PRESERVICE SCIENCE TEACHERS PERCEPTION OF PROFESSION WITH METAPHORICAL IMAGES AND REASONS OF CHOOSING TEACHING AS A PROFESSION.

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

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ABSTRACT

PRESERVICE SCIENCE TEACHERS PERCEPTION OF PROFESSION WITH METAPHORICAL IMAGES AND REASONS OF CHOOSING TEACHING AS A PROFESSION.

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This study indented to explore preservice elementary and secondary science teacher's perception of their professional roles and investigate their reasons of choosing teaching as a profession. To explore the perception of professional roles, metaphorical images were also used as a tool.

The present study was conducted during the spring semester of 2004-2005 academic year with a total number of 441 (n=287 females; n=153 males and n=1 gender not provided) senior preservice elementary and secondary science teachers who enrolled in the elementary science and secondary science (biology, physics and chemistry)

teacher education programs of three different universities in Ankara. Data were collected utilizing a questionnaire developed by Saban (2003) composed of five basic sections which investigates the participant's perception of teaching as a profession and their roles in instruction process and reasons of choosing teaching as a profession.

Data of the present study were analyzed utilizing descriptive and inferential statistics. Analysis of the data showed that preservice teachers perceive their roles mostly with student-centered metaphors and define their selves as pedagogical expert who fosters student's social, emotional, and moral growth. Besides, most of the preservice teachers have altruistic reasons to choose teaching as a profession.

Key Words: Preservice science teachers, Perception of profession, Metaphors, Science Education.

ÖZ

FEN ALANI ÖĞRETMEN ADAYLARININ MESLEKLERİNE YÖNELİK ALGILARI VE ÖĞRETMENLİĞİ MESLEK OLARAK SEÇME NEDENLERİ.

GÜZEL STICHERT, Elif

Yüksek Lisans, Orta Öğretim Fen ve Matematik Alanları Eğitimi Bölümü

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Bu araştırma, ilköğretim fen bilgisi ve orta öğretim fen alanları eğitimi öğretmen adaylarının mesleklerini nasıl algıladıklarını ve öğretmenliği neden meslek olarak seçtiklerini belirlemek amacı ile yapılmıştır. Mesleki algıyı ölçmek içim metaforlar da araç olarak kullanılmıştır.

Bu çalışma, 2004-2005 akademik yılının bahar döneminde Ankara ilindeki üç farklı üniversitede ilköğretim fenbilgisi öğretmenliği ve ortaöğretim fen alanları (biyoloji, fizik ve kimya) öğretmenliği bölümlerinin son sınıflarında eğitim gören 441 (287 kız, 153 erkek ve 1 cinsiyeti belirtilmemiş) öğretmen adayı ile yürütülmüştür.

Veriler Saban (2003) tarafından geliştirilen, meslek algısını ve öğretmenliği meslek olarak seçme nedenlerini ölçen bir anket ile toplanmıştır.

Araştırma sonuçları, ilköğretim fen bilgisi ve orta öğretim fen alanları eğitimi öğretmen adaylarının mesleklerini öğrenci merkezli metaforlarla algıladıklarını, kendilerini öğrencilerinin sosyal, duygusal ve ahlaki gelişimini teşfik eden pedegoji uzmanları olarak gördüklerini, ayrıca öğretmenliği çoğunlukla toplumun ve bireylerin gelişimini iyi yönde etkileme gibi özveriye dayanan sebeplerden dolayı meslek olarak seçtiklerini ortaya koymuştur.

Anahtar Kelimeler: Öğretmen adayları, Mesleki Algı, Metafor, Fen Öğretimi

To My Parents and My Husband

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

Beliefs and ideas that preservice teachers carry when they start to their study is an important concern for teacher education programs. As Clark (1988) states in his study:

> Students begin teacher education programs with their own ideas and beliefs about what it takes to be a successful teacher. These preconceptions are formed from thousands of hours of observation of teachers, good and bad, over the previous fifteen or do years. Undoubtedly, student's conceptions of teaching are incomplete, for they typically see and hear only the performance side of classroom teaching. With this in mind, a thoughtful teacher educator might ask: What are the preconceptions about teaching and learning held by our students? (p.7)

This argument of Clark awaken teacher educators about the personal history-based beliefs of preservice teachers which are very difficult to change during teacher training (Joram & Gabrielle, 1998). Studies carried on this subject revealed that pre-service teachers' thinking is strongly influenced by their past educational histories as

students (e.g.,Bramald et al.,1995) and that their beliefs tend to represent traditional conceptions of teaching and learning, such as the behavioral theories of instruction (Salisbury-Glennon & Stevens,1999). According to Calderhead and Robson (1991), for instance, preservice teachers often think of teaching as telling and of learning as memorization. The notion of self and the development of teacher identity has been noted as important in teacher thinking and classroom actions (Akyeampong & Stephens, 2002).

However, for the success of teacher training programs, these conceptions has to be minimized and changed. The first steps of changing preconceptions of teaching and learning carried by preservice teachers is to discover and investigate them. In some of recent studies (Saban, 2003, 2004; Mahlios & Maxson, 1998; Inbar, 1996; Martinez, Sauleda, & Huber, 2001) metaphors used as cognitive devices to effectively investigate the preservice teacher's preconceptions of teaching. In this regard, metaphors play a crucial role in gaining insights into more complex concepts such as teaching, learning, or schooling and provide important ways of comprehending people's personal experiences; that is, they act as ‘‘translators ’’ (Miller,1987) of experience.

Researches showed that preservice teachers' conception of themselves are strongly related with their classroom activities. Martinez, Sauleda and Huber (2000) stated that influence of metaphors on education are immense and that atmosphere in the classroom is related to the teacher's favored education metaphor. Tobin and Tipins (1996) conclude that when a teacher prefers the captain metaphor, he or she tended to practice strict control over the students and when a teacher preferred the entertainer

metaphor he was first of all friendly and humorous in the classroom.

Many researches were done to figure out most preferred educational metaphorical images of preservice teachers to make a conclusion about what may be their classroom activities as future teachers. Study of Inbar (1996) which intented to define the metaphorical images of student and teacher about each other, showed that while educators have a tendency to perceive their roles as caring the students, students mostly perceive the evaluative and controlling aspects of teaching. Mahlios and Maxon (1998) also indented to figure out most remembered and most preferred metaphors of preservice teacher and they revealed that while preservice teachers remember their past education life with a diverse manner like being in a family, team, crowd or prison, they preferred more focused and centered metaphors like being in a family and team. In the studies of Saban (2003, 2004) analysis of results revealed that although participants selected both student- and teacher-centered metaphors as their most representative past schooling images, they chose only the student-centered metaphors as the most preferred ones. Many other studies in literature has similar results of Saban's studies. Although preservice teachers remember their past education life with both teacher- and student-centered metaphors, they mostly prefer student-centered metaphors.

The preservice teachers' reasons of choosing teaching as a profession is another concern of educational studies. Some researchers (King, 1993; John 1995; Tony, 2000; Saban 2003) conducted studies on the subject to capture the orientations of preservice teachers to teaching profession. Results of these studies revealed three main categories of reasons to choose teaching as a profession (Saban, 2003). These reasons were

altruistic (e.g., desire to contribute the society), intrinsic (e.g., sense of calling for teaching) and extrinsic (e.g., long holidays/summer vacations) reasons. It is observed that these reasons are changing over time and from country to country. The result of such studies have received particular attention because of the recruitment crisis facing many countries in attracting people of sufficient quality into teaching profession (Kyriacou & Coulthard, 2000).

1.2 Purpose of the Study

The purpose of this study is to investigate preservice elementary and secondary science teacher's perception of their professions and reasons of choosing teaching as a profession. More specifically, the specific research questions are as follows:

1. Which metaphors represents most preservice elementary and science teacher's images of teachers in their past educational life?
2. Which metaphors preferred most preservice elementary and science teacher's images of ideal teacher?
3. What are preservice teacher' perceptions of teaching as a profession?
4. What are preservice teacher' reasons of choosing teaching as a profession? (What are the reasons for teacher candidates to choose teaching as a profession?)

Further, this study examines the relationship, if any, between preservice elementary and secondary science teacher's perception of their professions and reasons

of choosing teaching as a profession and their gender, and their area of teaching.

1.3 Educational Significance

First of all, present study will provide an important data about metaphors that senior preservice teacher have of themselves and their teachers in previous education life. These metaphors will provide teacher educators with the insights into preservice teachers' perception of their professional roles which is strongly related with their classroom activities and the quality of education. Although there is a significant amount of research dealing with preservice teachers' beliefs about teaching and learning, conceptions of their roles, reasons for teaching, and attitudes to the teaching professions from all over world (e.g., . Martinez, Sauleda &Huber, 2000; Mahlios & Maxon, 1998; Akyeampong & Stephens, 2002; Coultas & Lewin 2002; BouJaoude, 2000), there have been a limited number of studies in Turkey. Furthermore, this study is the first one which investigates preservice science teacher's perception of their profession by using the metaphors as a research tool.

The investigation of preservice teachers' perception of their own profession is an important key to understand their instructional approach and potential classroom performance. Future teacher can develop a greater awareness of the factors influencing their experiences in the classroom when they identify and reflect on the metaphors and images they use in their conservations and written reflections about teaching and learning (Dooley, 1998)

Changing teacher' classroom behaviors and practice requires changing their

conceptions of their roles in the classroom (Tobin & Tippins, 1996). Pajares (1992) emphasizes the role of teacher's beliefs in education because they behave what they believe. For the improvement of teacher education programs, it is important to examine preservice teachers' perception of their professional roles and reasons of choosing teaching as a profession.

One of the main goals of a teacher education program should be to help prospective teachers develop a good understanding of the relationship between teaching and learning (Saban, 2004). By using the metaphorical images, this study is trying to figure out the preservice teachers understanding of teaching and learning. The results of the present study will provide feedbacks to the teacher education program about preservice teachers' perception of teaching and learning. This investigation will also enable teacher educators in understanding of their students' images of teacher, student and instruction after all the courses taken during their training program.

The findings that emerge from this study, therefore, have important implications for educational researchers and teacher educators. Given the data of this study may prove useful understanding the preservice science teachers' perception of teaching profession and reasons of choosing teaching as a profession. Teacher educators can use these results to examine their preservice education programs as well as their teacher education practicum experiences for preparation and continuing of teachers.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter covers the conceptual definition and development of preservice science teacher's perception of their profession and reasons of choosing teaching as a profession. This chapter also gives detailed information about metaphors and their educational use.

2.1 What is Metaphor?

Basically, metaphor is a concept which is used by arts and humanities. However, in recent years, especially after the famous book of George Lakoff and Mark Johnson (1980) which is entitled "Metaphors We Live By", the general interest to use the metaphors in different types of studies has been increased. Lakoff and Johnson (1980) emphasizes how metaphors are part of our everyday speech, how they pervade not only language but also thought and action, and how essential they are to human understanding. Indeed, metaphor is a process by which we view the world and the heart of what we think and learn.

Metaphors have been described in many different ways in many different studies. Webster's New International Dictionary's (1993) definition of metaphors is "a figurative of speech in which a word or phrase denoting one kind of object or action is used in

place or another to suggest a likeliness or analogy between them". "The essence of metaphors is understanding and experiencing one kind of thing in terms of another" says Lakoff and Johnson (1980, p. 5) The value of a metaphorical conceptualization is that it transfers characteristics of what is known to what is less known in a way that promotes understanding (Ortony,1990). Similarly, Oxford and his colleagues (1998) state that metaphorical thinking involves employing a familiar object or an event as a conceptual tool to elucidate features of a more complex subject or situation. Metaphors are an integral component of our thoughts and our actions because our conceptual frameworks are characterized by metaphors (Lakoff & Johnson 1980; Taylor, 1984),

A metaphor consists of two parts called "the metaphor topic" and "the metaphor vehicle" (Chiappe et al., 2003). The metaphor topic refers to the subject which will be stated (see the example below). The metaphor vehicle is the term or terms used metaphorically (Balcı, 1999) and used to say something about the metaphor topic (Saban, 2004).

Example:

School is a prison.

Topic Vehicle

It is also stated by Forceville (2002), for anything to deserve the label ''metaphor'' at least the following three questions need to be answered: (1) Which of the two terms is metaphor? (2) Which is the target domain (i.e., the metaphor topic) and

which is the source domain (i.e., the metaphor vehicle)? (3) Which characteristics can/should be mapped from the source domain to the target domain? In other words, in a metaphorical expression metaphor topic and metaphor vehicle has to be clear and the interaction or comparison between them has to be meaningful.

Existing theories about metaphors are divided in two groups by Searle (1978): comparison theories and interaction theories. Comparison theories claim that metaphors involve comparison or similarity between two or more objects, while interaction theories claim that metaphors involve a verbal opposition or interaction between two semantic contents. On the comparative view of metaphor, what a metaphor does is to say implicitly that two apparent dissimilar things have a similarity in common after all (Petrie, 1979). Researcher gives the example in speaking of the "flow" of electricity. Despite the obvious dissimilarities between electricity and the liquids, it is held that there is a fundamental similarity – they both move in a fluid kind of way. Thus in the context of a particular metaphorical statement, the two subjects "interact" in the following ways: (a) the presence of the primary subject incites the hearer to select some of the secondary subjects' properties; and (b) invites him to construct a parallel implication-complex that can fit the primary subject; and (c) reciprocally includes parallel changes in the secondary subject (Black, 1977).

To address the question "How metaphors work?" Yob (2003) states that when a metaphor is employed, the schema is "transported" from its customary realm to a new realm. Here the elements and structures of the schema organize the "alien realm" in a way that "is guided by their habitual use in the home realm" (p.127). A metaphor acts as

a lens, a screen, or a filter, through which the new realm (metaphor topic) is viewed. It is also stated that metaphor is like pouring new content into old bottles, thereby suggesting that the new realm simply submits to the organization of the old realm. Metaphor is employed when one wants to explore and understand something esoteric, abstract, novel, or highly speculative. As a general rule, the more abstract or speculative it is, the greater the variety of metaphors needed to grapple with it. Hence there are numerous metaphors or accessing the concept of God, for instance: King, Shepherd, Lord, Judge, Mother, Lion and each one providing different information and calling for different responses. Again, in making it possible to talk about something new, metaphor is a useful tool. This was particularly evident in the recent eruption of personal computers. We speak of them having "languages," passing "viruses," storing information in "folders" and "files," having "memory" (Yob, 2003).

In order to explore the new metaphors, comparisons has to be done to find the relations between two different concepts to be used instead of each other. It is stated by Lakoff and Johnson (1980) that human live by metaphors. They also point out that grounded in subjective experience, emotion and imagination, metaphors "provide ways of comprehending experience; they give order to our lives… (and) are necessary for making sense of what goes on around us" (pp.185-186). Metaphors are fundamental vesicles that human beings have evolved to understand, express, construct, and organize their world (Lakoff & Johnson, 1980). Much of what we say and how we form our thoughts about concepts is often dependent on the use of metaphors. Metaphors help to structure of our thinking and our understanding of events (Perry & Cooper, 2001). As it

is stated in the study of Collins and Green (1990), a word is a box (container) for a set of meanings; that is, words are symbols that represent ideas and permit people to talk about the world.

2.2 Metaphors as Research Tools in Education

How teachers perceive and conceptualize their work is a subject of interest for researchers over a decade. There have been many of studies carried out to analyze what teachers and prospective teachers think about teaching, learning process and how do they define their own role and their students' role in this process. It is clear that prospective teachers are coming to teacher education programs with their ideas and beliefs about teaching which is formed with their own education experiences (Bramald et al., 1995). Literature on teacher thinking shows that preservice teachers have their well defined ideas about students and classroom and how their images of themselves as teachers relate to children, curriculum and teaching (Mahlios & Maxon, 1998). Some researchers (Bullough et al., 1992; Mahlios & Maxon, 1998) argued that these beliefs influence not only how these candidates think and act during teaching, but also how they interpret the experience of teaching. As BouJaoude (2000) reports in his study, to understand teacher's actions, perception of their actions, or conception of their roles, it is not enough to understand their behaviors, it is also necessary to discern the context in which the behavior take place and the beliefs associated with the behaviors because beliefs have been found to be linked to classroom practices. Here the metaphor acts its role. Heidegger (1971) states that thinking can only be described clearly through the use

of imagery and rich language of metaphor (p. 20-21). Metaphors are one of the most potent devices to reflect people's beliefs which are formed by their own reality (Inbar, 1996). Ortony (1993) explains that metaphor operates simultaneously at the surface level of awareness and at the deeper level of intuition to provide new insights attributable almost wholly to the metaphor itself (p.5). Pavio and Walsh (1993) propose three hypotheses to account the power of metaphor: (1) that metaphor provides a compact way of representing chunks of information; (2) that metaphor enables us to talk about experiences which cannot be literally explained effectively; and (3) that imagery, metaphor provides a vivid and memorable account that satisfies both reason and the emotions (p.309). Studies on the use of personal images and metaphors points out the benefits of using images for helping both the teacher and the researcher learn more about the connection between personal theories and teaching practices. Metaphors can be the linguistic structure that helps people to generate ideas, concepts and theories for describing, examining, and understanding phenomena in education (Bredeson, 1985, cited in Balci 1999). Similarly, metaphors are the powerful tools to analyze preservice teachers' ideas and beliefs about their profession (Mahlios & Maxon, 1998; Inbar, 1996; Saban, 2003, 2004) state that. Studies of Bullough (1991) and Marshall (1990) point out that metaphor construction can be a useful way of gathering people's understanding about teaching, teacher's conceptions of themselves, and roles of school. As Oxford et al. (1998) states, metaphors have the power to enhance the subject's understanding of educational problems and thus increase perspective-consciousness. Some researchers suggest that the use of metaphor as a reflective tool can enable teachers (and preservice

teachers) to unlock, evaluate and modify their personal theories they have about their teaching practices (Marshall, 1990; Tobin, 1990; Griffits & Tann, 1992). Similarly, Griffits and Tann (1992) add that there is a strong link between the metaphors that teacher use and their personal theories about teaching and learning.

2.3 Preservice Teachers' Perception of Profession by Metaphors

Metaphors play a crucial role in gaining insights into more complex concepts such as teaching, learning or schooling and provide important ways of comprehending people's personal experiences; that is they act as "translator" of experience (Miller, 1987; cited in Saban, 2004). As a result of its potent of discovering ideas and beliefs, teacher's perception of their professional identity have been studied by many researchers with the help of methods based on metaphors (Beijard, Verloop & Vermunt, 2000; Martinez, Sauleda & Huber, 2000; Mahlios & Maxon, 1998; Ben-Peretz, Mendelson & Kron, 2003; Saban, 2003, 2004).

The metaphors generated about teaching and learning are mostly the answers of the question like "How is teacher like?" or "How is student like?" In the study of Inbar (1996), conducted with 409 pupils and 254 educators in the city of Jerusalem, over 7000 metaphorical images of teaching, learning and schooling were collected and categorized. Participants were asked to give four images of students, teachers, principles and school and to choose one image in each category as the most representative. Results revealed that while 18% of the educators perceiving students as empty "receptacles" like jars, bottles, containers or glasses, only 7% of the student's own images are from this group.

On the other hand, almost half of the students (44.5%) perceive their teachers as “super controller” like jailer, judge, policeman or commander while only 13% of the educator’s own image comes from this group. This study of Inbar showed that while educators have a tendency to perceive their roles as caring the students, students mostly perceive the evaluative and controlling aspects of teaching. Also, these results provide the researchers with a wide variety of metaphors which is possible to use in further researches.

In a similar study of Mahlios and Maxon (1998) a questionnaire titled “What was School Like” was applied to 134 elementary education and 119 secondary education preservice teachers to identify some of the root metaphors of entry level precervice teachers bring with them as they begin the teacher education program. Researchers intended to define how prospective teachers remember their school and what type of school they preferred. To make a conclusion of the result, while elementary preservice teachers remembered their secondary school experience with a variety of metaphors as being in a family (25%), on a team (23%), in a crowd (18%), or in a prison (12%), they preferred more focused and centered secondary school metaphors like being in a family (43%) and being on a team (43%). Similarly, secondary preservice teachers remembered their secondary school experiences in a more diverse manner as being on a team (23%), in a family (21%), in a crowd (15%) and in a factory (11%) while they preferred again more focused and centered metaphors as being on a team (50%) and being in a family (17%). Results revealed that elementary preservice teachers (43%) preferred family-like secondary school structure when compared to their secondary counterparts (17%). The metaphors selected by participants revealed four different themes: teaching as guiding

(leading students to new knowledge and understanding), teaching as nurturing (providing an environment that promote students growth and development), teaching as stimulating (prods and encourage students to acquire knowledge) and teaching as telling (passing on information and knowledge). Not exactly the same but similar metaphorical conceptions were emerged also in the study of Gurney (1995), as teaching and learning: delivery (information transfer), change (changes in the learner that results in growth or transformation), enlargement (discovery or journey) and humanistic (defines teaching and learning as an individual activities). The results of the Mahlios and Maxon's study also revealed that while elementary teacher candidates are nurturant secondary teacher candidates are discipline focused. In similar studies of Saban (2003, 2004) based on the premise that metaphors people use not only represent the way how they perceive the reality but also shape their professional ideas, attitudes and practices, he used the similar metaphors as a research tool to provide insights into the prospective classroom teacher's images of selves as future teachers in Turkey. These studies provide important basics for the present study. In his first study, 381 entry level students took place while 363 senior students involved in the second one. In his first study he used 12 metaphors (i.e., factory, prison, army, hippodrome, bus, hospital, island, garden, family, team, circus and restaurant) as images of schooling. Participants were asked to rate the metaphors as the most representative of their elementary schooling and as the most preferred image of schooling (in a three-point Likert-scale). Basically, the first six metaphors were representing teacher-centered or content oriented images while the other six were epitome of student-centered or learning oriented images. These groupings were done

based on the relationship between the teacher, the student and the goals of education. While teacher-centered perspectives focuses more on knowledge transmission, student-centered perspective focuses more learning facilitation. The most representative schooling image of his study were “raw material – factory – manufacturer” (56.7%) representing teacher’ role as developing socially useful products while the most preferred one were “child – family – parent” (84%) which were the symbol of a loving nurturing learning environment. Analysis of results revealed that although participants selected both student- and teacher-centered metaphors as their most representative past schooling images, they chose only the student-centered metaphors as the most preferred ones. Results revealed that female participants selected student-centered metaphors as their preferred images more than male participants.

In his second study, Saban (2004) used 20 metaphors (shopkeeper, driver, jockey, technician, potter, doctor, mechanic, commander, judge, guard, parent, baby sister, gardener, juggler, comedian, tool provider, compass, tour guide, coach, conductor). These metaphors are representing the images of prospective teacher’s themselves as future teachers (i.e., professional images) elementary teachers (i.e., former classroom teachers), cooperating teachers (i.e., supervisor of student teaching practice). Similar to author’s first study, metaphors were grouped as teacher- and student-centered ones. Moreover, in this study researcher categorized metaphors also conceptually. Metaphors under teacher-centered ones are grouped into four conceptual categories. In the “*teacher as transmitter of knowledge*” category the metaphorical images of teacher were of shopkeeper, driver and jockey who were both the provider and the transmitter of

knowledge while the student is a passive recipient. In the "*teacher as craft person*" category, metaphors were like technician and potter which symbolize the teacher as someone highly skilled whose main task is to produce students as social useful products while the student merely supplies the raw material. In the category of "*teacher as repairer*" (teacher as doctor and mechanic), the student was defined intellectually and behaviorally defective and so in the need of repair. In this category of metaphors, teachers were also the one who knows what is correct and fixes student's errors. In the category of "*teacher as a superior authority figure*" student are as complaints. Metaphors of this category were commander, judge and prison guard like the symbol of teacher who has a strong authority and implies power relationships in the classroom. There are also four conceptual categories under the student-centered metaphors. In the "*teacher as nurturer*" category (parent, baby sister, and gardener) student is like a developing organism which needs the nourishing its potential capabilities in a loving environment. In the "*teacher as entertainer*" like the metaphorical images of juggler and comedian, teacher uses acting and surprise as part of instruction to provide the better communication and participation of student. In the "*teacher as scaffolder*" student is defined as the constructor of knowledge. The metaphorical images like teacher, as tool provider and compass providing the needed help and assistance to students, are included in this category. In the "teacher as cooperative leader" students are active participants of the instruction and teachers are leaders like tourist guide, coach and conductor. All those conceptual categories provide the present study with a better understanding of metaphors and make it easier to interpret the participant's selections. Results showed that the most

representative elementary teacher metaphor was “potter” (52.9%) followed by “shopkeeper” (41%). The most representative cooperating teacher metaphor was again “potter” (52.1%) followed by “shopkeeper” (50.7%). And finally, most representative self-image metaphors were”juggler” (95%), “conductor” (94.5%) and “baby sister” (94.25). Results of the Saban’s study showed that while participants selected both teacher- and student-centered metaphors as the metaphorical images of their elementary and cooperating teachers, they choose only the student-centered metaphors as the representative of their self-images. With regard to the differences between their images of selves, their elementary and cooperating teachers, results revealed that participants find their selves significantly less teacher-centered and more student-centered than both their elementary and cooperating teachers. Besides, participants find their cooperating teachers significantly more student-centered than their elementary teachers. With regard to the gender differences, result showed that female teacher candidates appear to be less teacher-centered and more student-centered than their male counterparts.

In another recent study, Martinez, Sauleda and Huber (2000) indicated that metaphors are not just figures of speech, but constitute an essential mechanism of the mind. In their study they analyzed the metaphorical conceptions of 50 experienced and 38 prospective teachers regarding their images of learning. They wanted to clarify the curial role of metaphors in educational thinking by elaborating on different metaphorical perspectives. Based on the explanation of Lakoff and Johnson (1980) saying that fundamental abstract ideas are based on a diversity of complex metaphors, which are anchored in a set of primary metaphors mediated by physical experiences in the

environment, authors assumed that metaphors have powerful influences on process of analyzing and planning in education and profoundly affecting teachers' thinking about teaching and learning. In their study they asked participants to formulate their ideas of preferred type of learning by metaphors. According to results of this study 57% of the metaphors formulated by experienced teachers were behaviorist and empiricist based, while 38% were constructivist based. Experienced teachers mostly define the learning as an accusation of knowledge and define the teacher as knowledge or skill transmitter. However, 56% of prospective teachers formulated learning by constructivist metaphors while only 22% was describing the education by behaviorist metaphors. Literature reveals significant differences between teacher's self images as beginning versus experienced teachers (Ben-Peretz, Mendelson & Kron, 2002). Experienced teachers define the education mostly with teacher- centered metaphors. Martinez, Sauleda and Huber (2000) concluded that influences of metaphors on education are immense and stated that atmosphere in the classroom is related to the teacher's favored education metaphor. The study of Tobin and Tipins (1996) is supporting this argument. In their study researchers showed how creating new metaphors can help teachers construct variations of their teaching role and expand their instructional practices. They described one of the teachers in their study as using two conceptualization, depending upon the particular lesson he wished to conduct. He was the captain of a ship and his students were the crew and he was an entertainer. The researchers observed that as he switched metaphors so did his teaching style. Researchers concluded that when a teacher prefers the captain metaphor, he or she tended to practice strict control over the students and

when a teacher preferred the entertainer metaphor he was first of all friendly and humorous in the classroom. How teacher perceive their professional role mostly becomes their teaching style in classroom. Most of the studies done with metaphors including the present one were dependent on this assumption.

According to Bandura (1977) teacher's professional activities are closely linked to their sense of efficacy and their belief that they have an impact on the learning and achievement of their students. Combs, Blume, Newman and Wass (1974; cited in Ben-Peretz, Mendelson and Kron, 2003) contend that teacher's self images is determined by their way of perceiving themselves and their role in society. This self image in turn influences their teaching strategies and behavior in classroom. In the study of Ben-Peretz, Mendelson and Kron (2002) it is mentioned that most of the teachers saw their selves as a combination of subject matter experts, didactical experts and pedagogical experts. The purpose of their study was to figure out how teaching situation in which teachers find themselves shape their professional self-images. Researchers based their study on the premise that teachers' perception of their professional roles is closely linked to their self-images and their impact on the learning and achievement of their students. This study is conducted by 60 teachers, half taught high-achieving students and half taught to low-achieving students. Participants were asked to choose one of the 7 metaphors as drawings of the occupations like, shopkeeper, judge, animal keeper in a zoo, conductor of an orchestra, puppeteer, and animal trainer and they were asked to make explanations about their choice. Most of participants (64%) teaching in low-level academic achievement classes chose the metaphor of animal keeper and they added that

they don't feel like teaching, but more like taking care of the students as baby-sisters. However, only 18% of the teachers in high-level achievement classes chose the metaphor of "animal keeper." This difference was statistically significant. More than half of the teachers in high-level achievement classes (54%) chose the metaphor of "conductor" and they explained their choice that they feel confident that their class is like a gifted "orchestra" and as a teacher they only provide them with the leading. Only 12% of the teachers in low-level academic achievement classes rated for this metaphor. Major and the most important finding of this study was the significance impact of teaching context on teacher's image of their professional selves.

In his study, BouJaoude (2000) attempted to elucidate preservice teachers' conception of science teaching because of the assumed links between these conceptions and teacher's classroom practice (Tobin & Tippins, 1996). He investigated preservice teachers' conceptions at different points of a one-year preservice teacher education program which adopts a constructivist approach to teaching. Research indented to make a comparative longitudinal research at different points of a teachers' professional development. In the study, there were 32 preservice teachers of whom 17 were biology education majors, 9 were chemistry education majors, and 6 were physics education majors. Participants responded to the following five items at the beginning and the end of the first semester and at the end of second semester. These items were: (1) Describe in your own words the role of the teacher in teaching/learning process. (2) Describe in your own words the role of the student in teaching/learning process. (3) Describe in your own words how teaching occurs. (4) What are some teaching strategies that you consider

to be most effective for teaching science? (5) Provide your own metaphor for the teaching/learning process. These 5 items were related theories of teaching and learning, effective teaching strategies, role of teacher in teaching/learning process, role of student in teaching/learning process, and metaphors of science teaching. He categorized the responses as “Transfer”, “Constructivist”, “Hybrid” and “Outlier”. In transfer category, preservice teachers definitions of teachers’ role was reflecting the evidence that they believed in two or more characteristics of the transfer view: the teacher transmit knowledge, the students comes to class as a blank slate, the teachers’ job is to pass knowledge, etc. In constructivist category, participants’ responses were based on constructivist view: students are active rather than passive, come to science lesson already holding ideas about science topics, make sense of new experiences by constructing meaning, etc. The hybrid category was for the responses which include characteristics of both transfer and constructivist. Finally, responses that didn’t fit any of the above categories were labeled as outlier. The metaphors constructed by the pre-service teachers were used to classify respondents as “Transmitter”, “Facilitator”, “Eclectic” and “Outlier”. Results of this study showed that almost 66% of the participants were categorized as “transmitter” based on their metaphors provided at the beginning of the year. This percentage decreased to 41% at the end of the year. On the other hand, the percentage of “facilitator” increased from 12% to 31% through the year. The percentage of those classified as “eclectic” increased from 3% at the beginning of the year to 19% at the end of the year. Finally, the percentages of the participants who didn’t give e metaphor changed from 16% to 6% through the end of year. Based on the

responses to open-ended questions, 75% of the respondents were classified as “Transfer” and this percentage decreased to 34% at the end of the year. This decrease in the percentage of “Transfer” corresponded to an increase in the percentage of “Constructivist” from 1% to 50% during the year. The percentages of respondents classified as “Hybrid” decreased from 7% at the beginning of the year to 5% at the end of the year. Comparison of the participants’ responses from different teaching areas (biology, physics and chemistry) revealed that, preservice biology teachers held more transfer/transmitter conception than either physics or chemistry preservice teachers through out the course of the study. Conversely, less preservice biology teachers than either physics or chemistry teachers shifted toward the constructivist/ facilitator or the eclectic/hybrid conceptions of science teaching.

2.4 Perception of Teaching as Profession

How preservice teachers perceive the profession of teaching is an important concern for teacher training programs. As how do they perceive their role as a teacher, the perception of teaching as a profession also has effects on their performance. Kagan (1992) notes that teachers’ beliefs: (1) are stable and resistant to change, and (2) that they reflect the nature of the instruction the teacher provides the students. The filter created by prior beliefs can make effective communication between preservice teachers and teacher educator is problematic (Joram & Gabrielle, 1998). That is why these beliefs have to be investigated by teacher educators to know better about their students and for a better design of curriculum. Beijard, Verloop and Vermunt (2000) state that teachers'

perceptions of their own professional identity affect their professional development as well as their ability and willingness to cope with educational change and to implement innovations in their own teaching practice. In their study researchers describe the teachers' professional identity as being subject-matter expert, pedagogical expert and didactical expert. These terms were presented to the 80 participants as: a subject matter expert is a teacher who bases his/her profession on subject matter knowledge and skills; a didactical expert is a teacher who bases his/her profession on knowledge and skills regarding the planning, execution, and evaluation of teaching and learning processes; a pedagogical expert is a teacher who bases his/her profession on knowledge and skills to support students' social, emotional, and moral development. Result of the study showed that most of the participants in this study saw themselves as a combination of subject matter experts, didactical experts and pedagogical experts. Both subject matter expertise and didactical expertise appeared to be most and equally present in the teachers' perceptions; this was not particularly the case for pedagogical expertise (Beijard et al., 2000). In the study of Saban (2003) a questionnaire conducted with 381 elementary preservice teachers. The participants agreed most with the item saying "I believe that my most important role as a classroom teacher is to facilitate student' learning" (98%) which is defining teachers' role as a "didactical expert". Similarly, they selected the item saying "I believe that my most important role as a classroom teacher is to foster students' social, emotional and moral growth" (97%) which defines the role of teacher as a "pedagogical expert". The item defining teachers' role as a "knowledge expert" and sating that teachers' most important role is to dispense knowledge was rated less (78%).

In addition, there was no significant difference between the ratings of male and female participants.

In his study, Saban (2003) was also trying to figure out preservice teachers' perception of instruction and students' role in instruction and career choice commitments. The results of his study revealed that 97% of the participants perceived the instruction with a constructivist item stating that students learn more asking questions than from listening to the teacher. The social constructivist item stating that students learn more through the active participation in cooperative learning activities were rated by 93% of the participants. The least rated item was the behaviorist one which states that students learn best through direct instruction (70.6%). Analysis did not show any significant difference between the choices of male and female students. In general, responders strongly agreed with all three instructional orientations. With regard to career choice commitments, most preservice teachers (77%) responded that they made the right decision to enter elementary teaching. Again most of the participants agreed that teaching is a life long career (82%) and 89.5% of the participants were looking forward to meet with their first students. In general, most of the participants had a positive attitude about becoming classroom teacher. With respect to gender, Saban's (2003) study showed that female participants agreed significantly more than males that choosing teaching as a profession was a right decision. About finding teaching profession as a life long career and looking forward to meet their first students, female participants again voted significantly more than the male participants. Researcher used three items to check elementary preservice teachers' perception of students' role in

instruction. The item stating that students are like empty tanks to fill by knowledge was rated by 66% of the participants. The item defines students as active participants of instruction who discover and construct was rated by 67% of the participants.

2.5 Reasons of Choosing Teaching as a Career

A number of studies are carried in different countries over the last two decades to explore the motivation of those who decide to become teachers. As Brown (1992) stated in her study, reasons for choice can be many and varied:

> "They might be economic in order to satisfy one's basic needs and achieve a sense of security which are major concerns of most individuals. Alternatively, choice can be based on reasons which emanate from a feeling that work is a moral obligation, a responsibility one has to society to be a contributing member, to do something that benefits humanity and to repay society for all that it has provided for one. Still other reasons might be concerned with the need to enhance one's identity, self-worth, personal growth and social contact" (p.185).

Myers and Neley (1990) pointed out that most education majors insist that they choose to teach because they: have experience working with children; have rewarding experience with former teacher; love children; want to make a difference have relatives who taught.

Zimpher (1989), in his study, reported that people choose teaching as a profession because they want to help students grow and learn (95%); think that teaching

is a challenging profession (63%); feel that teaching is their calling, that is an honorable profession, are inspired by one of their favorite teachers, or like the working conditions (45%).

The results of King's study (1993) revealed that African American students' reasons to enter teacher education programs are: feel that they have the ability to work with young people (83%); think that their abilities are well suited to teaching (78%); think that they can contribute to the betterment of society (73%); believe that teaching gives them the opportunity to be creative (66%); want to have the opportunity to work with diverse populations (56%); think that teaching is intellectually satisfying (56%).

Serow (1994) stated that preservice teachers who feel that teaching is their "calling" (a natural inclination and ability to teach) are more likely to succeed than others. The results of his study were showing that teaching profession is attractive for the reasons: like working with children (95%); want to help children (91%); inspired by their former teachers (73%); feel they can bring about social change (56%).

Most of the researches in literature pointed out that the reasons for choosing teaching as a profession fall into three categories (Saban, 2003). These categories were defined by Kyriacou and Coulthard (2000) as:

(1) Altruistic reasons: these reasons deal with seeing teaching as a worthwhile and important job, a desire to help children succeed, and a desire to help society improve.

(2) Intrinsic reasons: these reasons cover aspect of the job activity itself, such as the activity of teaching children, an interest in using their subject matter knowledge,

expertise and a sense of calling for teaching.

(3) Extrinsic reasons: these reasons cover aspects of the job which are not inherit in work itself, such as long holidays, level of pay, and status.

Synder (1995) states that not surprisingly the reasons encouraging students to choose teaching profession is changing over time. There are also marked differences between the rankings of various reasons from country to country (Saban, 2003).

Existing literature indicated that most of the preservice teachers have altruistic or intrinsic reasons for choosing the teaching profession (Yong, 1995; Saban, 2003; Kyriacou et al., 2000, 2003; Akyeampong & Stephens, 2002; Su, 1997). Brown (1992) pointed out that two main altruistic reasons for choosing teaching were "desire to work with children and adolescent" and "to be of service or to contribute the society/country". As Yong (1995) stated, the main intrinsic motives of teacher trainees for choosing teaching were "the honor in being a teacher" and perception that teaching is a "caring" profession. However, "immediate employment after graduation" (external motivation) was the most rated reason by precervice teachers in Cyprus (Papanastasiou, 1998). Researches also pointed out that the reasons related with salaries were the main attraction for choosing teaching profession in Zimbabwe and Cameroon (Yong, 1995). In these countries, extrinsic reasons to choose teaching were more attractive than altruistic and intrinsic reasons.

Brown (1992) investigated reasons of choosing teaching profession of Jamaican new graduates of teacher collages (N= 108). The researcher asked the questions: "What is the main reason why you chose to become a teacher?" and "What other reasons made

you decide to become a teacher?" The responses to each question were analyzed separately and coded according to the themes which emerged. After coding, categories were derived for main reasons. These were: (1) love of the teaching profession; (2) love of and wanting to help children; (3) contribution to society/country; (4) influence of others; (5) opportunity for academic and personal development; (6) no other job/failed to enter other profession; and (7) secure job. For "other" reasons, the categories were: (8) vacation/working hours and (9) career status. The result of the study showed that the most rated reasons with a descending order were; love of and wanting to help children (30.5%), contribution to society/country (25%), love of teaching profession (18.5%), no other job/failed to enter other profession (12%), influence of others (11%), opportunity for academic and personal development (6%), and secure job (4%). The other reasons were rated as: career status (5%) and vacation/working hours (1%). Brown (1992) did not categorize the reasons as altruistic, intrinsic and extrinsic. However, according to the definitions in literature, the most rated reasons in her study were altruistic and intrinsic ones as it is predicted in literature.

In a similar study, Yong (1995) indented to explain 133 elementary preservice teachers' main reasons of choosing teaching profession in Darussalam. The participants were asked to answer two open-ended questions: "What is the main reason why you choose to become a teacher?" and "What other five reasons made you decide to become a teacher?" By the analysis of responses, 14 main reasons were derived. These reasons were categorized as "extrinsic", "intrinsic" and "altruistic". Under the extrinsic category, the main reasons for choosing teaching were; no other choice (15%), influence of others

(12%), good pay/salary (9%), secure job/better future (7%), and vacation/working hours (4%). In total, extrinsic reasons were rated by 45% of the participant. Under the intrinsic category, the preservice teachers' two main reasons of choosing teaching were "ambition to become a teacher" (11%) and "opportunities for academic development" (11%). The other reasons under this category were; challenging job (7%), respectable job (3%), and rule/discipline pupils (0.3%). In total, intrinsic reasons were rated by 32% of the preservice teachers. The reasons under the altruistic category were rated by 22% of the participants. Differently from literature, Yong (1995) categorized "love of working with children" not as intrinsic reason but as an "altruistic reason". As a result of this, "like working with children" (10%) became the most important reason under this category and rated as fifth reason in general. Other reasons under altruistic category was; contribution to society/country (6%), imparting of knowledge (5%) and shortage of teachers (1.2%). Result of the study was not supporting the general tendency in literature. The motives of the participants were first extrinsic (45%), second intrinsic (32%) and third altruistic (22%).

The study of Su (1997) was carried with 148 (90 white, 58 minority) teacher candidates in USA. He asked preservice teacher to rate on a list of 14 selected reasons for entering teaching and compared the minority and white student's entry perspectives. The results revealed that both groups of preservice teachers agree on the degree of importance placed on each of the reasons. The most rated reasons were; "to have a personally satisfying job", "to make a contribution to society", "to help children and/or young adults", "to be of service to others", "like children and/or youth" and "to work in a

noble, moral and ethnical profession". As it was derived from results, although most of the minority and white students cited altruistic/intrinsic reasons for their decisions to enter teaching, there were some significant differences in their entry perspectives. While the mainstream students choose to become teachers mainly for traditional altruistic reasons, the minority students enter teaching with a keen awareness of the inequalities experienced by the poor and minorities. In this study, all the teacher candidates in the program were also asked whether they thought they made the right decision to become a teacher, the majority of them (78% of the white students and 88% of the minority students) said "yes," 21% of the white students and 12% of the minority students said "not sure," and 1% of the white students said "no." It seemed that most of preservice teachers in the study of Su (1997) had a positive attitude towards becoming teachers.

In the study of Saban (2003), 381 entry level elementary preservice teachers participated. He applied a questionnaire with a list of 20 reasons. The participants were asked to rate the 20 reasons based on a three-point Likert-scale (1= not influential at all, 2= partly in influential, and 3= most influential). These 20 reasons were basically categorized as altruistic, intrinsic and extrinsic.

The altruistic reasons were; believing that teaching is a sacred profession, contribute the future society, help children learn and succeed in school, share my knowledge with children, make a difference in children's lives, serve as a role model for children. The intrinsic reasons included; feel of sense of calling for teaching, teaching suits best to her/his personality, strong desire to work with children, love of children, positive image of teaching from past schooling experience. Finally, the extrinsic reasons were; income,

good job security and a steady income, respected profession in society, long holidays/summer vacations, assured employment after graduation, advantageous when raising a family, other people' encouragement to become a teacher. The most important reasons which received the highest (50% and above) ratings were; "I want to contribute to the future of society" (69%), "I want to help children learn and succeed in school" (69%), "I want to share my knowledge with children" (61%), "I believe that teaching is a sacred profession" (59%), "my employment as a teacher is assured after graduation" (57%) and "teaching offers good job security and a steady income" (52%). Saban (2003) emphasized that participants rated the altruistic reasons as more important and the extrinsic rewards as relatively more influential than the intrinsic motives. In addition, although the majority of the participants strongly disagreed with the statement that: ''Teachers are paid quite well, ''because of their limited family economic conditions, most of them were also strongly concerned with getting a secure job with a steady income immediately after graduation. The six reasons rated as most important by male participants were also rated as most important by female participants. However, analysis revealed that female participants had more tendencies to place more value on "altruistic and intrinsic reasons when it's compared to their male counterparts.

CHAPTER III

METHOD OF THE STUDY

In this chapter, research design and procedure, research question, population and sample selection, data collection instrument, and the data analysis procedure of the study are represented.

3.1. Research Design and Procedure

This study intends to explore preservice secondary science and elementary science teacher's metaphorical images of their past education life and ideal education life, perception of teaching as a profession, and reasons of choosing teaching as a profession**.** The present study was conducted at the beginning of spring semester of 2004 –2005 academic year. The subjects were seniors of the elementary science, biology, chemistry and physics education departments who were ready to be teachers. The data of the study was collected by utilizing the survey research techniques. The participants filled out a questionnaire which has five different subsections; demographic properties, most representative past education life (MRPEL) metaphor images, most preferred ideal education life (MPIEL) metaphor images, perception of teaching as a profession, reasons of choosing teaching as a profession.

3.2 The Statement of the Main Problem

The purpose of this study is to understand how teacher candidates conceptualize their images of school, teacher and student regarding their previous education experiences and ideal education image in their minds and to investigate their perception of teaching as a profession and their reasons of choosing this profession.

3.2.1 Research Questions and Related Sub-problems

Based on the main problem, research questions and related sub-problems are as follows:

1. Which metaphors represents most preservice elementary and science teacher's images of teachers in their past educational life?
2. Which metaphors preferred most preservice elementary and science teacher's images of ideal teacher?
3. What are preservice teachers' perceptions of teaching as a profession?
4. What are preservice teachers' reasons for choosing teaching as a profession?

Based on the first research question, the sub-problems to be answered in this study are as follows:

Sub-problem 1.1: Is there a significant difference between the most representative past educational life metaphors of male and female participants?

Sub-problem 1.2: Is there a significant difference between preservice teachers' metaphorical images of past and preferred education life?

Sub-problem 1.3: Is there a significant difference between the most representative past educational life metaphors of preservice secondary science teachers' and preservice elementary science teacher candidates?

Based on the second research question, the sub-problems to be answered in this study are as follows:

Sub-problem 2.1: Is there a significant difference between the most preferred past educational life metaphors of male and female participants?

Sub-problem 2.2: Is there a significant difference between the most preferred past educational life metaphors of preservice secondary science teacher and elementary preservice science teacher?

Based on the third research question, the sub-problems to be answered in this study are as follows:

Sub-problem 3.1: Is there a significant difference between male and female participants perception of teaching as a profession?

Sub-problem 3.2: Is there a significant difference between preservice secondary science teacher and preservice elementary science teacher perception of teaching as a profession?

Sub-problem 3.3: Is there a significant difference between male and female participants commitments of career choice?

Sub-problem 3.4: Is there a significant difference between preservice secondary science teachers and preservice elementary science teachers commitments of career choice?

Sub-problem 3.5: Is there a significant difference between male and female teacher candidate's orientation towards instruction in terms of being "behaviorist", "constructivist" or "social constructivist" ?

Sub-problem 3.6: Is there a significant difference between preservice secondary science teachers and preservice elementary science teachers orientation towards instruction in terms of being "behaviorist", "constructivist" or "social constructivist"?

Sub-problem 3.7: Is there a significant difference between male and female candidate's attitudes towards student's role in instruction process?

Sub-problem 3.8: Is there a significant difference between preservice secondary science teachers and preservice elementary science teachers attitudes towards student's role in instruction process?

Based on the fourth research question, the sub-problems to be answered in this study are as follows:

Sub-problem 4.1: Is there a significant difference between male and female participant's reasons of choosing education as a profession in terms of "altruistic", "intrinsic" or "external"?

Sub-problem 4.2: Is there a significant difference between preservice secondary science teachers and preservice elementary science teachers reasons of choosing education as a profession in terms of "altruistic", "intrinsic" or "external"?

3.2.2 The Statement of the Statistical Hypothesis Associated with Sub-problems

The following null hypotheses are stated in order to assess the sub-problems. To determine the significance of the sub-problems they are tested at the significance level of .05.

The null hypothesis of the sub-problem 1.1:

- H_0 1.1: There is no significant difference between the mean scores of the most representative past educational life metaphors of male and female participants.

The null hypothesis of the sub-problem 1.2:

- H_0 1.2: There is no significant difference between the mean scores of preservice teachers' metaphorical images of past and preferred education life.

The null hypothesis of the sub-problem 1.3:

- H_0 1.3 There is no significant difference between the mean scores of the most representative past educational life metaphors of precervice secondary science teachers and preservice elementary science teacher.

The null hypothesis of the sub-problem 2.1:

- H_0 2.1 There is no significant difference between the mean scores of the most ideal representative educational life metaphors of male and female participants.

The null hypothesis of the sub-problem 2.2:

- H_0 2.2 There is no significant difference between the mean scores of the most representative ideal educational life metaphors of preservice secondary science teachers and preservice elementary science teachers.

The null hypothesis of the sub-problem 3.1:

- H_0 3.1 There is no significant difference between the mean scores of male and female participants perception of teaching as a profession.

The null hypothesis of the sub-problem 3.2:

- H_0 3.2 There is no significant difference between the mean scores of preservice secondary science teachers and preservice elementary science teachers perception of teaching as a profession.

The null hypothesis of the sub-problem 3.3:

- H_0 3.3 There is no significant difference between the mean scores of male and female participants commitments of career choice.

The null hypothesis of the sub-problem 3.4:

- H_0 3.4 There is no significant difference between the mean scores of preservice secondary science teachers and preservice elementary science teachers commitments of career choice.

The null hypothesis of the sub-problem 3.5:

- H_0 3.5 There is no significant difference between the mean scores of male and female teacher candidate's orientation towards instruction in terms of being "behaviorist", "constructivist" or "social constructivist".

The null hypothesis of the sub-problem 3.6:

- H_0 3.6 There is no significant difference between the mean scores of preservice secondary science teachers and preservice elementary science teachers orientation towards instruction in terms of being "behaviorist", "constructivist" or "social constructivist".

The null hypothesis of the sub-problem 3.7:

- H_0 3.7There is no significant difference between the mean scores of male and female candidate's attitudes towards student's role in instruction process.

The null hypothesis of the sub-problem 3.8:

- H_0 3.8 There is no significant difference between the mean scores of secondary science teacher candidates and elementary science teacher candidate's attitudes towards student's role in instruction process.

The null hypothesis of the sub-problem 4.1:

- H_0 4.1 There is no significant difference between the mean scores of male and female participant's reasons of choosing education as a profession in terms of "altruistic", "intrinsic" or "external".

The null hypothesis of the sub-problem 4.2:

- H_0 4.2 There is no significant difference between the mean scores of secondary science teacher candidates and elementary science teacher candidate's reasons of choosing education as a profession in terms of "altruistic", "intrinsic" or "external".

3.3 Population and Sample Selection

The target population of the present study was the senior preservice science teachers in Turkey. Since data collection from all the preservice science teachers in Turkey had some difficulties in terms of financial and time limitations issues, the accessible population was defined as "the seniors preservice secondary science (biology, chemistry, physics) and preservice elementary science teachers in teacher education programs of Gazi University (GU), Hacettepe University (HU) and Middle East Technical University (METU) in Ankara." Since Ankara is a cosmopolitan city as capital of Turkey, it is assumed that it would be a good representative of education departments of Turkish universities. Therefore, the sample is considered to bear sufficient heterogeneity in terms of the preservice science teachers profile in Turkey.

The total number of the participants from all universities was 441. The sample included 287 female and 153 male participants. Only one of the participant didn't indicate his/her gender. Dispersal of the sample according to universities (Table 3.1) and departments (Table 3.2) were; 196 students from GU, 172 students from HU, and 73 students from METU and 246 students from science education department, 61 students from biology education department, 95 students from chemistry education department and 39 students from physics education department. Most of the student were graduate of general high school (n=154), super lycee (n=135), Anatolia high school (n=45) and Anatolia teacher high school (n=63). The mothers of the participants were mostly elementary school graduates (n=217), secondary school graduate (n=74), high school graduates (n=47), or not literate (n=54) while their fathers were elementary school graduates (n=138), high school graduates (n=106), university (n=77), and secondary school graduate (n=69).

Table 3.1 Distribution of Preservice Science Teachers by the University

Universities	**Number of Participants**	**Percent %**
G.U.	196	44,4
H.U.	172	39,0
METU	73	16,6
TOTAL	441	100,0

Table 3.2 Distribution of Preservice Science Teachers by Departments

Departments	**Number of Participants**	**Percent %**
ESE	246	55,8
SSE Biology	61	13,8
Physics	39	8,8
Chemistry	95	21,5

ESE = Elementary Science Education
SSE = Secondary Science Education

3.4 Data Collection Instrument

Data were collected through a "Perception of Teaching as a Profession and Reasons of Choosing Teaching as a Profession" questionnaire developed by Saban (2003-2004). This questionnaire was used to analyze the secondary and elementary science teacher candidates' perception of teaching as a profession and reasons of choosing teaching as a profession. In order to use the instrument in the current study some adaptations was made like to pose the statements according to secondary and elementary science teacher and student profile. Questionnaire included five basic sections. The first section was gathering data about demographic characteristics of participants. The second and the third part included the same 12 metaphors to gather information about participant's past and preferred education life images. The fourth part

of the questionnaire was designed to explore participant's perception of teaching. Finally the last part of the questionnaire included statements to explore participant's reasons for choosing teaching as a profession.

The first part included fixed-response questions to make a profile of participants by gathering demographic data. The information about gender, university ,department, grade level, and secondary schooling of the participants were questioned in this section.

The second and third part of the questionnaire were designed to define participant's images of past and preferred education life. These sections were composed of the 12 metaphors concerning the images of students, school and teacher. These metaphors were generated through the analysis of literature by Saban, (2003) and grouped as "teacher centered" and "student centered". Grouping of the metaphors were done according to relationship between teacher and student and the goal of education. As Saban (2004) mentioned, while the teacher-centered perspective focuses more on transmission of knowledge and delivering instruction, the student-centered perspective focuses more on learning facilitation and active student involvement. Furthermore, teacher-centered metaphors have four conceptual categories and six exemplar metaphors. One of these conceptual categories is defining the teacher as "transmitter of knowledge" who provides and transmit the knowledge for students who are passive knowledge recipients. Related metaphors of this concept are defining teacher as a jockey and driver. The metaphor category defining teacher as "craft person" is represented by the "raw material – factory – manufacturer" metaphorical image. In this category teacher is defined as highly skilled individual whose duty is to produce students as social useful

products. In another category teacher is defined as a “repairer” and “doctor” metaphor who is giving help to the students (who are intellectually and behaviorally defective) was representative of this category. Also teacher is the one who knows what is corrector not and his or her main task is to fix student’s errors and deficiencies. In the fourth category teacher is a “superior authority” figure like a “commander”, or “prison guard” who is ruling the student (as compliant). There are also six student-centered metaphors in the questionnaire which are categorized in three different concept. In one of this concept, teacher is a “nurturer” who nourishes the potential of students (developing organisms) in a loving environment. Exemplar metaphors of this category in the questionnaire are “parent” who are taking care of the children and “gardener” who are meeting the needs of flowers. Another concept defines teacher as an “entertainer” who uses acting and surprise during the instruction and make the communication easier for student who are “conscious observant”. The “juggler” is an exemplar metaphor in this category. In the category of “teacher as a cooperative leader”, students are defined as active participants and the teacher is the leader. Tourist guide and coach metaphors are the exemplars of this category. All those metaphors were represented in a three-point Likert-style which was considered the best option for systematically trying to capture the respondents’ attitudes (Saban, 2004). The Likert-scale is one of the most commonly used attitude scale in literature. Although most research suggest that a five point Likert-scale gathering the best responses, three- or four-point Likert-scales are also utilized as legitimate survey procedures (Lewin & Akyeampong, 2002). Basically in the second and third section participants were asked to categorize these 12 metaphors as; 1=not

representative at all, 2= partly representative, 3=most representative regarding their past education life and; 1= not preferred at all, 2= partly preferred, and 3= most preferred regarding their image of ideal life.

The fourth section included items to profile the participant's conception of teaching as a profession. This section was composed of parts related with; perception of professional identity (3 statements), career choice commitments (4 statements), conception of teaching a as profession (1 statement) , orientations towards instruction (3 statements) and students (3 statements). Totally 14 items existed in this section. The five-point Likert-scale used and participants were asked to rate their level of agreement for each statement as; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree.

The fifth section of the questionnaire designed to explore the participant's reasons of choosing teaching as a profession. There were 20 statements which were categorized as extrinsic, intrinsic, altruistic and other reasons. These categories were not mentioned in the questionnaire to not the influence participant's ratings. This part was designed in five-point Likert style defining the participant's agreement as; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree.

3.5 Analysis of Data

Data of the current study were analyzed utilizing descriptive and inferential statistics. In order to address the research questions, descriptive and inferential statistics

were utilized. Based on the participant's ratings on the scale of four different section's of questionnaire percentages, means, and standard deviations of each item were computed.

A series of inferential statistics was performed on the scores of each subscale to evaluate statistical hypotheses of the sub-problems. Paired-samples t-tests were performed to figure out the differences between the mean scores of teacher candidate's responses to the same metaphor as most representative and most preferred education life images at the .05 level of significance. Independent-samples t-test were performed whether there was a difference between the mean scores of male and female participant's ratings of metaphors regarding most representative and most preferred education life images at the .05 level of significance. To define the differences between the participant's responses, regarding their perception of teaching as profession and reasons for choosing teaching as a profession, in the base of gender and teaching area, one-way ANOVA was performed at the significance level of .05.

3.6 Assumptions and Limitations of the Study

In this section assumptions and the limitations of the present study are presented.

3.6.1 The Assumptions of the Study

- The sample size represents the population.
- The instrument was administered under standard conditions.
- The participants completed the instrument accurately and truthfully.
- The participants understand the concept of metaphors effectively.

3.6.2 The Limitations of the Study

- Subjects of this study were limited to 441 senior teacher candidates.
- The concept of metaphor was new to participants.

CHAPTER IV

RESULTS OF THE STUDY

The purpose of this study is to explore preservice secondary science (biology, chemistry, and physics) and elementary science teacher's past and preferred metaphor images about school, student, and teachers concepts and to investigate their perception of teaching as a profession and the main reasons of choosing teaching as a profession. The results of the study are based on the quantitative data obtained by the items in questionnaire and these results are represented in different subsections as, percentages (%), means (*X*) and standard deviations (SD).

The first subsection includes the metaphors of preservice science teachers about their previous and ideal educational life. The second subsection includes their perception about teaching as a profession, and the third subsection includes the reasons of choosing teaching as a profession.

4.1 Metaphorical images of Preservice Science Teachers

Table 4.1 reports the most representative and the most preferred metaphorical images selected by participants regarding their past education life and ideal education life images of teacher, school and student. Table gives the information by percentages, means, and standard deviations.

Table 4.1 Item Means, Standard Deviations and Percentages of Respondents' Scores on Metaphorical Images

Student- School- Teacher (key aspects)		Male %	Male *X* (SD)	Female %	Female *X* (SD)	Total %	Total *X* (SD)
Teacher-centered metaphors							
Raw material – factory – manufacturer (a socially useful product)	MR	33.3	2.11 (0.73)	28.7	2.16 (0.62)	30.2	2.14 (0.66)
	MP	45.6	2.26 (0.76)	34.6	2.16 (0.70)	38.3	2.20 (0.72)
Criminal – prison – guard (external control & punishment)	MR	7.4	1.41 (0.62)	4.9	1.26 (0.54)	5.7	1.31 (0.57)
	MP	0	1.06 (0.23)	1.4	1.04 (0.27)	0.9	1.05 (0.26)
Soldier – Army – commander (rules & absolute compliance	MR	15.9	1.83 (0.67)	12.2	1.64 (0.68)	13.4	1.70 (0.69)
	MP	2.7	1.36 (0.53)	3.1	1.20 (0.47)	3.0	1.26 (0.50)
Race horse – Hippodrome – Jockey (exams & competition)	MR	21.3	1.76 (0.78)	23.5	1.89 (0.75)	22.7	1.85 (0.76)
	MP	8.0	1.41 (0.63)	3.1	1.26 (0.50)	4.8	1.31 (0.56)
Passenger – Bus – Driver (fixed-curriculum & standardization)	MR	14.8	1.65 (0.72)	12.4	1.61 (0.69)	13.2	1.63 (0.70)
	MP	10.1	1.58 (0.66)	9.1	1.56 (0.65)	9.4	1.56 (0.65)
Patient – Hospital – Doctor (diagnosing & eradicating student errors)	MR	14.7	1.70 (0.71)	9.1	1.60 (0.65)	11.0	1.63 (0.67)
	MP	19.3	1.76 (0.75)	11.3	1.67 (0.66)	14.0	1.70 (0.70)
Student-centered metaphors							
Tourist – Island – Guide (guided discovery & exploration)	MR	24.7	1.82 (0.80)	26.4	2.00 (0.72)	25.7	1.94 (0.75)
	MP	34.8	2.03 (0.81)	43.6	2.3 (0.69)	40.5	2.21 (0.74)
Flower – Garden – Gardener (meeting individual needs & interest)	MR	26.0	1.96 (0.74)	28.3	2.01 (0.74)	27.4	1.99 (0.74)
	MP	45.7	2.26 (0.76)	52.4	2.42 (0.66)	50.0	2.36 (0.70)
Child – Family – Parent (a loving & nurturing learning environment)	MR	32.2	2.07 (0.75)	25.6	2.02 (0.69)	27.8	2.03 (0.71)
	MP	48.3	2.37 (0.67)	52.6	2.42 (0.66)	51.0	2.40 (0.67)
Audience – Circus – Entertainer (having fun & joy while learning)	MR	6.0	1.31(0.58)	2.1	1.20 (0.45)	3.4	1.24 (0.50)
	MP	2.7	1.26 (0.49)	3.9	1.33 (0.54)	3.4	1.31 (0.53)
Customer – Restaurant – Chef (receiving a quality education service)	MR	5.3	1.37 (0.58)	3.2	1.29 (0.52)	3.9	1.32 (0.54)
	MP	2.7	1.24 (0.49)	3.1	1.27 (0.51)	3.0	1.26 (0.50)
Player – Team – Coach (active participation & cooperation)	MR	35.8	2.16 (0.72)	24.9	2.06 (0.65)	28.6	2.09 (0.68)
	MP	51.7	2.37 (0.71)	40.1	2.25 (0.69)	44.0	2.29 (0.70)

MR= Most representative , MP= Most preferred, %=percentage, *X*=mean, SD= standard deviation

This table indicates that most frequently chosen metaphor as the most representative of past education life (MRPEL) were “raw material – factory – manufacturer “ (30%) which is teacher-centered metaphor and represents the education process as developing social useful products. The least frequently chosen metaphor were “Audience – Circus – Entertainer” (3%) which is a student-centered metaphor and represents the education as having fun and joy during learning.

The most frequently rated metaphor as the most preferred ideal education life (MPIEL) image were “child – family – parent” (51%) as the represent of a loving nurturing learning environment and the least frequently rated one were “criminal – prison – guard” (0.9%) which defines the education with external control and punishment.

Results are showing that female participants selected both teacher- and student-centered metaphors as MRPEL. However, altouht they had relatively more tendency to vote for student-centered metaphors as the MRPEL, they voted highest for a teacher-centered metaphor (raw material-factory-product) as the most representative (29%). They remembered their school as factory, their teacher as manufacturer and their selves as raw material (29%). However, male participants rated a student centered metaphor as the most representative of their previous educational life by remembering their school as a team, their teacher as a coach and their selves as a player (36%). The choices of male and female participant’s most representative metaphor images were almost opposite of each other. While females remember their selves mostly passive and all up to the teacher as a raw material, males remember their selves mostly as an active player of the team.

The most preferred metaphors of the both gender was mainly student centered ones. The female participant's most preferred metaphor were "child – family – parent" (53%) and the male participant's were voting most again for "player – team – coach" (52%) metaphor. So while loving and nurturing learning environment had a priority for female teacher candidates, male candidates firstly preferred active participation of their students and cooperation. In general, participants rated mostly for the student centered metaphors as the MRPEL and the MPIEL.

In overall, the first six MRPEL metaphors were mostly composed of student centered ones. These were raw material – factory – manufacturer (30 %) which was a teacher centered one and followed by player – team – coach (29%); child – family – parent (28%); flower – garden – gardener (27%); tourist – Island – guide (26%) which were all student centered, and finally race horse – hippodrome – jockey (23%) which was again teacher centered.

The five metaphors out of first six MPIEL metaphors were same with the most representative ones and again only two of the metaphors are teacher centered ones. These were: child – family – parent (51%); flower – garden – gardener (50%); player – team – coach (44%); tourist – island – guide (41%) which were students centered and raw material – factory – manufacturer (38%); patient – hospital – doctor (14%) which were teacher centered. The analysis of the metaphor choice of preservice teachers showing that they selected both teacher and student centered metaphors as most representative and most preferred but they selected mostly the student centered metaphors for both category.

The total ranking of MRPEL metaphors among the teacher centered metaphors with a descending order were: raw material – factory – manufacturer (30%); race horse – hippodrome – jockey (23%); soldier – army – commander (13%); passenger – bus – driver (13%); patient – hospital – doctor (11%); criminal – prison – guard (6%). The negative metaphors like army, prison were not selected so much. This means that majority of students didn't remember so much rules and absolute compliance or external control and punishment in their past educational life.

The MRPEL metaphors among the student centered metaphors with a descending order were: player – team – coach (29%); child – family – parent (28%); flower – garden – gardener (27%); tourist – Island – guide (26%); customer – restaurant –chef (3.9%); audience – circus – entertainer (3.4%). In this category two least rated metaphors were the ones which present teacher's role as pleasing the students by serving or entertaining.

Teacher centered metaphors are not rated so high as the MPIEL metaphors. In this category only the raw material – factory – manufacturer (38%) metaphor was rated high obviously. The other metaphors like patient – hospital – doctor (14%); passenger – bus – driver (9.4%); race horse – hippodrome – jockey (4.8%); soldier – army – commander (3%); and criminal – prison – guard (0.9%) were poorly rated. These ratings indicated that teacher candidates are not preferring teacher centered metaphors so much.

The MPIEL student centered metaphors regarding the ideal educational life image were: child – family – parent (51%); flower – garden – gardener (50%); player – team – coach (44.%); tourist – island – guide (41%); audience – circus – entertainer

(3.4%); customer – restaurant –chef (3%). Basically, the student centered metaphors in this category was preferred more compared to the teacher centered ones. Interestingly, the metaphors which defines teacher's role as pleasing the students by serving or entertaining is poorly rated as the most representative previous life metaphors. Almost half of the participants want to be like parents to their students to take good care of them and satisfy their individual needs as gardeners meet the needs of flowers.

To address the sub-problems 1.1 and 2.1 independent-samples *t*-test was used to figure out whether there was a the significant differences between male and female candidate's choice of metaphors regarding their past and preferred education life ($H_0$1.1 and . H_0 2.1). The results of this test confirmed that significant differences existed between male and female participant's ratings for two out of six teacher centered and two out of six student centered metaphors (for each comparison $p<0.005$) in both MRPEL and MPIEL metaphors. Table 4.2 reports the differences between the metaphor choices of male and female participants regarding their past and ideal education life coded as most representative (MR) and most preferred (MP).

Through out teacher centered metaphors, recorded mean responses revealed that regarding the MRPEL metaphors male teacher candidates selected "criminal – prison – guard" and "soldier – army – commander" metaphors significantly more than their female counterparts. Among student-centered metaphors as MRPEL, female participants selected "tourist – island – guide" metaphor significantly more than their male peers, while male participants rated "audience – circus – entertainer " metaphor more when compared to their female counterparts. With regard of MPIEL, male participants

preferred "criminal – prison – guard" and "race horse – hippodrome – jockey" metaphors (teacher centered) significantly more than their female peers while female participants selected the "tourist – island – guide" and "flower – garden – gardener" (students centered) more than their male peers. In overall, results are showing that both for past and preferred educational life, female participants had more tendency to vote for student centered metaphors.

Table 4.2 Gender Differences in Participant's Past Education Metaphor Images.

		Male (n=153)		Female (n=287)		*t*-test, *p* values
		X	SD	*X*	SD	
Teacher-centered metaphors						
Raw material – factory – manufacturer	MR	2.11	0.73	2.16	0.62	0.456
	MP	2,26	0.76	2.16	0.70	0.211
Criminal – prison – guard	MR	1.41	0.62	1.26	0.54	0.013**
	MP	1.06	0.23	1.04	0.26	0.562
Soldier – Army – commander	MR	1.83	0.67	1.64	0.68	0.005**
	MP	1.36	0.53	1.20	0.47	0.003**
Race horse – Hippodrome – Jockey	MR	1.76	0.78	1.89	0.75	0.073
	MP	1.41	0.63	1.26	0.50	0.009**
Passenger – Bus – Driver	MR	1.65	0.72	1.61	0.69	0.582
	MP	1.58	0.66	1.56	0.65	0.753
Patient – Hospital – Doctor	MR	1.70	0.71	1.60	0.65	0.146
	MP	1.76	0.75	1.66	0.66	0.168
Student-centered metaphors						
Tourist – Island – Guide	MR	1.82	0.80	2.00	0.72	0.018**
	MP	2.03	0.81	2.30	0.69	0.000**
Flower – Garden – Gardener	MR	1.96	0.74	2.01	0.74	0.443
	MP	2.26	0.76	2.42	0.66	0.022**
Child – Family – Parent	MR	2.07	0.75	2.02	0.69	0.498
	MP	2.37	0.67	2.42	0.67	0.429
Audience – Circus – Entertainer	MR	1.31	0.58	1.20	0.45	0.036**
	MP	1.26	0.49	1.33	0.54	0.166
Customer – Restaurant – Chef	MR	1.37	0.58	1.29	0.52	0.153
	MP	1.24	0.49	1.27	0.51	0.518
Player – Team – Coach	MR	2.16	0.72	2.06	0.65	0.136
	MP	2.37	0.71	2.25	0.69	0.082

MR= Most representative , MP= Most preferred, *X*=mean, SD= standard deviation
** significant (p< 0.05)

To answer the sub-problem 1.2 paired-samples t-test was conducted to investigate if there is a significant difference between teacher candidate's metaphorical images of past and preferred education life (H_0 1.2). The results showed that although selected metaphors in two category looked quite similar, significant differences existed between participant's ratings of these metaphors as the MRPEL and MPIEL. Table 4.3 compares the participant's metaphorical images of their past and ideal education life. With regard to teacher centered metaphors participants believed that the images of "guard" ,"commander", "jockey" and "doctor" represented their teacher in their past education life more when it was compared with their self-images in their ideal education life. Conversely, the images of "guide", "gardener", "parent", "entertainer" and "coach" represented the teacher candidate's teacher images in ideal educational life more compared with their images of their teachers in their past education life. In general, participants in this study believed that they would be more student centered and less teacher centered than their previous teachers.

To evaluate the null hypothesis of sub-problems 1.3 and 2.2, ANOVA test was conducted. The results of the test showed that there was no statistically significant difference between the most representative and most preferred educational life metaphors of secondary science teacher candidates and elementary science teacher candidates expect the "chef" metaphor. The elementary preservice science teachers rated this metaphor significantly more than the secondary science teachers as a most preferred metaphorical image.

Table 4.3 Comparing the Metaphorical Images of Past and Ideal Education Life

Metaphors				*t*-test, *p* values
		X	SD	Past
Teacher-centered metaphors				
Raw material – factory – manufacturer	Past	2.15	0.66	
	Ideal	2.20	0.72	NS
Criminal – prison – guard	Past	1.31	0.57	
	Ideal	1.05	0.26	0.000
Soldier – Army – commander	Past	1.70	0.69	
	Ideal	1.26	0.50	0.000
Race horse – Hippodrome – Jockey	Past	1.85	0.76	
	Ideal	1.31	0.56	0.000
Passenger – Bus – Driver	Past	1.63	0.70	
	Ideal	1.57	0.66	NS
Patient – Hospital – Doctor	Past	1.63	0.67	
	Ideal	1.70	0.70	0.017
Student-centered metaphors				
Tourist – Island – Guide	Past	1.94	0.75	
	Ideal	2.21	0.74	0.000
Flower – Garden – Gardener	Past	1.99	0.74	
	Ideal	2.36	0.70	0.000
Child – Family – Parent	Past	2.04	0.71	
	Ideal	2.40	0.67	0.000
Audience – Circus – Entertainer	Past	1.24	0.50	
	Ideal	1.30	0.52	0.032
Customer – Restaurant – Chef	Past	1.32	0.54	
	Ideal	1.26	0.50	NS
Player – Team – Coach	Past	2.09	0.68	
	Ideal	2.29	0.70	0.000

X=mean, SD= standard deviation, NS=not significant (p> 0.005)

4.2 Perception of teaching as a profession

4.2.1. Perception of professional identity

In this section prospective teachers perception of selves were analyzed by three different items in terms of 1) “the teacher as a knowledge expert”, 2) ”the teacher as a didactical expert”, 3) “the teacher as a pedagogical expert” (Beijaard, Verloop & Vermunt, 2000). As it was reported in Table 4.4, most of the participants agreed that their most important role as a teacher is to be a pedagogical expert by fostering student’s social, emotional and moral growth (92%). This item was rated 94% by females and 88% by males. The second item they agreed on most were teachers role of facilitating student’s learning as a didactical expert (89%). This item was rated 91% by females and 87% by males. The participants agreed less with the item defining teachers role as a knowledge expert. The item stating teacher’s most important role as dispensing knowledge were rated only by 35% of participants. This was the only item which was rated more by male participants (36%) when compared to female participants.

Regarding the null hypothesis of the sub-problem 3.1 and 3.2 one-way ANOVA was conducted. This test determined significant differences between male and female participant’s perception of professional identity. Results were showing that female participants agreed with the items regarding teacher’s role as a pedagogical (fostering student’s social, emotional, and moral growth) and didactical expert (facilitating student’s learning) more when compared to male participants. It is also reported in the results that secondary science teachers agreed on role of teachers was being a knowledge expert (transferring knowledge) significantly more than elementary science teachers.

4.2.2. Career choice commitment

This section is investigating whether participants are satisfied and convinced about choosing teaching as a career. The four different items of the questionnaire were used to figure out the prospective teacher's thinking about education as a life long career and their enthusiasm about starting to profession. Related results of the section is reported in Table 4.4. Regarding the null hypothesis of sub-problem 3.3, one-way ANOVA reported significant difference between male and female candidate's commitments about their career choice. The results have an interesting dispersal. More than half of the participants think that they didn't make the right decision by choosing teaching as a profession, only 40% percent of the prospective teachers say that they would choose to be a teacher again without any hesitation. This item was rated 45% by females and 40% by males and one-way ANOVA reported this result as a significant one. Majority of the participants think that teaching is a life long career for them (77%). This item was rated 81% by females and 69% by males and the difference between the agreement of two gender is significant. The majority of the participants (74%) looking forward to meet their first students. According to ANOVA results, female participants were significantly more enthusiastic about this when compared to their male peers. Only the 32% of the preservice teachers wish to choose another area of teaching and only for this item difference between male (30%) and female (35%) participant's choice were not significant. Overall results are showing that while male prospective teachers agreed more to choose teaching as a profession again when compared to their female counterparts, female participants were more enthusiastic about meeting their first students and also

agreed more that teaching is a life long career when compared to male participants. Without a gender difference, minority of the participants would like to choose another area of teaching.

Regarding the null hypothesis of sub-problem 3.4, ANOVA results showed that there is a significant difference between secondary science teacher candidates and elementary science teacher candidate's one of the commitments of career choice. Preservice elementary science teachers were significantly (0.014) more enthusiastic about meeting with their first students.

4.2.3. Orientations towards instruction

In this section teacher candidate's instruction orientations were analyzed in terms of "behaviorist", "constructivist" and " social constructivist". Overall, results are showing that most of the participants agree with constructivist and social constructivist instructional orientations. Constructivist statement saying that students learn more from asking questions than from listening to the teacher was rated by 92% of the participants. Social constructivist statement saying that students learn more through active participation in cooperative learning activities was selected by 83% of the participants, and behaviorist statement saying that students learn best through direct instruction was selected by 22% of the participants. To evaluate the null hypothesis of sub-problem 3.5, one-way ANOVA was conducted and indicated that there was a significant difference between the male and female participant's ratings regarding the social-constructivist item which was stating that students learn more through active participation in

cooperative learning activities. This item was rated 86% by females and 77% by males and the difference is statistically significant.

Related with the null hypothesis of the sub-problem 3.6, there was no statistically significant difference between the secondary science teacher candidates and elementary science teacher candidate's orientation towards instruction in terms of being "behaviorist", "constructivist" or "social constructivist".

4.2.4. Attitudes towards student's role in instruction process

In this section teacher candidate's thoughts were questioned about their future students in instruction process. With three different items their attitudes towards students were tried to figure out. Basically items were again related with candidate's orientation of defining their roles as a knowledge experts or didactical experts but this time it was analyzed by their definition of students. Results are showing that teacher candidates have positive attitudes towards students role in instruction process. Majority of candidates agree that "Students are active participants which discover and construct their own knowledge" (79%). The participation rate of females for this item were 81.9% whereas male's were 74%. The ones who agree that "Students are like empty tanks which are waiting to be filled with knowledge by teachers" were 29% out of all. This item was rated equally by females and by males (23%). Only 8.2% of the participants agree that as a teacher they can't do so much thing to improve the success of the students who are learning slow. This item was rated 5.5% by females and 12.5% by males. To answer the sub-problem 3.7 ANOVA was used and results revealed that there were significant

differences between male and female candidate's ratings of all three items regarding the attitudes towards student's role in instruction process. The female teacher candidates significantly agreed more that students were active participants of the instruction when compared to their male counterparts and also they agreed less that students were like empty tanks and there were not so much things to improve late learning students when compared to their male counterparts.

To evaluate the null hypothesis of sub-problem 3.8, ANOVA was conducted and results showed that there is no significant difference between secondary science teacher candidates and elementary science teacher candidate's attitudes towards student's role in instruction process.

Table 4.4. Perception of Teaching as a Profession

statements	Male Agree + strongly agree %	*X* (SD)	Female Agree + strongly agree %	*X* (SD)	Total Agree + strongly agree %	*X* (SD)
Perception of professional identity						
1.I believe that my most important role as a teacher is to dispense knowledge.	36.2	2.79 (1.23)	34.2	2.81 (1.14)	34.9	2.80 (1.17)
2. I believe that my most important role as a teacher is to facilitate learning.	86.8	4.11(1.04)	90.7	4.31 (0.95)	89.2	4.24 (0.98)**
3. I believe that my most important role as a teacher is to foster student's social, emotional ,and moral growth.	88.1	4.23 (0.93)	93.7	4.40 (0.82)	91.8	4.34 (0.87)**
Career choice commitment						
4. If I had to start all over, I would choose to be a teacher again without any hesitation	31.1	3.03 (1.28)	44.6	2,48 (1,07)	40.1	3.29 (1.24)**
5. I wish I would choose another area of teaching.	35.6	2.89 (1.33)	30.0	2.70 (1.29)	31.8	2.77(1.30)
6. For me, teaching is a life long career choice.	68.8	3.66 (1.18)	81.4	4.09 (0.99)	76.9	3.94(1.07)**
7. I look forward to meet my first students as a teacher.	66.4	3.66 (1.166)	77.7	4.06 (0.99)	73.6	3.92 (1.07)**
Conception of teaching as a profession						
8. I believe that teachings is a very difficult job to do well.	75.0	3.39 (1.25)	83.9	4.28 (1.09)	80.9	4.15 (1.16)**
Orientations towards instruction						
9. I believe that students learn best through direct instruction.	23.1	2.62 (1.06)	21.6	2.48 (1.07)	22.3	2.53 (1.07)
10. I believe that students learn more from asking questions than from listening to the teacher.	92.0	4.20 (0.71)	92.3	4.26 (0.75)	92.3	4.24 (0.74)
11. I believe that students learn more through active participation in cooperative learning activities.	77.0	3.92 (0.98)	85.7	4.14 (0.81)	82.8	4.06(0.88)**
Attitudes towards student's role in instruction process						
12. Students are like empty tanks which are waiting to be filled with knowledge by teachers.	39.7	2.71 (1.29)	22.7	2.37 (1.20)	28.5	2.49(1.24)**
13. Students are active participants which discover and construct their own knowledge.	74.4	3.82 (1.06)	81.9	4.08 (1.02)	79.4	3.99 (1.04)**
14. I believe that as a teacher I can't do so much thing to improve the success of the students who are learning slow.	12.5	2.08 (1.02)	5.5	1.76 (0.88)	8.2	1.88 (0.95)**

%=percentage, *X*=mean, SD= standard deviation
** = significant p<0.005 in comparing gender difference (ANOVA)

4.3 Reasons of choosing teaching as a profession

Table 4.3 represents the most influencing reasons for teacher candidates to choose teaching as a profession. These reasons are basically divided into three different group. These are extrinsic rewards like income, job security, summer vocations, other people's ideas, altruistic reasons like having positive influence on society, sharing knowledge with students, being a role model for students, and intrinsic motives like loving children, feeling a sense of calling for teaching. Other reasons were falling into teaching by mistake or not to know what else to do. Results showed that teacher candidates mostly had altruistic reasons to choose teaching as a profession. All of the altruistic reasons were rated over than 90%. The most rated two reasons were stating that teacher candidates want to contribute to future of the society (96%) and they want to share their knowledge with students (96%). Not surprisingly least rated reason were an extrinsic reason saying that teachers are paid quite well (4%). The extrinsic reasons which rated most were the one stating the long summer vocations of teachers (67%). Both male and females students agree on this item almost with same rate. The most rated intrinsic reason were love of children (84%). This item was rated 87% by females and 78% by males. The least rated intrinsic reason was sense of calling for teaching (46%) which was rated 48% by females and 42.5% by males. Falling into teaching by mistake was the reason of 19% of the participants and only the 8% of the participants choused teaching because of not being sure about what else to do.

The most influential reasons in all categories with a descending order were: 1) I want to contribute to the future of society (96%); 2) I want to share my knowledge with

children (96%); 3) I want to help children learn and succeed in society (96%); 4) I want to make a difference in children's lives (95%); 5) I believe that teaching is a sacred profession (92%); 6) I want to serve as a role model for children (91%); 7) I love children (84%); 8) I have a strong desire to work with children (80%); 9) Teaching has long holidays/summer vocations (67%); 10) Teaching is a highly respected profession in society(64%); 11) Teaching suits best to my personality (57%); 12) Teaching is advantageous when raising a family (55%); 13) Teaching offers good job security and a steady income (50%); 14) My past schooling gave me positive image of teaching (48%); 15) I feel a sense of calling for teaching(46%); 16) My employment after graduation is assured (42%); 17) Other people encourage me to become a teacher (36%); 18) I fell into teaching by mistake (19.%); 19) I was not sure what else I wanted to do (8%); 20) Teachers are paid quite well (3%).

In general, teacher candidates selected altruistic reasons as more important than extrinsic rewards and intrinsic motives and also participants rated the extrinsic rewards relatively more than the intrinsic motives. Regarding the sub-problem 4.1 one-way ANOVA revealed that there were significant differences between male and female participant's reasons of choosing education as a profession in terms of "altruistic", "intrinsic" or "external". Female participant's tendency to vote for all three categories of reasons when compared to their male counterparts were statistically more significant. It seems that female teacher candidates have more influential altruistic reasons, extrinsic rewards and intrinsic motives to choose the teaching as a profession.

To evaluate the null hypothesis of sub-problem 7.2, ANOVA test was applied

and results showed that there is statistically significant difference between secondary science teacher candidates and elementary science teacher candidate's reasons of choosing education as a profession only in terms of extrinsic reasons.

Table 4.5 Reasons for Choosing Teaching as a Profession

	Male Agree + strongly agree		Female Agree + strongly agree		Total Agree + strongly agree	
	%	*X* (SD)	%	*X* (SD)	%	*X* (SD)
Extrinsic reasons						
1. Teachers are paid quite well.	4.4	1.63 (0.89)	3.7	1.55 (0.77)	3.9	1.58 (0.81)
2.Teaching offers good job security and a steady income.	39.8	2.92 (1.19)	55.6	3.22 (1.18)	50.2	3.12 (1.19)
3. Teaching is a highly respected profession in society.	61.1	3.50 (1.13)	65.8	3.70 (1.04)	64.2	3.63 (1.07)
4. Teaching has long holidays/summer vocations.	67.4	3.55 (1.23)	67.2	3.58 (1.11)	67.3	3.57 (1.15)
5. My employment after graduation is assured.	36.3	2.78 (1.25)	45.2	3.04 (1.25)	42.1	2.95 (1.26)
6. Teaching is advantageous when raising a family.	40.6	3.07 (1.16)	62.1	3.48 (1.10)	54.8	3.34 (1.13)
7. Other people encourage me to become a teacher.	25.9	2.43 (1.28)	41.5	2.83 (1.40)	36.2	2.69 (1.37)
Altruistic reasons						
8. I believe that teaching is a sacred profession.	88.5	4.28 (0.96)	93.3	4.52 (0.79)	91.6	4.44 (0.86)
9. I want to contribute to the future of society	96.4	4.45 (0.75)	95.9	4.65 (0.67)	96.1	4.58 (0.70)
10. I want to help children learn and succeed in society.	95.0	4.35 (0.78)	95.9	4.59 (0.71)	95.6	4.51 (0.74)
11. I want to share my knowledge with children.	95.7	4.39 (0.75)	96.3	4.58 (0.70)	96.1	4.54 (0.72)
12. I want to make a difference in children's lives.	92.8	4.38 (0.81)	95.9	4.57 (0.72)	94.9	4.50 (0.76)
13. I want to serve as a role model for children.	89.2	4.27 (0.95)	92.6	4.48 (0.79)	91.4	4.41 (0.86)
Intrinsic reasons						
14. I feel a sense of calling for teaching.	42.5	3.28 (1.06)	48.3	3.41 (1.03)	46.3	3.36 (1.04)
15.Teaching suits best to my personality	49.2	3.39 (1.09)	60.8	3.68 (0.98)	56.9	3.58 (1.03)
16. I have a strong desire to work with children.	73.4	3.87 (0.89)	82.5	4.07 (0.86)	79.4	4.00 (0.87)
17. I love children.	77.7	3.98 (0.87)	87.0	4.21 (0.80)	83.8	4.13 (0.83)
18. My past schooling gave me a positive image of teaching.	46.8	3.22 (1.21)	48.7	3.28 (1.15)	48.1	3.26 (1.17)
Other reasons						
19. I fell into teaching by mistake	21.5	2.27 (1.30)	17.6	2.09 (1.21)	19.0	2.15 (1.24)
20. I was not sure what else I wanted to do	10.8	1.89 (1.10)	6.8	1.74 (0.93)	8.1	1.79 (0.99)

%=percentage, *X*=mean, SD= standard deviation, ** = significant $p<0.005$ in comparing gender difference (ANOVA)

Table. 4.6 t-test Regarding Reasons for Choosing Teaching

reasons	**male**		female		
	X	**SD**	*X*	SD	*t*-test, *p* values
Extrinsic reasons	19.89	4.43	21.43	4.37	0.001
Altruistic reasons	26.13	4.10	27.44	3.70	0.001
Intrinsic reasons	17.75	4.07	18.70	3.71	0.019
Other reasons	4.16	2.02	3.82	1.68	0.073

X=mean, SD= standard deviation
** = significant p<0.005 in comparing gender difference (ANOVA)

4.4 Summary of the Results

- Preservice elementary and secondary science teachers remembered their past education experiences both with teacher- and student-centered metaphors.
- Preservice elementary and secondary science teachers preferred mostly student centered metaphors as an image of ideal education life and rated most for the Child – Family – Parent metaphor.
- Most of the preservice teachers perceive their professional identity as being a pedagogical expert by fostering student's social, emotional, and moral growth (92%).
- With regard to their career choice commitments, although less than half of the participants state that they would choose teaching again with out any hesitation, most of them see teaching as a life long career. The most of the participants

looking forward to meet their first students. Only the 32% of the candidate teachers wish to choose another area of teaching.

- Participants rated highest (92%) for the constructivist statement saying that students learn more from asking questions than from listening to the teacher of the participants. Social constructivist statement saying that students learn more through active participation in cooperative learning activities was rated as second most item (83%), and behaviorist statement saying that students learn best through direct instruction was rated least (22%).
- Teacher candidates have positive attitudes towards students role in instruction process. Majority of candidates agree that "Students are active participants which discover and construct their own knowledge" (79%). Only 29% of the participants think that students are like empty tanks which are waiting to be filled with knowledge by teachers. Only 8.2% of the participants agree that as a teacher they can't do so much thing to improve the success of the students who are learning slow.
- Teacher candidate's most important reasons to choose the profession was altruistic reasons, later extrinsic rewards and finally intrinsic motives.

CHAPTER V

DISCUSSION

The aim of the present study was to investigate preservice elementary and secondary science teacher's perception of their professions and reasons of choosing teaching as a profession with independent variables (gender and teaching area). The results of the study were presented in the previous chapter. Thus in this chapter, the findings are discussed under main headings.

5.1 Preservice Science Teacher's Perception of Their Profession by Metaphors

As Mahlios and Maxon (1998) stated, preservice teachers have their well defined ideas about students and classroom and how their images of themselves as teachers relate to children, curriculum and teaching. These ideas are mainly influenced by their past educational histories as students (e.g., Bramald et al., 1995). Ben-Peretz, Mendelson and Kron (2003) reported in their study that preservice teachers' self images in turn influences their teaching strategies and behavior in classroom. So, to define the preservice teachers' perception of selves is a way of defining their potential classroom activities and indirectly to define the quality of education which they will give in next years.

Inbar (1996) states that metaphors are one of the most potent devices to reflect

people's beliefs which are formed by their own reality. Researchers like Mahlios and Maxon (1998), Inbar (1996), Saban (2003, 2004) pointed out in their studies that metaphors are the powerful tools to analyze preservice teachers' ideas and beliefs about their profession.

Present study provides an important data on secondary and elementary science teachers' metaphorical images of their past and preferred education lives. This data allows us to make interpretation about preservice teacher's ideas and beliefs about their professional roles and how they perceive their future students and classroom environment. This information gives us clues about their potential classroom activities and indirectly the quality of future education. It is also possible to derive some information about the current situation of Turkish education by utilizing the participants' data on most representative past education life metaphors.

According to the results of the study, preservice science and elementary teachers remember their past education lives both with student- and teacher-centered metaphorical images. The four out of first six highest-rated MRPEL metaphors were student-centered ones. Although female students voted highest for a teacher-centered metaphor, both female and male participants have more tendency to select student-centered metaphors as representative of their past education life. This result was not supporting the results of Saban's studies (2003, 2004) conducted with both entry level and exit level preservice elementary teachers in Turkey. In his studies, researcher reported highly teacher-centered results as representative of participants' past education life. Saban (2003, 2004) interpreted his results as being Turkish education systems

highly teacher-centered. However, when the metaphors choices of participants in the present study are analyzed, it is possible to say that preservice teachers who experienced the Turkish education system do not find it very teacher-centered. While some remember their past educational life as being in a factory or in a hippodrome (teacher-centered), many other remember it as being in a family, in a garden, in an island or in a team (student-centered). This result of the present study was unexpected when it is compared with the results of Saban's study (2003). It was expected that results will support the Saban's (2003, 2004) study which were realistic for the current situation of Turkish education system. The possible reason for this might be that the participants of the present study were senior students. They already spent at least three years (or four) in teacher education program and learned a lot about the theories. By knowing what would be right, they might loose their objective way of thinking while they remember their past experiences. However, this argument gets weak because of the fact that, the second study of Saban (2004) was also conducted with senior presevice teachers (exit level) and the result was not similar to the present one. So, the possible reasons of this difference point the need for further research about this subject in Turkish context. On the other hand, the results regarding the MRPEL metaphors of the present study was consistent with the results of Mahlios and Maxon (1998) carried out in the US. In their study, researchers figured out that both elementary and secondary preservice teachers remembered their secondary school experience with a variety of teacher- and student-centered metaphors as being in a family, or on a team (student-centered) and as being in a crowd, in a factory or in a prison (teacher-centered). Even if the metaphors and are not

exactly matches, students choice of remembering past educational life both with student-centered and teacher-centered were same. Besides, the first choices of male and female students' MRPEL metaphor in the present study have to be taken into account. While female preservice teachers remembered their school as factory, their teacher as manufacturer and their selves as raw material, male preservice teachers remembered their school as a team, their teacher as a coach and their selves as a player. This result was quite interesting because of the nature of these two metaphors. Factory metaphor is defining student in a very passive way and the teacher as highly skilled. However, team metaphor which defines the student as an active participant who is acting by his/her own will and with the guidance of the teacher as a coach, was almost the opposite of factory metaphor.

Interestingly, the five metaphors out of first six highest-rated MPIEL metaphors were same with the highest-rated MRPEL ones and again only two of the MPIEL metaphors were teacher-centered ones. Also male participants' choice of MRPEL and MPIEL metaphors were same (Player-team-coach). This might mean that participants of the present study prefer a similar type of future education to their past educational experience. This finding is not consistent with the study of Saban (2003, 2004). However, participant's preferences of metaphor were more focused and each MPIEL metaphor was rated by a higher percentage compare to the MRPEL. Consistent with the studies of Saban (2003, 2004), Mahlios and Maxon (1998) and Martinez, Sauleda and Huber (2000) the preservice teachers in the present study preferred student-centered metaphors more than teacher-centered ones. This is good news because, as Martinez,

Sauleda and Huber (2000) stated in their study that influence of metaphors on education is immense and atmosphere in the classroom is related to the teacher's favored education metaphor. So, when today's preservice teachers start teaching, their classroom activities will be student-centered.

5.2 Presevice Science Teachers' Perception of Teaching as a Profession

As Kagan (1992) states in his study that teachers' beliefs: (1) are stable and resistant to change, and (2) that they reflect the nature of the instruction the teacher provides the students. This argument emphasizes the importance of investigation of preservice teachers' perception of their profession. As Beijard, Verloop and Vermunt (2000) stated in their study that teachers' perceptions of their own professional identity affect their professional development as well as their ability and willingness to cope with educational change and to implement innovations in their own teaching practice.

Present study was also investigating the topics like preservice science teachers' perception of their professional identity, instruction, students' role in instruction and their career choice commitments. The participants' ideas about all these topics were giving information about their perception of teaching as a profession. Regarding the preservice science teachers' perception of their professional identity, results' of the present study were consistent with some part of the literature. In the studies of Saban (2003) and Beijard et al. (2000), the participants saw themselves as a combination of subject matter experts, didactical experts and pedagogical experts. In study of Beijard et al. (2000) subject matter expertise and didactical expertise appeared to be most and

equally present in the teachers' perceptions; this was not particularly the case for pedagogical expertise but its rating was still high. In the study of Saban (2003), more that 95% of the participants agreed both with teachers' didactical and pedagogical role. The subject expert role of teacher was rated again high (78%) but less when it is compared with the other two roles. In both of these studies all three roles of the teacher was highly rated. However, in the present study, while almost more than 85% of the participants were rating for both pedagogical and didactical role of teacher, only 35% of them find the didactical expert role of teacher important. The rejection of this role was as important as participants' strong choice of other two roles. These results of the study are quite important because changing teacher' classroom behaviors and practice requires changing their conceptions of their roles in the classroom (Tobin & Tippins, 1996). Consistent with the study of Saban (2003), participants of the present study rated quite high for the pedagogical and didactical role of teachers. In consistent with the study of Saban (2003), the female participants of the present study rated pedagogical and didactical role of teacher more than male participants. Interestingly, secondary science teachers agreed on role of teachers was being a knowledge expert (transferring knowledge) significantly more than elementary science teachers. The reason might be that because they are going to teach specific subjects (biology, chemistry and physics) and they think that it is necessary to know their subject good enough.

Regarding the career choice commitments of the participants, the result of the present study has interesting findings. While more than half of the participants think that it was not the right choice to choose teaching as a profession, majority of them think that

teaching is a life long career (77%). This conflict sound like they made a mistake which they cannot change and have to live with rest of their lives. The strict style of the university entrance exam in Turkey might be the reasons of this conflict. On the other hand, majority of them look forward to meeting their first students. In the study of Saban (2003), participants showed more positive commitments about their career choices. More than 75% of the participants agreed on teaching being the right and a life long career choice for them and they were enthusiastic about meeting their first students. In general, it is difficult to make an interpretation about the difference between the choices of two genders. While male participants agreed significantly more with teaching being the right career choice for them when compared with the female candidates, female candidates agreed significantly more with teaching being a life long career for them. The female participants were also more enthusiastic about meeting their first students than their female counterparts.

About instruction orientations, consistent with the study of Saban (2003) majority of the participants (more than 80%) agreed on constructivist and social constructivist theories of instruction. However, while the participants in the study of Saban (2003) was rating still high for the behaviorist theory of instruction (even it was less voted than other two theories), the participants of the present study reject the behaviorist theory by voting only 22%. This is an important result, because it shows that the effort of teacher education programs to minimize the behaviorist style of the instruction which dominated the field of education for the most of the past century (Holt-Reynolds, 2000) seems to work with the help of preservice teachers who are going

to teach soon. Supporting their orientations of instruction, participants of the study also has a positive attitude towards the role of students in instruction.

5.3 Presevice Science Teachers' Reasons of Choosing Teaching as a Profession

Existing literature on preservice teachers' reasons of choosing teaching as a profession indicates different reasons. Although it is believed that most of the teachers have altruistic or intrinsic reasons for choosing the teaching profession, many studies (Yong, 1995; Saban, 2003; Kyriacou et al., 2000, 2003; Akyeampong & Stephens, 2002; Su, 1997) in literature showed that main motives for choosing teaching are not always altruistic or intrinsic. The reasons, encouraging students to choose teaching profession are changing over time (Synder, 1995) and from country to country (Saban, 2003).

In the case of present study, the participants strongly agreed with the altruistic reasons. All the items stating an altruistic reasons was voted more than 90%. Traditionally, altruistic reasons were selected most and followed by extrinsic and later by intrinsic reasons in the present study. This result might be interpreted like, job satisfaction for school teachers tend to rest heavily on the affective and interpersonal rewards they derive from working with children and helping them to learn (Saban, 2003). On the other hand, as Hatch (1999) signaled vulnerability of teachers depending on the relationship with students for their sense of professional fulfillment because he claims that new teachers with the highest commitment to the altruistic and intrinsic rewards of working with children may be at the most risk of leaving the profession (or becoming burned-out) when they face the daily realities of teaching job.

Consistent with the expectation, the salary was not a reason to choose teaching as a profession in Turkey differently from the case in Zimbabwe and Cameroon (Yong, 1995). Not consistent with the case in Cyprus (Papanastasiou, 1998), less than half of the participants of the present study believe that their employment after graduation is assured.

Similarly, consistent with the study of Saban (2003) and Su (1997), most influential reasons out of all was the wish of contributing the society. This result of the study is hopeful, because it shows that preservice teachers who will teach in near future have an idealistic view of their roles in society.

For the participants of the present study, intrinsic reasons were less influential than extrinsic reasons. Yong (1995), reports that teachers' career will be very much improved if they are encouraged to focus on intrinsic rather than extrinsic aspects of the job and they will be more committed to teaching if it provides them job satisfaction. It has also been shown that fulfillment of altruistic intentions alone may not be totally satisfying (Joseph & Green, 1986; cited in Yong, 1995).

CHAPTER VI

CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

In an effort to inform teacher education practices, this study explored the preservice elementary and science teachers' perception of their professions and their reasons of choosing teaching as a profession. For exploring the preservice teachers' perception, metaphors used as a research tool. In this chapter, the research findings are summarized and in the light of these findings some implications for practice and further research on the concern of preservice teachers' perception of their professions and reasons of choosing teaching as a profession are put forward.

6.1 Conclusion

To figure out the preservice science teachers' perception of their profession, the images they carry about their past educational life and ideal educational life was analyzed by metaphorical images. The results revealed that participants of the present study remembered their past education life both with teacher- and student-centered metaphors. Regarding the metaphorical images that they carry about an ideal educational life, results revealed that they preferred again both teacher- and student-centered metaphors but they voted significantly more for the student-centered metaphors. The analysis also indicated that, female preservice teachers prefer some student-centered

metaphors significantly more than their male counterparts.

According to the results, most of the participants defined their professional identity as being pedagogical and didactical expert. The participants were not so clear about their career choice commitments. While less than half of them would choose teaching again with out hesitation, more than half of them were stating that teaching is a life long career for them. On the other hand majority of preservice teachers looking forward to meet their first students. About their instructional orientations, participants of the present study were mostly constructivist and social constructivist. They rejected the behavioral theory of instruction by voting significantly less than constructivist and social constructivist theories.

Regarding preservice science teachers' reasons of choosing teaching as a profession, results of the present study showed that most of the participants has altruistic reasons (e.g. to contribute the future of society) to choose the profession. Secondly they had extrinsic reasons (e.g. long summer holidays) and thirdly they had intrinsic reasons (e.g. love of children).

6.2 Implications

The analysis of literature showing that preservice teachers have their well defined ideas about students and classroom and how their images of themselves as teachers relate to children, curriculum and teaching and these ideas has an immense effect on their performance (Bullough et al., 1992, Mahlios & Maxon, 1998). Teacher education programs need to analyze the perceptions of their teacher education students

regarding their roles as professionals and develop strategies to enhance positive perceptions. This study has the following implications:

- Teacher education programs need to define the prior perceptions of every new comer preservice teacher regarding the education, teaching as a professional role and their reasons to choose teaching as a profession. The courses and the curriculum has to be arranged to built positive perception of teaching as a profession. By conducting the studies like the present one, the changes in their perceptions during the teacher training can be monitored for feedbacks to the teacher educator.
- As also Haritos (2004) suggests teacher education program must provide self-awareness and reflection exercise that allow candidates to identify their teacher role beliefs and perceptions regarding the challenges teachers face in the classroom and explain the reasoning behind such beliefs .
- It is important for teacher educators to support the preservice teachers for developing positive and realistic teacher role beliefs. The use of metaphors during teacher training programs may provide preservice teachers to see their perception of educational concepts better. Especially, the use of student-centered metaphorical images during courses may stimulate preservice teachers to built and improve possitive conceptions about teaching.
- Preservice teachers has to be provided with abounded number of classroom field experiences which allow them to apply newly learned theories and construct, development and teaching in context, test their prior beliefs and evaluate their teaching concerns with respect to realities of classroom. (Haritos, 2004).

6.3 Recommendations

The recommendations to the researchers who would like to study a similar subject are:

- To improve the analysis of the metaphorical images, open-ended questions and interview techniques has to be used.
- This study should be conducted both with freshmen and seniors to view the difference between them. It would be also very meaningful to conduct the same study with in-service teachers.
- The variation of the perceptions should be monitored across years as a long term study.
- Effects of the variables, like past experiences or practice teaching, on perception of profession should be analyzed.

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