important for this study since the outcomes of student learning would be affected from teachers' content-specific knowledge, attitudes, and beliefs (Koehler & Grouws, 1992). Similarly, preservice teachers' teaching behavior would mainly be influenced from their content-specific knowledge and skills (Shulman, 1986). In addition, the Ministry of National Education (MNE, 2008) outlines competencies as personal and professional values-professional development, knowing the student, learning and teaching process, monitoring and evaluation of

learning and development, school-family and society relationships as well as knowledge of curriculum and content knowledge. Hence, the items related to the content knowledge were added through the scale. Only 15 items used from the Belcheir's study since most of the items were broad and addressing more than one competency. The rest of the items were developed by investigating the MNE's general teacher competencies and related literature.

In the MNE's general teacher competencies, there are 6 main areas of competencies as mentioned above. In personal and professional values-professional development, teachers see students as a individual and value them. They are open to new ideas and take part in the both their personal development and development of the institution work in. In knowing the students, teachers know all the characteristics, needs, and interest of students. In the teaching and learning process, teachers arrange teaching and learning process and implement in the classroom. In monitoring and evaluation of learning and development, teachers evaluate the development of students and their learning. They provide self-evaluation and peer-to-peer evaluation for students. In school-family and society relationships, teachers know the natural, socio-cultural, and economic characteristics of school environment. They encourage the parents and society to involve in the training process. In knowledge of curriculum and content, teachers know and implement the principles and values based on the National Education System. Since values belonging to affective domain took little part in the MNE teacher competencies, this domain was not taken into consideration in developing the scale. The development process of the scale after gathering a pool

of items from Belcheir's study, the MNE study, and related literature was described step by step below.

Items from Belcheir's (1998) study were translated into Turkish and the rest were developed in Turkish. An English language specialist in Academic Writing Center at Middle East Technical University made few changes on word order, vocabulary, grammar, and clarity of the translated items, rearranged some sentences, and made essential revisions.

Two researchers from each of early childhood education, science education, and mathematics education fields, ten graduate students taking a graduate course on test construction, and one researcher in measurement and assessment field reviewed the items in terms of content representativeness and face validity. They addressed certain improvements in formatting, demographics, and high school information at the first part of the scale. The improvements that the reviewers suggested were made in order to increase the face validity of the instrument.

After the improvements, cognitive interview was also conducted in order to get more evidence for the content validity. One senior preservice science teacher participated in the cognitive interview and it lasted thirty minutes. He commented on the sentences that were not clear to him and few revisions were made based on his suggestions. Items were removed from the scale since he pointed that the expressions in the items might be perceived in several ways or the items were completely unclear. As a result, the final version of the second part of the questionnaire included 45 items related to content knowledge, instructional planning, instructional

approaches, learning environments, evaluation of student competency, and students as learners, professional development, and parent/colleague/community relations.

3.3.2. Pilot Study

The initial version of the scale consisting of 45 items was piloted with 228 preservice teachers from several fields including Early Childhood Education, Primary Education, Science Education, English Language Education, Computer Education and Instructional Technology and the other departments (Turkish Education, Chemistry Education, Physics Education, History Teaching, and Biology Education) in Ankara in the fall semester of 2009-2010 education year. They were attending private teaching institutions preparing preservice teachers for a national examination used to hire government employees. In an effort to explore the factorial structure of the scale, an exploratory factor analysis (with maximum likelihood and direct oblimin rotation with delta set at 0) was conducted. There was not any item whose wording indicated a negative statement. Therefore, the scale was not reversed. The analyses were conducted by SPSS 15.0 program.

3.3.3. Validity and Reliability

3.3.3.1. Validity Analysis

Validity refers to the degree to which a test measures what it is planned to measure (Fraenkel & Wallen, 2006). In addition to ensure content representativeness and face validity mentioned above, exploratory factor analysis (EFA) was performed to get evidence for construct validity.

3.3.4. Factor Analysis

The assumptions of normality were controlled before conducting the factor analysis of the scale. According to Kunnan (1998) when the values of kurtosis and skewness are between -2 and +2, they could be assumed as approximately normal (as cited in Ağazade, 2001). The kurtosis values of 5 items exceeded the interval between -2 and +2. Yet, all skewness and kurtosis values were accepted as tolerable for the normal distribution.

Shapiro-Wilks and Kolmogorov-Smirnov tests are two common statistical tests to check normality. These test results should be non-significant. However, the results of these tests were significant for all items ($p < .05$). Therefore, the distributions of all items were not normal and normality assumption was violated. However, it was reported as quite common in large samples (Pallant, 2007). For the sample size, Guilford (1954) recommended that at least 200 cases would be needed for the factor analysis. Having at least five times as many participants as the number of items is also considered an acceptable measure in factor analysis (Hair et al., 1998). Therefore, the sample size for the pilot study ($N = 228$) met the two mentioned sample size requirements of factor analysis. According to Hair et al. (1998), there should not be any item whose correlation is less than .30 with the other items. The correlation matrix showed that there were not any problematic items and the items seemed to be correlated with each other.

3.3.4.1. Factor Structure of the Questionnaire

The other assumptions which are Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) were examined. Bartlett's Test

of Sphericity “provides the statistical probability that the correlation matrix has significant correlations among the variables” (Hair et al., 1998, p.99). The analysis showed that Bartlett’s Test of Specificity is significant ($p = .00$), therefore, this assumption was met. According to Hutcheson and Sofroniou (1999), KMO values between .5 and .7 are mediocre, values between .7 and .8 are good, values between .8 and .9 are great and values above .9 are superb (as cited in Field, 2005). For the pilot study data, the KMO value was .93, which fell into the range of being superb. Hence, factor analysis was appropriate for these data.

In conclusion, all the assumptions were met in order to begin the factor analysis.

3.3.4.2. Factor Extraction

Principal Component Analysis (PCA) does not discriminate between unique and shared variances and it is only a data reduction method (Costello & Osborne, 2005). For construct validation purpose, Maximum Likelihood Estimation was preferred.

Number of the factors was decided based on eigenvalues and screeplot. The factors with eigenvalue higher than 1 were considered as significant as there is a consensus in the literature that the factors with eigenvalue greater than 1 are retained (Costello & Osborne, 2005; Hair et. al. 1998). Table 3.3 shows the eigenvalues, percentages of variance, and cumulative percentages of factor. When initial values were examined in the variance explained table below, it was seen that there were one factor explaining the 36.59 % of the total variance.

Table 3.3.Total Variance Explained

Factor	Eigenvalue	% of Variance	Cumulative %
1	16.10	36.59	36.59

Note. Maximum Likelihood extraction method was used.

3.3.4.3. Factor Interpretation

According to eigenvalues, the results of the factor analysis showed that there were 1 underlying factor among the 45 items. Factor loadings of an item was lower than .30 in all factors. Therefore, this item was omitted from the scale. Whether elimination of this item affected the factor it had belonged was examined and no serious problem was detected.

Screeplot is also used to decide on the number of factors since it is reported as the best option for researchers (Costello & Osborne, 2005). From the inspection of the plot, it was seen that curve begins to tail off after one component. Therefore, one factor was decided. Figure 3.1 shows the screeplot.

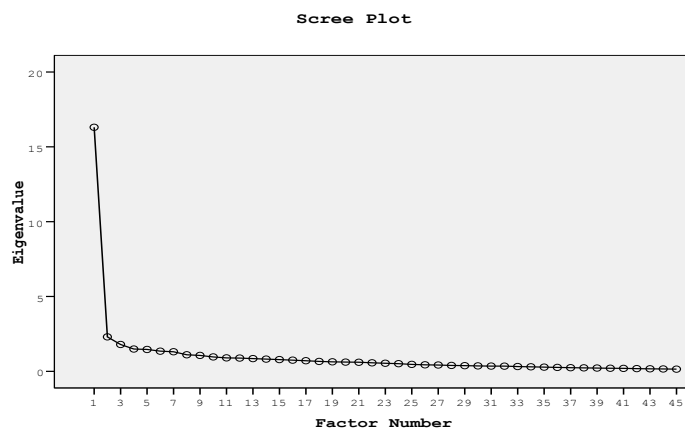


Figure 3.1.Screeplot of eigenvalues

The range of factor loadings were between .33 and .72. Hence, the scale had one factor and it was named as “Readiness in Teaching”. Items and factor matrix is given in Appendix A.

3.3.4.4. Reliability Analysis

Reliability refers to whether the assessment provides consistent results. Cronbach's Alpha is the most commonly used measure for assessing the consistency (Hair et. al., 1998) and there is a general agreement that the lower limit for Cronbach's Alpha should be .70. In the present study, Cronbach's Alpha value for Factor 1 readiness in teaching scale was .96 indicating a very good internal consistency.

3.3.4.5. Final Version of the Scale and the Second Study

According to the outcomes of factor analysis, because of the factor loadings of an item was lower than .30 in all factors, this item was omitted from the scale. Then, the scale was presented to two researchers who had doctoral degree in the mathematics education field. Their opinion on clarity and content coverage were taken and accordingly it was found appropriate, and the scale was finalized. As a result, 44 items were remained. The final version of the scale is given in Appendix B.

There were 728 preservice mathematics teachers in the present study. The range of factor loadings were between .48 and .75. Similar, the factor analysis yielded one factor and the Cronbach's Alpha value for Factor 1 (readiness in teaching scale) was .97 indicating a very good internal consistency. Table 3.4 shows the

values for the number of items, eigenvalues, variance explained and the Cronbach's Alpha for both pilot study and second study.

Table 3.4. Pilot and Second Study

	Pilot Study	Second Study
N	228	728
Item Number	45	44
Eigenvalues	16.10	18.67
% of Variance	36.59	42.43
Cronbach's Alpha	.96	.97

3.4. Variables

The variables of the study are presented in Table 3.5

Table 3.5. The classification of Variables used in the study

Name	Variable Type	Value Type	Scale Type
Year	Independent	Categorical	Nominal
Gender	Independent	Categorical	Nominal
High School Type	Independent	Categorical	Nominal
Existence of a Teacher in the immediate family	Independent	Categorical	Nominal
Readiness scores	Dependent	Continuous	Interval

This study has four independent variables (IVs) and one dependent variable (DV). The independent variables are the year (3rd year or senior), gender (male or female), high school type (teacher education high school or other) and existence of a teacher in the immediate family (yes or no). Dependent variable is the mean scores of preservice mathematics teachers' readiness on teaching profession.

3.5. Procedures

Official permissions were obtained from the ethical committees of Middle East Technical University, Hacettepe University, Gazi University, and Başkent University before the data collection. The researcher also gathered the permission from Mehmet Akif Ersoy University, Abant İzzet Baysal University, Gaziantep University, 9 Eylül University, 19 Mayıs University, and Sakarya University via submitting the instrument and a summary of the purpose of the study.

The participants were informed about the purpose of the study and the consent form was given. It was declared that participation was voluntary, their responses would only be used for the study, and the responses would be kept strictly

confidential. Data collection in the universities outside Ankara was done by the help of graduate assistants or faculty members contacted at those universities. They were instructed to implement the scale as explained above. The scales were sent to the contact person at each university via mail and the filled out scales were gathered through the same way. The data collection procedure took about one month March-April, 2010.

3.6. Data Analysis

Both descriptive and inferential statistics were conducted via SPSS software program. The demographic information was analyzed by using frequencies, percentages, mean, and standard deviations. The responses to questionnaire items were referred by a numeric value from 1 to 5 with 1 corresponded to *not ready* and 5 corresponded to *completely ready*. The scores for the 44 items were summed to give a total readiness score for each participant, 220 indicating the higher readiness in the profession whereas 44 pointed to lower readiness in the profession.

The first research question which addressed preservice mathematics teachers' readiness was investigated through descriptive statistics such as mean values. In order to investigate the following research questions, independent-samples t-tests were conducted since the study aimed to investigate the difference between the mean scores of two groups of people (Pallant, 2007).

3.7. Threats to Internal Validity

There might be data collector characteristics threat due to gender, age, language style, or other features of the data gatherers since multiple data collectors were used in the study (Fraenkel & Wallen, 2006). In the present study, data

collectors were instructed and necessary explanations were made about the implementation of the questionnaire in order to decrease the data collector characteristics threat.

Data collector bias might be another threat to internal validity. The data collector or scorer might unconsciously distort the data and the results would be on the part of their demand (Fraenkel & Wallen, 2006). In the present study, data collectors were informed to behave in a standard way throughout the classes and universities.

Another threat might be subject characteristics threat. The selection of participants of the study may cause the individuals or groups differing from one another in unintended ways that are related to the variables to be studied (Fraenkel & Wallen, 2006). In the present study, in order to minimize subject characteristics effect, universities located in metropolitan cities and small size cities were included. This study also included grade 3 and 4 students since they are thought to have sufficient pedagogical content knowledge.

Mortality threat might be another threat due to some students' being absent when the scale was conducted (Fraenkel & Wallen, 2006). However, the administration of the scale had not been announced beforehand and the scale was implemented a month before the semester end where students were known to attend the courses, therefore, mortality does not seem to be a threat for this study

CHAPTER IV

RESULTS

In this chapter, firstly, demographic information of the participants is given. Then, the results of descriptive statistics and inferential statistics are presented. For the inferential part, results of independent-samples t-tests are reported.

4.1. Demographic Information

This study employed 420 3rd year preservice mathematics teachers and 308 4th year preservice mathematics teachers as participants. Overall, there were 487 female (66.9%) and 241 male (33.1%) preservice teachers.

4.2. Descriptive Statistics

The first research question which addressed preservice mathematics teachers' readiness was investigated through descriptive statistics such as mean values, standard deviations, skewness, and kurtosis values.

4.2.1. Research Question 1

What is preservice mathematics teachers' readiness for teaching profession?

Seven hundred and twenty-eight preservice mathematics teachers ($N = 728$) responded to the readiness scale. A higher score on this scale pointed higher readiness in the profession. The output presented in table 4.1. illustrates descriptive statistics.

Table 4.1. Descriptive Statistics for Readiness Scores

	N	Min.	Max.	Mean	SD	Skewness		Kurtosis	
						Stat.	Std. Err.	Stat.	Std. Err.
Readiness	728	1.43	5.00	3.81	.58	-.80	.09	1.2	.18
Valid N (listwise)	728								

Table 4.1. indicates that the range of readiness is from 1.43 to 5.00, with a mean of 3.81 ($SD = .58$) on the readiness sores. According to skewness and kurtosis values, distribution of readiness scores is normal. Moreover, the mean score for readiness is found to be 3.81 which is greater than 3- the midpoint of the scale. The findings indicated that preservice mathematics teachers did not perceive their readiness for the teaching profession at a high level.

4.3. Inferential Statistics

An independent-samples t-test is employed when the researcher wants to compare mean scores of two different groups (Pallant, 2007). Therefore, independent-samples t-tests concerning the year level difference, gender difference, high school type difference, and difference of existence of a teacher in the immediate family of the preservice mathematics teachers were conducted in order to investigate the related research questions. Adjusted alpha levels are preferred in order to reduce the possibility of Type 1 error.

4.3.1. Assumptions of Independent-Samples T-Test

Before employing independent-samples t-test, assumptions for this test were controlled. The data was collected from ten universities and also the instrument was applied for once. Therefore, these universities and classrooms did not have an influence on each other and the assumption of independence of observations was met for all research questions. In order to investigate whether distributions were normal, skewness and kurtosis values were examined. The distributions of scores were normal. Table 4.2. illustrates the skewness and kurtosis values for the year, gender, high school type, and family of preservice mathematics teachers. Therefore, the assumption of normality was verified.

Table 4.2 Skewness and Kurtosis Values of Readiness Scores for Year, Gender, High school type, and Family

Variable	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
3 rd year	-.76	.12	1.07	.24
4 th year	-.97	.14	1.94	.28
Female	-.70	.11	.75	.22
Male	-.98	.16	1.92	.31
Teacher Education High School	-.90	.12	1.40	.24
Other High Schools	-.59	.14	.66	.28
Teacher exists in the family	-.97	.15	1.27	.30
No teacher exists in the family	-.73	.11	1.30	.22

Table 4.2. indicates these values changed for class between -.97 and 1.94, for gender between -.98 and 1.92, for high school type between -.90 and 1.40, for family

between -.97 and 1.30 and all of the values were found to be between -2 and +2 showing that they had normal distribution. Furthermore, histograms and Q-Q plots of variables were inspected. Shape of the distribution for all groups revealed normal distribution in the histograms. Normal Q-Q plot supported the normality with straight lines. Lastly, homogeneity of variances as a last assumption of independent-samples t-test was examined. The values for these statistics are presented under each research question below.

4.3.2. Research Question 2

Is there a significant difference in the mean readiness scores for 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers?

An independent-samples t-test was conducted to compare the readiness scores for 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers. As stated before, the distributions of readiness scores of 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers were normal. Table 4.3. illustrates the results of the independent-samples t-test for year level difference in the mean readiness scores.

Table 4.3. Independent-Samples t-test Results for Readiness Scores with respect to Year

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	f	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.41	.52	-6.17	726	.00
Equal variances not assumed			-6.21	676.64	.00

The outcomes showed that the homogeneity of variance assumption was met at the .01 alpha level. According to results of this test, there was a significant difference in readiness scores for 3rd year preservice mathematics teachers ($M = 3.70$, $SD = .58$) and 4th year preservice mathematics teachers, $M = 3.96$, $SD = .55$; $t(726) = -6.17$, $p \leq .00$. The mean difference between 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers was found as $-.26$. The magnitude of the differences in the means was determined by eta squared statistics (.05) computed by the formula 4.1 (Pallant, 2007).

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1 + N2 - 2)} \quad (4.1)$$

According to Cohen's (1988) guidelines, the effect size of .05 was small effect size. This means that there was a practical significance between 3rd year

preservice mathematics teachers and 4th year preservice mathematics teachers' readiness in practice, but it was small.

4.3.3. Research Question 3

Is there a significant difference in the mean readiness scores for female and male preservice mathematics teachers?

An independent-samples t-test was conducted to compare the readiness scores for female and male preservice mathematics teachers. As stated previously, the normality of the distribution of readiness scores of female and male preservice teachers were met. Table 4.4. illustrates the results of the independent-samples t-test for gender difference in the mean readiness scores.

Table 4.4. Independent-Samples t-test Results for Readiness Scores with respect to Gender

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	f	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.66	.42	-.23	726	.82
Equal variances not assumed			-.22	449.39	.82

The outcomes showed that the homogeneity of variance assumption was met at the .01 alpha level. According to results of this test, there was no significant difference in readiness scores for female preservice mathematics teachers ($M = 3.81$, $SD = .57$) and male preservice mathematics teachers, $M = 3.82$, $SD = .61$; $t(726) = -.23$, $p \leq .82$. The mean difference between female preservice mathematics teachers

and male preservice mathematics teachers was found as -.01 indicating a very small mean difference.

4.3.4. Research Question 4

Is there a significant difference in the mean readiness scores for preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types?

An independent-samples t-test was conducted to compare the readiness scores for preservice mathematics teachers graduated from teacher education high schools and preservice mathematics teachers graduated from other high school types. As stated earlier, the distributions of readiness scores of both preservice teachers were normal. Table 4.5. illustrates the results of the independent-samples t-test for high school type difference in the mean readiness scores.

Table 4.5 Independent-Samples t-test Results for Readiness Scores with respect to High School Type

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	f	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	1.17	.28	-1.10	726	.27
Equal variances not assumed			-1.12	686.95	.26

The outcomes demonstrated that the homogeneity of variance assumption was met at the .01 alpha level. According to results of this test, there was no significant difference in readiness scores for preservice mathematics teachers graduated from teacher education high schools ($M = 3.79, SD = .60$) and preservice mathematics teachers graduated from other high school types, $M = 3.84, SD = .55$; $t(726) = -1.10, p \leq .27$. The mean difference between preservice mathematics teachers graduated from teacher education high schools and preservice mathematics teachers graduated from other high school types was found as $-.05$ indicating a very small mean difference.

4.3.5. Research Question 5

Is there a significant difference in the mean readiness scores for existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers?

An independent-samples t-test was conducted to compare the readiness scores for existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers. As stated previously, the distributions of readiness scores of both preservice teachers were normal. Table 4.6 illustrates the results of the independent-samples t-test for difference in mean scores based on existence or non-existence of a teacher in the family.

Table 4.6. Independent-Samples t-test Results for Readiness Scores with respect to Family

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	f	Sig.	t	df	Sig. (2-tailed)
Equal variances assumed	.01	.75	2.35	726	.02
Equal variances not assumed			2.33	512.09	.02

The outcomes demonstrated that the homogeneity of variance assumption was met at the .01 alpha level. According to results of this test, there was no significant difference in readiness scores for existence of a teacher in the immediate family of preservice mathematics teachers ($M = 3.88$, $SD = .59$) and nonexistence of a teacher in the immediate family of preservice mathematics teachers, $M = 3.78$, $SD = .57$; $t(726) = 2.35$, $p \leq .02$. The mean difference between existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers was found as .11.

4.3.6. Summary

Independent-samples t-test analysis showed that the year in the teacher education program had a significant effect on readiness scores, while gender, high school type, and family did not. It was found that the readiness of 4th year preservice mathematics teachers were significantly higher than the readiness of 3rd year preservice mathematics teachers. On the other hand, no significant difference was found between female and male preservice mathematics teachers on readiness score.

Similarly, there was no obvious difference between readiness of preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types. With respect to family, readiness scores of preservice mathematics teachers who had teacher in the immediate family were not significantly different from readiness scores of preservice mathematics teachers who did not have any teacher in the immediate family.

CHAPTER V

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

5.1. Discussion

The main purpose of this study is to investigate the to what extent the preservice teachers perceive that they are ready for the teaching profession and the differences in preservice teachers' readiness based on the year in the teacher education program, gender, high school type (teacher education high school or other), and existence of a teacher in the immediate family. Firstly, findings for each research question will be discussed, and then the implications and recommendations for future research will be presented. However, very few studies have focused on the readiness of preservice teachers. Therefore, the findings of this study will be discussed through the studies related to self-efficacy and attitudes towards teaching profession and mathematics.

5.1.1. Discussion based on the descriptive results

The findings of this study displayed that preservice teachers did not consider their readiness at a high level but their perceived readiness was not also low. This finding suggested that the teacher education programs might have create a positive change on the preservice elementary mathematics teachers' feelings of readiness for the teaching profession. The findings of the very few studies (Belcheir, 1998; Zientek & Thompson, 2008) about beginning teacher readiness also pointed similar issues about teacher readiness. Those studies were conducted when the graduates of

teacher education programs started to teach in schools and found that they felt well-prepared most of the time. The present study was conducted before the preservice teachers graduate from the teacher education programs, therefore, how well they might feel prepared for the teaching profession when they would start teaching remains uninvestigated. This might also suggest that their feelings would likely to change once they start teaching.

5.1.2. Teachers' readiness based on the grade level

According to results, there was a significant difference in the readiness scores for 3rd year preservice mathematics teachers and 4th year preservice mathematics teachers. It was found that 4th year preservice mathematics teachers had significantly greater mean scores than 3rd year preservice mathematics teachers. Since maturity is likely to result in feelings of competency in the profession (Black, 2003), 4th year preservice teachers might consider their preparedness at a high level due to their experiences in the EME program. Knowledge and skills of teaching are generally gained during the practice (Arnett & Freeburg, 2008). Field practice might make senior preservice teachers feel more ready for the actual teaching at schools and more aware of the possible problems they might face while teaching. The increased number and density of the pedagogical content knowledge courses might also have helped 4th year preservice teachers in feeling ready for the teaching profession. In Çiçek-Sağlam's study (2008), it was found that positive feelings of preservice teachers towards teaching profession increased as the year level increased. Likewise, Çapa and Çil (2000) stated that 3rd year preservice teachers had more positive feelings than 2nd year preservice teachers towards teaching profession, which would

address that 4th year preservice teachers might have more positive feelings compared to 3rd year preservice teachers. It has also been found that grade level had a significant effect on the self-efficacy beliefs of preservice teachers towards teaching mathematics (Işıksal and Çakıroğlu, 2006, Umay, 2001). On the contrary, Erdem and Anılan (2000) found that grade levels did not have a significant effect on preservice primary teachers' attitude towards teaching profession. Having more personal motivation for the teaching profession towards the end of the teacher education program might also have resulted in higher readiness scores for the 4th year students. However, since this issue is beyond the scope of this study, further research should examine possible effects of personal motivation on the readiness of preservice mathematics teacher towards teaching profession.

5.1.3. Teachers' readiness based on gender

The results showed that there was no significant difference in readiness scores for female and male preservice mathematics teachers. This might address that the female and male preservice teachers have perceived the training they received in the teacher education programs and their readiness level for the teaching profession in similar ways. Semerci and Semerci (2004), Erdem and Anılan (2000), as well as Kaplan and İpek (2002) found no significant effect of gender on preservice teachers' attitudes towards teaching profession. In terms of mathematics self-efficacy, Cooper and Robinson (1991) found no gender difference on mathematics self-efficacy and mathematics performance among mathematics undergraduate students selected mathematics oriented college majors. Similarly, in Schunk and Lilly's study (1984) male and female students whose grades were 6 to 8 asked to judge their self efficacy

for learning a novel mathematical task and at the end of the study no gender difference was found. The study conducted in Turkey by Işıksal and Aşkar (2003) showed that gender did not have a significant effect on preservice teachers' mathematics self-efficacy. These studies might suggest that just as gender did not make any significant difference in mathematics self-efficacy, preservice elementary mathematics teachers' readiness scores for teaching might not also differ in terms of gender, especially in the content knowledge domain. However, this issue needs to be investigated in more detail. The findings of this study and the previous studies (Alkhateeb, 2001; Ercikan, McCreith, & Lapointe, 2005) have shown that gender has been a controversial issue in the field of mathematics education and education in general. The high number of participants in this study might help in speculating for the similar impact of teacher education programs on female and male preservice teachers.

5.1.4. Teachers' readiness based on high school type

According to results of the study, there was no significant difference in the readiness scores for preservice mathematics teachers graduated from teacher education high school and preservice mathematics teachers graduated from other high school types. In other words, it can be argued that the type of the high school preservice teachers graduated did not have a significant effect on readiness scores towards teaching profession. Çetinkaya (2009) expected that the preservice teachers graduated from teacher education high school would show more positive attitudes towards the teaching profession, however, no significant difference was found among the preservice teachers graduated from different types of high schools. The

results of the present study and the study conducted by Çetinkaya (2009) address that the pedagogical courses offered in the teacher education high schools might have no or inadequate contribution to the preservice teachers' feelings of readiness for the teaching profession. Therefore, policy makers should consider that teacher education high schools might not contribute to the preservice teachers' feelings of preparedness as expected and might use the findings of this study for further studies investigating the readiness of the graduates of these high schools after the recent changes (MNE, 2009) in their programs.

5.1.5. Teachers' readiness based on family

Results of the study displayed that there was no significant difference in the readiness scores for the existence of a teacher in the immediate family of preservice mathematics teachers and nonexistence of a teacher in the immediate family of preservice mathematics teachers. Likewise, Çetinkaya (2009) found that existence of a teacher in the immediate family did not have significant difference on attitudes towards teaching profession. That is, existence of a teacher in the immediate family would have no contribution on the readiness of preservice teachers towards teaching profession. On the other hand, Akpınar, Yıldız, and Ergin (2006) indicated that preservice teachers having a teacher in the immediate family had more positive attitudes than preservice teachers with no teacher in the immediate family. While the limited number of studies in this issue present contradictory findings, the present study adds to the literature that gender cause any significant difference in readiness for the teaching profession. However, results might differ with larger sample size of

participants. Moreover, feelings of readiness might differ in terms of gender for beginning teachers, an issue which should be addressed in further studies.

5.2. Implications and Recommendations

This study is focused on the readiness of preservice mathematics teachers toward teaching profession. It offers new guidelines to teacher educators, program developers, and policy makers. Based on the study, some implications and recommendations could be proposed.

Teacher education programs at several universities in Turkey seem to help preservice teachers feel somewhat ready for the teaching profession. The significant difference in the mean scores for year levels also seems to support this claim that field practice courses and pedagogical content knowledge courses seem to help preservice teachers in feeling ready for the profession. However, how ready the beginning teachers in Turkey feel for the teaching profession remains uninvestigated. A longitudinal study tracking the 2010 graduates of elementary mathematics education programs in Turkey when they become a formal teacher would help teacher educators in understanding the actual impact of teacher education programs on teachers' feelings of readiness. This would also likely to provide the teacher education institutions with courses addressing the areas that beginning teachers feel unprepared or not ready enough.

The findings of the study address the possible influence of practice courses on the feelings of readiness of preservice teachers. The significant mean difference between the readiness scores of the 3rd year and 4th year preservice teachers might be traced to the field practice courses. The influence might be greater if the field

practice would provide more practice hours for the preservice teachers. Field practice gives preservice teachers the opportunity to recognize their profession and its difficulties as well as satisfaction. Therefore, practice courses should be seriously planned and conducted and should allocate a more effective collaboration of the Ministry of National Education. Investigating preservice teachers' readiness before and after the field practice courses and the influence of the nature of the mentoring they receive during the field practice should be investigated in order to provide preservice teachers with better field practice courses and to prepare them better for the teaching profession.

For further research, it can be suggested that the reasons of significant or insignificant difference in readiness between 3rd grade and 4th grade, females and males, those who have teachers in the immediate family and those who do not, and those who attend to teacher education high school and those who do not should be investigated deeply. Another recommendation might be that preservice teachers' readiness should be supported and investigated by qualitative studies.

Lastly, in order to enhance the effectiveness of teacher education programs on preparing teachers for the teaching profession, a further investigation of the relationship between teachers' self-efficacy and readiness towards teaching profession or attitudes could be helpful. Special focus on the self-efficacy and readiness towards teaching in terms of content knowledge, classroom management, and general teaching skills would provide the teacher education programs with more solid information on the effectiveness of the programs.

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APPENDICES

APPENDIX A

ITEMS and FACTOR MATRIX OF THE PILOT STUDY

Items	Item Number	Factor
		Loading
Öğrencilerin öğrendiklerini değerlendirmelerine yardımcı olmaya	I34	.72
Öğrencilerin gelişmelerindeki farklılıklarını etkili bir şekilde desteklemeye	I38	.71
Öğrencilerin kendilerini yönlendirme ve motive etme becerilerine sahip olmalarına yardımcı olmaya	I32	.70
Alanımın kavramlarını etkili bir şekilde öğretmeye	I36	.69
Zamanı etkili şekilde kullanmaya	I30	.69
Öğrencilerin seviyelerine uygun sorular sormaya	I29	.68
Öğrencileri öğrenmeleri için cesaretlendirmeye	I45	.67
Öğrencileri öğrenmeleri için motive etmeye	I41	.67
Farklı öğrenme stillerine sahip öğrenciler için dersi planlamaya	I17	.66
Öğrencilerin kavram yanlışlarını belirlemeye	I24	.66
Öğrencilerin kavramları doğru bir şekilde oluşturmalarına yardımcı olmaya	I18	.66
Etkili sınıf yönetimi yöntemleri kullanmaya	I37	.64
Konuya uygun örneklerle dersi pekiştirmeye	I23	.64
Kendi mesleki gelişimim için sorumluluk almaya	I16	.64
Etkili grup çalışması yöntemlerini kullanmaya	I27	.63
Öğretmenliğim hakkında öz değerlendirme yapmaya	I28	.63
Öğrencilerin soru sorma ve tartışma becerilerini geliştirmeye	I9	.63
Anlaşılır ve uygun kazanımlar belirlemeye	I39	.63
Öğretim materyallerini öğrencilere uygunluk bakımından değerlendirmeye	I14	.62
Öğrencilere öğrenmeleri hakkında geribildirim vermeye	I19	.62
Kendi alan konularım ile günlük hayat arasında ilişki kurmaya	I40	.62
Konular arasındaki bağlantıları kurmaya	I20	.60
Herkesin birbirine saygı duyduğu bir sınıf ortamı oluşturmaya	I22	.59
Alan konularımı yeterli derecede öğretmeye	I15	.58
Öğrencilerin kendilerini yönlendirme ve motive etme becerilerine sahip olmalarına yardımcı olmaya	I32	.57
Mesleğimle ilgili yeniliklere açık olmaya	I6	.57
Uzun vadeli öğretim planlaması yapmaya	I42	.57
Disiplinli, düzenli ve amacına uygun bir öğrenme ortamı sağlamaya	I11	.57

Ünite bazında öğretim planlaması yapmaya	I44	.57
Öğrencilerin öğrenme ihtiyaçlarını etkili bir şekilde tespit etmeye	I4	.56
Günlük ders ve etkinlikleri planlamaya	I35	.54
Beden dilini etkili kullanmaya	I25	.54
Grup çalışmalarına öğrencileri dahil etmeye	I26	.54
Portfolyo, performans ödevi gibi çeşitli değerlendirme tekniklerini etkili bir şekilde uygulamaya	I13	.53
Öğrencileri farklı bakış açılarından gelen fikirlere karşı yorum yapmaları için cesaretlendirme	I5	.52
Ailelerle iletişim kurmaya	I33	.52
Kendi alan konularım ile diğer alanlar arasında ilişki kurmaya	I8	.52
İş arkadaşlarıyla çıkması muhtemel problemleri çözmeye	I43	.49
İdari görevleri zamanında tamamlamaya	I21	.49
Kültürel farklılıklara uygun davranmaya	I10	.48
Çeşitli öğretim yöntemlerini bir araya getirmeye	I2	.46
Bilgisayar, öğretim yazılımları gibi öğretim teknolojilerini uygun bir şekilde kullanmaya	I31	.46
Hafta bazında öğretim planlaması yapmaya	I3	.40
Okul idaresi ile okul-öğrenci çıkarları için işbirliği yapmaya	I1	.33
Eigenvalues		16.10
% of Variance		36.59

APPENDIX B
READINESS SCALE

Değerli Matematik Öğretmen Adayı,

Bu anket sizin öğretmenlik mesleğine yönelik görüşlerinizi öğrenmek amacıyla hazırlanmıştır. Sorulara vereceğiniz yanıtlar, araştırma amacıyla kullanılacak ve gizli tutulacaktır. Adınızı belirtmenize gerek yoktur. Ankete vereceğiniz samimi ve doğru yanıtlar, araştırma bulgularının gerçeğe uygunluk derecesini yükseltecektir. Yardımlarınız için teşekkür ederim.

Deniz MEHMETLİOĞLU
Araştırma Görevlisi

BÖLÜM 1: KİŞİSEL BİLGİLER

1. Sınıfınız:

3. Sınıf 4. Sınıf

2. Cinsiyetiniz:

- Kadın Erkek

3. Mezun olduğunuz lise türü:

- Öğretmen lisesi
 Diğer (Anadolu lisesi, Fen lisesi, Genel lise, Meslek lisesi, Özel lise, vb.)

4. Çekirdek ailenizde öğretmen var mı?

- Evet Hayır

BÖLÜM 2: NE KADAR HAZIRSINIZ?

	hiç hazır değilim	biraz hazırım	orta derecede hazırım	hazırım	çok hazırım
1) Okul idaresi ile okul ve öğrenci yararına işbirliği yapmaya	1	2	3	4	5
2) Farklı öğretim yöntemlerini bir araya getirmeye	1	2	3	4	5
3) Hafta bazında öğretim planlaması yapmaya	1	2	3	4	5
4) Öğrencilerin öğrenme ihtiyaçlarını etkili bir şekilde tespit etmeye	1	2	3	4	5
5) Öğrencileri farklı bakış açılarından gelen fikirlere karşı yorum yapmaları için cesaretlendirmeye	1	2	3	4	5
6) Mesleğimle ilgili yeniliklere açık olmaya	1	2	3	4	5
7) Matematik konuları ile diğer alanlar arasında ilişki kurmaya	1	2	3	4	5
8) Öğrencilerin soru sorma ve tartışma becerilerini geliştirmeye	1	2	3	4	5
9) Kültürel farklılıklara uygun davranmaya	1	2	3	4	5
10) Disiplinli, düzenli ve amacına uygun bir öğrenme ortamı sağlamaya	1	2	3	4	5
11) Öğrencilerle saygı ve sevgiye dayalı bir ilişki geliştirmeye	1	2	3	4	5
12) Portfolyo, performans ödevi gibi çeşitli değerlendirme tekniklerini etkili bir şekilde kullanmaya	1	2	3	4	5
13) Öğretim materyallerini öğrencilerin seviyelerine uygunluk bakımından değerlendirmeye	1	2	3	4	5
14) Matematik konularını etkili bir şekilde öğretmeye	1	2	3	4	5
15) Kendi mesleki gelişimim için sorumluluk almaya	1	2	3	4	5
16) Farklı öğrenme stillerine sahip öğrenciler için dersi planlamaya	1	2	3	4	5
17) Öğrencilerin matematiksel kavramları doğru bir şekilde oluşturmalarına yardımcı olmaya	1	2	3	4	5
18) Öğrencilere öğrenmeleri hakkında geribildirim vermeye	1	2	3	4	5
19) Matematik konuları arasındaki bağlantıları kurmaya	1	2	3	4	5
20) İdari görevleri zamanında tamamlamaya	1	2	3	4	5
21) Herkesin birbirine saygı duyduğu bir sınıf ortamı oluşturmaya	1	2	3	4	5
22) Konuya uygun örneklerle dersi pekiştirmeye	1	2	3	4	5
23) Öğrencilerin kavram yanlışlarını belirlemeye	1	2	3	4	5
24) Beden dilini etkili kullanmaya	1	2	3	4	5
25) Grup çalışmalarına öğrencileri dahil etmeye	1	2	3	4	5
26) Etkili grup çalışması yöntemlerini kullanmaya	1	2	3	4	5

BÖLÜM 2: NE KADAR HAZIRSINIZ? (CONT)

	hiç hazır değilim	biraz hazırım	orta derecede hazırım	hazırım	çok hazırım
27) Öğretmenliğim hakkında öz değerlendirme yapmaya	1	2	3	4	5
28) Öğrencilerin seviyelerine uygun sorular sormaya	1	2	3	4	5
29) Zamanı etkili şekilde kullanmaya	1	2	3	4	5
30) Bilgisayar, öğretim yazılımları gibi öğretim teknolojilerini uygun bir şekilde kullanmaya	1	2	3	4	5
31) Öğrencilerin kendilerini yönlendirme ve motive etme becerilerine sahip olmalarına yardımcı olmaya	1	2	3	4	5
32) Ailelerle iletişim kurmaya	1	2	3	4	5
33) Öğrencilerin kendi öğrendiklerini değerlendirmelerine yardımcı olmaya	1	2	3	4	5
34) Günlük ders ve etkinlikleri planlamaya	1	2	3	4	5
35) Matematik kavramlarını etkili bir şekilde öğretmeye	1	2	3	4	5
36) Etkili sınıf yönetimi yöntemleri kullanmaya	1	2	3	4	5
37) Öğrencilerin gelişim seviyelerindeki farklılıkları dikkate almaya	1	2	3	4	5
38) Anlaşılır ve sınıf seviyelerine uygun kazanımlar belirlemeye	1	2	3	4	5
39) Matematik konuları ile günlük hayat arasında ilişki kurmaya	1	2	3	4	5
40) Öğrencileri öğrenmeleri için motive etmeye	1	2	3	4	5
41) Uzun vadeli öğretim planlaması yapmaya	1	2	3	4	5
42) İş arkadaşlarıyla çıkması muhtemel problemleri çözmeye	1	2	3	4	5
43) Ünite bazında öğretim planlaması yapmaya	1	2	3	4	5
44) Öğrencileri öğrenmeleri için cesaretlendirmeye	1	2	3	4	5