A STUDY OF TEACHER EDUCATORS' PERSPECTIVES REGARDING CHANGES IN 1982, 1998 AND 2006 IN TEACHER EDUCATION IN TURKEY

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ABSTRACT

A STUDY OF TEACHER EDUCATORS' PERSPECTIVES
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Investigating the teacher education phenomenon of mathematics teacher education through the perspectives of teacher educators was aimed in this study. It was designed to understand the problems and the needs of teacher education in Turkey, to conceive the imperatives of the reforms mathematics teacher education reforms, namely 1982 reform, 1998 reform, and 2006 reform, and to determine whether these reforms satisfy the existing needs in Turkey.

Based on the principles of qualitative research methods, documents of mathematics teacher education programs were investigated after the date when teacher education has been replaced under universities. As a second data collection tool, interviews with past and present deans of the education faculties, department chairs of mathematics education departments, and the academic staff were conducted.

The data collected were analyzed through qualitative data analysis methods and the meanings and importance of the imperatives, processes, and consequences of the reforms were explored as well as the problems and the needs of teacher education in Turkey and solutions for them were investigated.

The findings of this study showed that mathematics teacher education took a great step after establishing education faculties under universities in 1982. However, it has to be

improved in order to eliminate the problems and the needs of teacher education in Turkey. It was expected to develop a source for the future teacher education reforms while paying attention to the imperatives and the consequences of educational changes in 1982, 1998 and 2006, and to be beneficial to generate a Turkish teacher education framework.

Keywords: Teacher education, teacher education reform, mathematics teaching education program

ÖZ

ÖĞRETMEN YETİŞTİRİCİLERİNİN BAKIŞ AÇILARININ İNCELENMESİ:
1982, 1998 VE 2006
ÖĞRETMEN EĞİTİMİ REFORMLARI

Kurt, Gamze
Yüksek Lisans, İlköğretim Fen ve Matematik Alanları Eğitimi Bölümü
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Eğitim enstitülerinin 1982 yılında YÖK kararıyla beraber eğitim fakülteleri olarak üniversitelere bağlanmasıyla öğretmen eğitiminde araştırmalara başlanmış oldu. Öğretmenlik bir meslek, eğitim de araştırmalarla desteklenerek geliştirilebilir bir bilim olarak algılanmaya başladı. Eğitimci yerine öğretmen yetiştirmeye olan bu dönüşüm, bu çalışma için de bir ilham kaynağıdır. 1982 yılında yapılan bu reformu başlangıç kabul ederek, 1998 ve 2006 reformları da o tarihten bugüne yapılan önemli matematik öğretmen eğitimi reformlarıdır.

Çalışmada, Türkiye'de öğretmen eğitimin ihtiyaçları ve bu ihtiyaçları gidermek için neler önerebileceği, matematik öğretmen eğitimi reformlarının gerekçeleri, sonuçları ve bunların var olan ihtiyaçları hangi ölçüde karşıladıkları incelenmiştir.

Nitel araştırma yöntem ve ilkeleri temel alınarak, belirlenen üniversitelerin eğitim fakültelerinin geçmişte görev yapmış ve şu anda görev yapan fakülte dekanları, bölüm başkanları ve öğretim üyeleri ile birebir görüşmeler düzenlenmiştir. Ayrıca, MEB Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü'nden çeşitli yetkililerle görüşmeler yapılmıştır. Yukarıda belirtilen amaçlar doğrultusunda öğretmen eğitiminin üniversiteler bünyesinde toplanarak 4 yıla çıkarıldığı tarihten (1982) bu yana Orta Doğu Teknik Üniversitesi Eğitim Fakültesi'nde uygulanan matematik öğretmen eğitimi programları, yapılan reformların gerekçeleri, sonuçları ve alınan kararların bu programlara nasıl yansıdığı bazında incelenmiştir.

Bulgular, nitel veri analizi yöntemleri doğrultusunda incelenmiştir, Türkiye'de öğretmen eğitiminin ihtiyaçları, sorunları ve bu doğrultuda ileri sürülen önerilere ek olarak, 1982, 1998 ve 2006 yıllarında yapılan matematik öğretmen eğitimi reformlarının gerekçeleri ve sonuçlarının anlamı ve önemi ortaya çıkarılmıştır.

Çalışma sonuçları 1982 yılında eğitim fakültelerinin kurulmasıyla birlikte Türkiye'de öğretmen eğitimi tarihinde büyük bir adım atıldığını, fakat ileri sürülen sorun ve ihtiyaçlar göz önüne alınarak gelişmeye hala ihtiyaç olduğunu göstermektedir. Katılımcıların bakış açıları doğrultusunda, ortaya çıkarılan 1982, 1998 ve 2006 reformlarının gerekçeleri ve sonuçları, gelecekteki öğretmenlerin yetişmesinde gerçekleştirilecek reformlarda ve Türkiye öğretmen yetiştirme olgusu için bir genel çerçeve hazırlamada bir kaynak oluşturacaktır.

Anahtar Kelimeler: Öğretmen yetiştirme, öğretmen eğitimi reformu, matematik öğretmeni yetiştirme programı

To *Mustafa Kemâl ATATÜRK*

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CHAPTER 1

INTRODUCTION

Teaching has always been discussed in Turkey for whether it is a profession or not from the very beginning of the Turkish teacher education history. Because of the changing ideas on teacher education regarding this discussion, teacher education institutions have always been changed in history in terms of both structure and content. In the past, teacher education was considered as a so-called job that anyone can teach and people were given the chance to become a teacher after their elementary education. As time passes, the education level of teacher education was upgraded and its duration was increased considering the changing needs of the country and integrating political acts.

In 1973, the Fundamental Law of National Education (Milli Eğitim Temel Kanunu) was released including the item that teaching was a profession, it required some certain professional skills, and therefore teachers should be trained at the higher education level.

The concept of "professional" has three major dimensions which are knowledge, autonomy, and responsibility. The dimension of knowledge means the knowledge acquired in some certain educational training, and then this knowledge should be practiced within training (Furlong et al. 2000). This knowledge of the profession should be produced through scientific techniques and it should be based on some certain case studies and theoretical frameworks. The body of autonomy is the unpredictable nature of profession during implementation of gathered professional knowledge through training. Because of this nature, professional knowledge should also include the professional practice as much as possible (Hoyle & John, 1995, cited in Furlong et al., 2000). If the autonomy has the right to decide own choices on public, then it is called as "licensed autonomy" (Dale, 1989, cited in Furlong et al., 2000). The third dimension is responsibility which shows that professionals feel themselves responsible while acting with their own decision in unforeseen cases (Furlong et al., 2000). Having these dimensions, teaching is also accepted as a profession and teachers then should be trained to gain professional knowledge similar to the other professions such as medicine or law. Besides these dimensions of teaching profession, teachers are also

expected to have strong relationships with their students different than other professional-client relationships considering that students play a client role for teachers. However, they are not trained to manage establishing such kind of emotional relationships during their training without falling back on the curriculum which they expected to teach at schools. Although this argument sounds like that teacher preparation could be meaningless or useless, teacher education programs are searching for the answers to solve the problems related to the effects of teachers as human in these unpredictable and emotional situations. Considering these dimensions, emotional side, and the unpredictable nature, teaching profession does not seem to be an easy job (Labaree, 2000).

In England, since teachers abused their profession in the late 1980s, teaching profession began to seem to have de facto autonomy rather than licensed autonomy. Because of this, teacher education was thought to be arranged as "regulated" and reform makers in England wanted to re-professionalize it (Dale, 1989, cited in Furlong et al., 2000). Then, more policy was involved in teacher education. However, teacher re-professionalism conflicted with the issue of being professional because of the changing nature of knowledge side of profession.

If teaching is the act of making unique judgments in different settings, then teacher education itself has to change (Wilson & Ball, 1996). Therefore, teacher education was considered important since teachers needed the knowledge which "can only be widely acquired through the teaching force by major reforms of teacher preparation and major restructuring of the systems" (Darling-Hammond & Sclan, 1996, p.67, cited in Wilson & Ball, 1996) by which several agencies were involved in training, recruiting, and supporting teachers. This change should also address the several incorrect conjectures about teaching as a profession which generated its fundamental dynamics. Since teaching was generally perceived as an issue of innate abilities, it was claimed that it did not need to have a professional education. Secondly, teaching had not been considered to have a continuous learning. Thirdly, because of the changing nature of professional development, there was not a stable infrastructure for teacher professionalism. Therefore, it could not be under the responsibility of only one of the agencies, which meant "it happens everywhere – and hence lacks consistency, coherence and curriculum" (Ball & Cohen, 1999, p.4). Considering these misperceptions about teaching, Ball & Cohen (1999) suggested that professional education of teaching should serve a consistent content which would provide the prospective teachers with not only the knowledge and skills to be able to teach but also the encouragement to implement them in the workplace. In addition to this, prospective teachers should acquire the power for fighting with traditional school settings that they would face in their teaching practice period.

1.1. History of Teacher Education in Turkey (1982 – present)

In 1982, a major movement in teacher education system took place and all teacher education institutions have been gathered under the Higher Education Council (HEC). Before this date, the teacher education institutions were controlled by the MNE not only in terms of academics issues, but also administration (Şaban, 2003). After implementing this new law, prospective secondary school teachers were expected to acquire their education in 4 years, while elementary school teachers were expected to complete their education in 2 years (Binbaşıoğlu, 1995; Gürşimşek, Kaptan & Erkan, 1997). In 1989, the duration of undergraduate education of teachers at universities was decided as 4 years for both elementary and secondary level teachers. This new reform held elementary education departments at universities responsible for the education of elementary school teachers (Çakıroğlu & Çakıroğlu, 2003).

In 1997, the duration of compulsory elementary education increased from five years to eight years. Consequently, in order to meet the needs of this new education system, new implementations for the education faculties were initiated. From the beginning of 1998, all education faculties were required to follow a standardized curriculum mandated by HEC (YÖK, 1998). Undergraduate programs now offer courses in three main domains which are general culture, special subject training, and pedagogy. Thirty credit hours are devoted to pedagogical preparation (including teaching practices) in the curriculum (152 credits of whole), in which 109 credits are for the courses like Turkish teaching, mathematics teaching, science teaching, social studies teaching, or art teaching and the remaining 13 credits are for the general culture domain (Şaban, 2003).

1.2. History of Elementary Mathematics Teacher Education in Turkey

Twelve mathematics education departments were founded in order to educate the secondary mathematics teachers in the newly established education faculties between 1982 and 1990 and the number was increased to 26 before 1998 (Aydin, 1990; Işıksal, Koç, Bulut & Atay-Turhan, 2007). Those departments did not use a standard curriculum and were training mathematics teachers for both elementary and secondary levels of education through four years of education. After the 1998 reform and with the initiation of the elementary mathematics education departments, 28 elementary mathematics education departments and 12 secondary mathematics education departments were established. The graduates of elementary mathematics education departments have the right to teach through the grade levels from 4 to 8 in elementary schools, but they are only appointed for the levels through 6 to 8 in public schools (Işıksal et al., 2007). In 1998, all education faculties started to use a standard curriculum. This curriculum was used between the years 1998 and 2006. And, with the reform in 2006, the curriculum of elementary mathematics education has been revised.

While some of the courses have been removed, some other courses have been added. These changes will be presented in the findings chapter in detail. In 2006 reform, HEC also introduced the implementation of starred courses. Starred courses are the courses which education faculties could decide whether they are capable enough or not in terms of the field of their teaching staff.

The current elementary mathematics teacher education program serves courses in subject-matter knowledge, pedagogical content knowledge, and general culture areas. While subject-matter knowledge courses include mathematics and science courses, pedagogical content knowledge courses include methodology courses for teaching the content, classroom management, teaching experience, and school practice. General culture courses are the courses which offer fundamental information on some areas such as Turkish history, Turkish language, computer literacy, and foreign language.

1.3. Purpose of The Study

This study attempted to present an understanding of elementary mathematics teacher education in Turkey with the evaluation of the reforms since 1982 through what were done, why these actions were done, and how they will influence the future actions in teacher education movements by teacher educators.

Specifically the following research questions were sought in this study:

1. What are the problems of teacher education in Turkey from the perspectives of teacher educators and the suggestions they generated for the solution of those problems?
    1.1. What are the problems of teacher education from the teacher educators' perspectives?
    1.2. What are the suggestions which teacher educators generated based on their perspectives?
2. What were the imperatives for 1982, 1998, and 2006 reforms in Turkey from the perspectives of teacher educators?
    2.1. What were the imperatives for the 1982 reform?
    2.2. What were the imperatives for the 1998 reform?
    2.3. What were the imperatives for the 2006 reform?
3. What were teacher educators' perspectives on the extent to which 1982, 1998, and 2006 reforms have met the needs of teacher education in Turkey?
    3.1. What were the perspectives of teacher educators on the extent that 1982 reform has met the needs of teacher education in Turkey?

3.2. What were the perspectives of teacher educators on the extent that 1998 reform has met the needs of teacher education in Turkey?

3.3. What were the perspectives of teacher educators on the extent that 2006 reform has met the needs of teacher education in Turkey?

The study investigated these questions through interviews with teaching staff of education faculties and a participant from the Department of Teacher Education in Ministry of National Education, and the elementary and secondary mathematics teacher education program documents used in the Faculty of Education at Middle East Technical University. Participants' perspectives about teacher education reforms were gathered through the interviews and they were used to understand the implementation of the reforms in teacher education in Turkey. It was also aimed to understand how teacher education reforms were reflected on elementary and secondary mathematics teacher education curricula since 1982 regarding the needs and problems.

1.4. The Significance of The Study

This study will be the first investigation of elementary mathematics teacher education regarding the reforms in 1982, 1998 and 2006 in terms of the effects of the implementation of the reforms on mathematics teacher education curricula. Based on the perspectives of teacher education agencies which are education faculties, Higher Education Council (HEC) and Ministry of National Education (MNE) in Turkey, three basic reforms in 1982, 1998 and 2006 were investigated. Regarding that these agencies are both developers of the mathematics teacher education programs as well as implementers of them, referring to their points of view about these reforms is important.

Considering that the quality aspect of being a teacher has been a major concern with the establishment of education faculties, the changes in teacher education in 1982, 1998 and 2006 have played a major role in the efforts to increase the quality which is worth to do research. As most of the studies emphasized that teacher education programs should be revised and updated according to the needs of the society (Kızılçaoğlu, 2005; Bulut, 1999; Şimşek & Yıldırım, 2001; YÖK, 1998), this study could serve as a guide for the future teacher education reforms.

The most important idea during the investigation of the teacher education issues in Turkey was to create an overall understanding with its constraints. This might be helpful in order to create a theoretical background and to draw the highlights of teacher education framework in the future.

1.5. The Definitions of Related Terms

Throughout this study "policy" was used as in the following definition: "Policy that is announced through legislation is also reproduced and reworked over time through reports, speeches, moves, agendas and so on. Therefore, policy is not treated as an object, a product or an outcome but rather as a process, something ongoing, interactional and unstable" (Ball, 2008, p.7). Ball (2008) also addressed the significant differences between educational policy and policy itself as in the following: "education policy has always been about reform, about doing things differently, about change and improvement. Policy is an enlightenment concept, it is about progress, it is about moving from the inadequacies of the present to some future state of perfection where everything works well and works as it should" (p.7). In this context, educational reform refers that it is "not just about changing the way things are organized or done; it is about changing teachers and learning, and educational institutions and their relations to the economy (and to information and communications technology) and to international economic competitiveness. It is about rethinking or reimagining education" (Ball, 2008, p.8). In addition to these explanations, all efforts to change the form of education politically or structurally could be said as an educational change without considering its domain. Regarding this specific identity of educational change, Fullan and Hargreaves (1992) explained the relationship of teacher education to educational change that "it is not just a matter of better implementation of selected innovations (although it includes this) but more basically a change in the profession of teaching, and in the institutions in which teachers are trained and in which they work" (p.6). Based on all of these definitions, it could be derived that educational change or *change* itself covers all of the efforts which would be named as reform, revision, or regulation.

What Fullan (2005) indicated as factors regarding teacher education reform were individual and institutional development. Individual development means that individuals must develop themselves in terms of their capabilities and they should be able to discuss with the people who disagree with them whereas institutional development means that teacher educators should learn how to handle with the variety of the changes (Fullan, 2005).

Taking into consideration all the aspects of teacher education, this study focused to investigate the teacher education reforms since 1982 considering the imperatives of them and their assessment on their capability and effectiveness on how they met with the current needs regarding specifically the elementary mathematics teacher education in Turkey.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter presents a review of related literature on teacher education. First, it will start with the underlying constructs of teacher education and four main factors that construct teacher education. These factors are diversification and selectivity; subject matter and pedagogy; university and multiple sites; and regulation and deregulation which were introduced firstly by Cochran-Smith (2005). Second, the parts forming the teacher education will be explored. Teacher education has three major warrants which are political warrant, evidentiary warrant and accountability warrant. These pieces can be seen as reasonable base (Cochran-Smith, 2001) to understand the common sense of teacher education.

After exploring teacher education and its constructs, these issues will be sought in the case of Turkey. This is limited to the time period since 1982 when teacher education is united under universities. Brief information about the history of teacher education in Turkey starting from 1982 will be provided for the enrichment of understanding the issues in Turkish context. Then, the most important problems of teacher education in Turkey will be discussed. Çakıroğlu and Çakıroğlu (2003) introduce these problems in two major categories: the problems which are directly affecting the teacher education overall the country and the problems of teacher education related with its structure. The teacher education problems are population, political issues, teachers, and admission. The structural problems are related with curriculum and relevance. A summary will follow at the end.

2.1. Factors Influencing Teacher Education Programs

Teaching as a profession needs professional education that has three major elements: First, professional education of teaching needs a well-organized professional practice which provides the responsibility or efficiency of teaching. Second, professional education of teaching should be based on pre-determined goals on which the curriculum, pedagogy, and facilities could be specified. Third, frameworks are needed to shape the organization and make the arrangement on how to implement these practices and content issues on

professional education of teaching (Ball & Cohen, 1999). With this three dimensional structure and by considering mostly the interior elements such as contents covered in curriculum of the structure of teacher education, Ball and Cohen suggested requirements of professional education of teaching. First and the most essential one was to learn the professional performance which brings the teaching practice front. Second, teacher education should be self-productive in terms of knowledge, skills, and values. Third, the investigation of practice should be taken into consideration concerning the critical questioning and analysis. Lastly, for the development of professional education of teaching it was essential to have discourse analysis between the communities of teachers and learners.

Cochran-Smith (2005) expressed her understanding of current teacher education as calling it as the "new" while defining it on the basis of a multidisciplinary theoretical framework. She claimed that teacher education could be perceived as "social, ideological, rhetorical and political practice" (p.3) in addition to its research, policy and practice dimensions. She referred with the word "new" to the implementation of current social, economic, professional and political trends in teacher education. Besides, this new teacher education was affected by the gap in educational achievement, the increased role of the central institutions, the rise of the education as a science, the increase in a market approach towards education policy, and the history and importance of the teaching profession.

Through the discussion on teacher education, Cochran-Smith (2005) argued that teacher education would consist of three overlapping pieces: Teacher education was a problem of public-policy, it was originated through research and evidence, and was tested through outcomes which in turn is the student achievement. Public-policy debate on teacher education investigated the issue through its gradually centralized structure regarding the market-based approach. This resulted in the need of higher student achievement, easiness of teacher placement and recruitment, and accommodation to the different cultures of schools and to a variety of conditions. She, then, claimed that coherent implementations of policies could solve the problems regarding this issue. Because of the knowledge base of teaching profession, it was argued that teacher educators were forced to perform convenient research in the field. The emerging standards required for being a teacher lead them to accredit professional knowledge base in the reform periods in 1990s in the United States. On the basis of this movement, it was favored that professional knowledge should be developed through research in this new teacher education period while taking into consideration of misinterpretation of some research methods that were used in teacher training such as experimental methods (Cochran-Smith, 2005).

Regarding that only education as a field traces the professional performance through studies apart from the other fields such as law or nursing, the evaluation of professional effectiveness of teachers through the student achievement could be very significant.

However, for the teachers working on rural areas with poor school facilities, judgment made through student achievement was unfair unless the actual outcome of teacher education would be specified to respond the needs of those kind of communities, then it could be claimed that evaluating the teachers' professional performance according to the "outcomes" could be an efficient way in order to educate well-qualified teachers (Cochran-Smith, 2005).

According to these constructs, Cochran-Smith (2005) addressed four main issues which could cause debates in teacher education: (a) the compromising efforts between selectivity and diversification of the teachers, (b) the equilibrium between subject matter and pedagogy, (c) the ownership of teacher preparation between the university and multiple other locations, and (d) the contradictions caused by simultaneous occurrence of regulation and deregulation.

The debate on diversification and selectivity concerns teacher education with teachers' ethnical and racial diversities. From this perspective, its scope goes beyond to the general frame of teacher education in Turkey as it has never been argued.

Regarding the arrangement of the balance of subject-matter and pedagogy, Cochran-Smith (2005) emphasized the importance of having pedagogical components in teacher education as important as the subject matter knowledge. Considering that certification of being a teacher includes both subject matter knowledge and pedagogical content knowledge, it was found that teachers who were uncertified were as successful as certified teachers and that teacher preparation affected the teachers' professional performance (Darling-Hammond, Holtzman, Gatlin, & Heiling, 2005). On the other hand, a new approach of "pedagogy of realistic teacher education" was developed and it focused on mainly the importance of coherency between theory and practice (Korthagen & Kessels, 1999).

Concerning the competitions between university and multiple sites which offer teacher education programs in the United States, the active constituents in any effective teacher education program should be searched. Cochran-Smith (2005) exemplified this by mentioning the two overlapping areas: Universities help teachers to accomplish them in social, political, historical, and cultural aspects of schooling. Besides, some aspects of schooling are best obtained under the contexts of schools and classrooms such as designing the academic tasks and using them to make decisions about curriculum and instruction (Cochran-Smith, 2005). Hence, teacher education requirements were not acquired through some kind of teacher preparation programs such as programmed distance learning modules. Current teacher education implementation in Turkey is managed under universities only. This debate in the teacher education context could not be discussed in our country.

There has been an ongoing discussion on whether the teacher education should be through regulation or deregulation. Profession has three dimensions which are knowledge, autonomy, and responsibility and teacher professionalism could be considered through these

dimensions. Since teaching is a profession such as being a lawyer or a doctor, teachers should ground their practices on a certain amount of professional knowledge. This professional knowledge for teaching similar to the other professions above could be measured by a scientific method and this produced knowledge should be fortified by some certain theoretical models and researches in order to provide its validity (Hoyle & John, 1995, cited in Furlong, et al., 2000). Because teachers work in imponderable places similar to lawyers and doctors, they should have some sort of autonomy. This idea leads to the debate of deregulating or regulating the teacher education since the changes in these three dimensions of profession could cause some changes in the implementation of teacher education and consequently affect the teacher professionalism (Furlong, et al., 2000). Controlling the autonomy of a profession leads to the integration of certain policies into teacher education which brings the "regulated" teacher education. However, the deregulation in teacher education means the decrease in the political implementations on teacher education. Deregulationists defend that teacher education should be shaped by market requirements and satisfy the needs of changing economics (Cochran-Smith, 2005; Cochran-Smith & Fries, 2001). On the other hand, there is another side which thinks that teacher education should be regulated through the control over both input and output variables of teacher preparation (Cochran-Smith, 2005). In order to take the market needs of society into consideration, the state behaves like a control mechanism and introduces some national curriculum or national testing in order to assess the accountability (Apple, 2001).

This simultaneous tendency to reshape teacher education causes a contradiction defined as "tightly regulated deregulation" by Cochran-Smith (2004, p.3) in which teacher education is limited by local requirements. Considering the disagreement of the sides about this issue, training teachers under such a "thematic approach" or an "eclectic approach" causes a dilemma in teacher education which both sides serve some advantages (Katz & Raths, 1992). Aiming to achieve a certain set of goals in teacher education institutions could maintain more self-confident teacher candidates since they do not have to compete with the other students in education faculties. This perspective can be an advantage of teacher education with a certain philosophy, curriculum, or pedagogical model which has "thematic approach". However, once teacher educators were given rights to select their own courses and own evaluation tasks without any attempt of program policies, teacher education institutions could be a place where teacher candidates generate ideas and consequently have opportunities to increase their socialization as much as they can (Katz & Raths, 1992).

2.2. Three Major Components Constructing Teacher Education Program

In this part, each of the components that construct the teacher education program, namely political warrant, evidentiary warrant and accountability warrant, will be scrutinized

in the lights of the debate of two competing agendas mentioned in previous part. First one is the agenda to professionalize teaching and teacher education and the second one is the movement to deregulate teacher preparation (Cochran-Smith & Fries, 2001). Teacher professionalism in general means educating the teacher based on standards mandated by the dominating policies. However, deregulating teacher education is a movement towards breaking up this domination of teacher education and its centralized nature in order to have a better control on the market needs of society. The most striking claim of the deregulationists is that teachers should be educated by aiming the social goals rather than focusing on students' learning achievement. Cochran-Smith and Fries (2001) mention three important warrants in order to form the common sense about what can be done for the development of an effective teacher education through the debate going on between these two views of teacher education. These are political warrant, evidentiary warrant and accountability warrant, as will be explored below.

2.2.1. Political Warrant

Political warrant refers to the competing policies to prove the value of their positions regarding the national services and purposes in terms of education. The debate between these two opposing sides goes around the idea of how much freedom should be included in the teacher education in selecting prospective teachers for teacher education institutions, recruiting them, and evaluating the teachers' effectiveness based on student achievement in particular. Deregulationists claim that teachers, who could increase students' achievement, should be given opportunities to perform their profession no matter what their training have about this profession is (Fordham Foundation ,1999a, cited in Cochran-Smith & Fries, 2001). On the other hand, professionalists use also this term with the same meaning of deregulationists' point of view which it is constructed in terms of public good and greater service to all citizens. In general, professionalists basically claim that in order to provide public with higher life standards and economic opportunity, fully prepared teachers who know how to teach to all students are needed. In light of the foregoing ideas, professionalists try to refute the ideas of the other side by the claim that most advantaged students tend to hold on well-prepared teachers whereas poor and minority students keep the less qualified teachers while promoting for the free-market approach (Darling-Hammond, 2000b). On the other hand, deregulationists evaluate the ideas of professionalization agenda by favoring that regulatory strategies carry private controls on (Cochran-Smith & Fries, 2001).

There are only universities in order to train teachers in Turkey. Among 69 education faculties, 5 of them are private (Kavak, Aydın & Akbaba-Altun, 2007). Searching the political warrant through teacher education in Turkey, one can compare the education faculties in public universities with the private universities in terms of their curriculums,

selection of students and recruitment of graduates. The curricula of the education faculties are determined by HEC which is centralized and constructed according to the teacher requirements as a profession by the Fundamental Law of National Education and there could only be little differences in terms of determining the elective courses depending on the staff.

Turkish universities select their students through national student selection examination for the graduates of high schools and teacher education programs select their students through this examination as well. Alternatively, students of arts and sciences departments who want to become a teacher could attend a pedagogical training certification program which includes approximately 24 credits of education (Usun, 2008). After graduation from education faculties and the certification programs, teacher candidates are obliged to take another multiple choice national examination (KPSS) test covering the topics of general culture, subject-matter, and pedagogical content knowledge in order to be recruited in public elementary or secondary schools since 2002 (Kavak et al., 2007). Teacher candidates are ranked according to their scores and assigned to the schools which need teachers. However, teachers who got high scores are more likely to be recruited in the Western regions of Turkey or the city centers compared with the Eastern regions or the rural areas since the acceptance scores of the places in the former regions are high. But, there is not a different implementation for the graduates of the education faculties of the public or private universities or for the ones attended to teacher certification programs.

The highly centralized structure of teacher selection and recruitment in Turkey addresses that teacher professionalism is emphasized in Turkey. On the other hand, if one could look back to the Turkish teacher education history, the phenomenon of village institutions was an example for the implementation of deregulationist approach. Village institutions were training teachers according to the needs of the region where there was teacher need and teachers were recruited based on the skills they earned during training concerning the needs of that region.

2.2.2. Evidentiary Warrant

Evidentiary warrant is “a term […] to refer to the validity of analyses based on repeated testing of confirming and disconfirming the evidence, [here it was used more generally] to refer to the set of justifications and grounds that are offered for conclusions and policy recommendations based entirely on empirical data, evidence, and facts” (Cochran-Smith & Fries, 2001, p.5). The measurement of efficacy of teacher education institutions and the assessment of teacher effectiveness based on student achievement regarding the political attempts are the main concerns of the debate between deregulation and professionalism agendas in teacher education context.

Darling-Hammond (1998) emphasized that teacher knowledge and teacher expertise have significant influences on student learning. For the professionalists, in general, teacher education is the most important issue for students' learning (Darling-Hammond, 2000a). On the other hand, the deregulationists such as Ballou and Podgursky (2000) think that teacher education doesn't matter much at all. In addition to this, they claim that teaching ability is more an innate talent not depending on the quality of education courses and could support only 40% of student achievement (Ballou & Podgursky, 2000). Moreover, it is also found that, there exists very little connection between the degrees teachers gained or their experiences and how much their students learned (Fordham Foundation, 1999, cited in Cochran-Smith & Fries, 2001). Conversely, in her second report for NCTAF, Darling-Hammond (1997) mentions that fully-prepared and certified teachers, both in their discipline and in their education, are more effective and successful than the teachers without preparation, accordingly teachers with greater training are more effective than less trained ones. In order to refute the results of the report, Ballou and Podgursky (2000) caution that such reports generally overemphasize policy implications and ignore critical limitations of the research while claiming that the previous study had considerable errors. Through the debate between deregulation and professionalism agendas, deregulationists see the points of view as ideological and because of this they were insulting on the research performed by professionalization agenda (Cochran-Smith & Fries, 2001; Darling-Hammond, 2000a).

Teacher education issue seemed always under the effects of the discussions about the amount of pedagogical courses and subject-matter courses when one looked at the reform movements from the very beginning of teacher education history in Turkey. The implementation of village institutions was terminated claiming that they were not capable enough to educate teachers in terms of subject-matter knowledge such as mathematics or science. Regarding the ratios of the subject-matter knowledge and pedagogical content knowledge courses in the current elementary mathematics teacher education programs, the ratio of subject-matter knowledge is high as well as the ratio of pedagogical content knowledge courses. Regarding another side of the debate on professionalism or deregulation in Turkey, it should also be emphasized that currently there is neither a system which teacher effectiveness is measured through student achievement in Turkey nor the one for the measurement of the effectiveness of teacher education institutions. It was founded that KPSS shows the cognitive abilities of teacher candidates as well as national student selection examination, but there is a need to determine the characteristics and qualifications of high-quality teachers regarding the sides of teacher education agencies in Turkey which are HEC and MNE (Baştürk, in press).

2.2.3. Accountability Warrant

Accountability warrant constitutes the reasons grounded by outcomes, results, and outputs, and refers to "arguments posed on both sides of the professionalism-deregulation debate in order to demonstrate that recommended policies are justifiable and justified by the outcomes and results they produce" (Cochran-Smith & Fries, 2001, p.7). The deregulationists argue that many policy makers request more regulations of inputs and processes instead of inspiring a results-based approach. (Fordham Foundation, 1999, cited in Cochran-Smith & Fries, 2001). However, professionalists claim that they are not focusing on results but instead, on the inputs which are offered in pre-service education of prospective teachers. They defend themselves by simply giving an example from new curriculum, which is consisted of performance based standards and based on performance assessment, by evaluating the performance as an outcome.

Both sides use the same words, outcomes and results, to demonstrate the accountability warrant, but they actually mean quite different things by these words (Cochran-Smith & Fries, 2001). Professionalists emphasize outcomes, yet their understanding is different from the deregulationists' one. According to professionalists, outcomes are defined primarily in terms of teachers' professional performance, including the arrangement of teaching practice with curriculum standards, with teachers' ability to have a positive impact on students' achievement, and with teachers' skill of reflecting on and learning from their own work. Their ideas are based on the proposition that there is a knowledge base in teaching and teacher education is based on rigorous research and professional agreement about what teachers and prospective teachers should know and be able to do (Cochran-Smith & Fries, 2001). In brief, it can be derived that while deregulationists see teacher education as a means for student performance, professionalists think that teacher performance results in student learning. That is, from the deregulationists' perspective, it could be derived that a results-oriented approach which covers students' learning should be favored instead of increasing the initiatives of teacher training. On the other hand, professionalists claim that teachers who are trained with high standards call forth students who learn high standards (Cochran-Smith & Fries, 2001).

Based on the professionalization-deregulation debate, HEC has been working on the revision of the curriculum of the teacher education institutions including the teaching practice applications in order to change the "inputs" that Cochran-Smith and Fries (2001) defined without any study on measuring the efficiency of teacher educations or assessing the teacher effectiveness regarding the curriculum, or without any accreditation studies throughout the education faculties. Altan (1998) suggested that there should be some measurement and assessment mechanisms for education faculties. It was mentioned in the HEC's report that the new elementary mathematics teacher education program was revised

under the views and ideas of the revision team without much consideration of research findings (Kavak et al., 2007).

The teacher qualifications' document published by MNE shows that teacher education in Turkey mostly covers the idea of professionalization, because teachers are expected to have certain qualifications in order to increase students' achievement. It could be understood from the idea of determining qualifications for teaching profession that teaching is centralized and HEC directs the universities through these profession standards formulated by MNE. That is, HEC determines a unique teacher education curriculum for all subjects of teaching and forces the education faculties to implement. On the other hand, the curricula released by HEC contain some freedom for education faculties in order to select the courses which they offer from the pool of courses. Then, this arrangement of selecting courses shifts the debate to the deregulating the inputs of teacher training in Turkey. Considering the quality of teachers as an instrument makes the teacher education as a factor for student performance. Then teacher education debate in Turkey regarding the accountability warrant concludes in a professionalization approach with the pre-determined standards of profession blended with certain deregulationist approach by determining the offered elective courses in curricula.

2.2.4. Summary

The discussion above shows that all of the three warrants which are political, evidentiary, and accountability, and through the debate between professionalization and deregulation agendas, these warrants are interrelated with each other and serves a basis for understanding the needs to reshape the teacher education. It is worth mentioning here that Cochran-Smith and Fries (2001) caution that teacher education could not be solved by emphasizing only on evidentiary warrant, the concerns on accountability and political warrants should also be considered.

2.3. Teacher Education in Turkey

2.3.1. History of Turkish Teacher Education (Republic times – 1982)

2.3.1.1. Teacher Education For The First Level of Elementary Education

Following the foundation of Grand National Assembly of Turkey (Türkiye Büyük Millet Meclisi), Ministry of National Education (MNE) was established on May 2nd in 1920 and its first minister was Rıza Nur. In the meantime the country had just been out of a long war with a population of 10 million people of whom 91% were not literate (Öztürk, 1999). In March 13th, 1924 the "Secondary Education Teachers" law numbered as 439 was pronounced emphasizing the importance of teaching profession and its requirements. This law was very important in the history of teacher education in Turkey for its three

characteristics. First, teaching was accepted as a profession and because of this feature it had certain requirements. Second, teaching was organized in three levels as higher education, secondary education, and elementary education. Thirdly, teaching maintained its characteristics of an easily entered profession (Şimşek, 1985). Two years later, with a new law numbered as 789 teaching was reorganized in four levels with the addition of village teaching to the above three levels.

With the increasing demand of teachers all around the country and considering that the majority of the people were living in the villages, government paid attention especially to the education of the citizens in villages. Therefore, on December 26th, 1934, the law which stated that substitute teachers could be hired for three years from the people who worked in public institutions or had private businesses" was accepted (Şimşek, 1985).

The efforts between 1920 and 1927 showed that all the laws in this period were disregarding the quality of the teachers and giving the message for who could not become a teacher to the society (Şimşek, 1985). The only remarkable development in this period was the establishment of village teacher schools (Köy Muallim Mektepleri) with the law numbered as 789 in 1926. While Mustafa Necati was the minister of MNE (1925-29), two village teacher schools were founded in Denizli and Kayseri and the schools were closed in 1933. The reasons for their termination were (i)their inability to educate the students taken from cities and towns for villages and (ii)being not to be provided with the conditions which they need during their training regarding that they were funding (Öztürk, 1999). Therefore, the training of the village teachers was terminated untill the foundation of village educators project (Köy Eğitmenleri) and village institutions (Köy Enstitüleri) (Şimşek, 1985).

On June 11th, 1937, the law of village educators numbered as 3238 was accepted and with a period of 6-8 months village educators were trained to be recruited in the villages. Through this action, nearly 8000 village educators were trained between 1937 and 1946. This law was the fundamental for the establishment of village institutions. It was important as the first educational action produced and followed through a study which studied project of village educators (Şimşek, 1985).

Village institutions were founded with the law numbered 3803 on April 17th, 1940 with the following imperatives. First, city teacher school (Şehir Öğretmen Okulu) graduates tended to be unwilling to be employed in villages and they were trying to quit the job in any opportunity they would found. Second, when city teacher school graduates were appointed to work in villages, they were unable to adapt to living in villages and felt themselves as foreigners. Third, because of the economical conditions of the country, the government was unable to assign necessary number of teachers to the villages. Hence, village teachers who were appointed with less amount of salary would also contribute to the economic life through agriculture on an assigned land for each of them. Fourth, Atatürk's principals and

revolutions would be transferred to the illiterate people who were almost 80% of the country, with the idea of village teaching. Fifth, village institutions would carry the society to a more civilized age since they were considered to be as a shift from elite education to a democratic education. Sixth, villages needed people who knew about the agriculture. Therefore, with the recruitment of village teachers in the villages, it was believed that agriculture could be developed and village life and villages could change radically (Şimşek, 1985).

In order to have a proper operation of this system, the law of "village schools and institutions" numbered as 4274 was accepted on June 19th, 1942. With the efforts of Hasan Ali Yücel, who was one of the most successful ministers of MNE and İsmail Hakkı Tonguç who was the General Director of Elementary Education (İlköğretim Genel Müdürü) in the establishment of village institutions, their number reached to 21 in a short time (Öztürk, 1999). In 1952, the idea that one could not be a teacher, an agriculturalist and a technical at the same time was brought forward and some courses related with the village life in village institutions were cancelled. Then, the differences between village institutions and primary teacher schools (İlköğretmen Okulları) were decreased, and finally village institutions were closed in 1954. They were transferred to primary teacher schools and their education duration was 6 years for the graduates of first level of elementary education and 3 years for the graduates of second level of elementary education. Village institutions were considered to be a "communist organization" especially after the government was established by Democrat Party (DP) in 1950 and similar discussions still exist in Turkey (Öztürk, 1999).

During the period of village institutions, nearly 15000 teachers and 2000 sanitarians were trained. Between the years 1950 and 1960, the number of teacher schools was increased to 52 but the number of graduates from these schools was decreased (Şimşek, 1985).

The military coup on May 27th, 1960, brought important changes in the socio-political and socio-economical structure of the country (Şimşek, 1985). This military government considered the increased number of the graduates of high schools and the right that they could become reserve officer. Then, the government took some urgent actions for the increasing demand of teachers all around the country during the first 6 years after 1960. Some of these actions were the employing reserve officer teachers (Yedeksubay Öğretmenler), encouraging to graduate via distance education and taking temporary teacher education courses (Şimşek, 1985). Especially the temporary teacher education courses were known as "higher education with the letter" in the society. These efforts had an impact on the number of employed teachers but the quality of teaching was disregarded (Öztürk, 1999).

In 1973, the fundamental law of national education pronounced with the belief of reaching a radical solution for education problems (Şimşek, 1985). With this law the primary teacher schools were transferred to higher teacher schools, known as Anatolian teacher high schools today, and therefore teachers were expected to pursue higher education and

education institutions (Eğitim Enstitüleri) with a two-year of education were founded in order to train primary teachers (Şimşek, 1985). The number of two-year education institutions was nearly 50 in 1976. This number decreased to 13 in the 1979-1980 education year and in 1981 three of them and in 1982 one of them was reactivated to educate the teachers and their numbers reached to 17 in total (Öztürk, 1999).

Although two-year education institutions were also established to train subject area teachers for the second level of elementary education, they only trained primary teachers since they were renamed as "primary teacher education institutions" with the regulation in 1979 (Öztürk, 1999).

Two-year education institutions were placed under the universities similar to other teacher education institutions in 1982 and they were renamed as higher education schools (Eğitim Yüksek Okulları). Their education duration was increased to 4 years in 1989-1990 education years by Higher Education Council (HEC) (Öztürk, 1999). Then, in 1992, education high schools were transferred to the departments of primary education in education faculties (Dursunoğlu, 2003).

2.3.1.2. Subject Area Teacher Education for the Second Level of Elementary Education

The Minister of National Education Mustafa Necati initiated Gazi middle teacher school (Gazi Orta Muallim Mektebi) in Ankara in the 1927-1928 education years. This school was firstly set in Konya namely and named as "middle teacher school" in the 1926-1927 education years. Gazi middle teacher school trained, in 1941 there were classes of Turkish, history, geography, pedagogy and mathematics teachers for two years and science, physical education, art and music teachers for three years. However, in 1940s it became clear that this school was not sufficient in providing the needed number of middle school teacher in Turkey by itself. Therefore, the first teacher schools (İlköğretmen Okulları) in the cities Balıkesir, İstanbul and İzmir were transferred to education institutions in 1946-1947 education years and based on the need for middle school teachers, the number of these schools was increased to 18 in 1977-1978 education years (Öztürk, 1999). In 1969, the duration of education was increased to three years for all subjects. After this date, they were called as "three-year education institutions" different than the two-year education institutions which trained only primary teachers. Their duration of training was increased to 4 years in the 1978-1979 education years and they were transferred to "higher teacher schools" (Yüksek Öğretmen Okulları) (Öztürk, 1999). Beginning from the 1967-1968 education years with the increasing need for middle school teachers, actions in order to increase the number of primary teachers mentioned above were devoid of the quality of teaching (Öztürk, 1999).

Because of the incapability of their graduates in teaching to the pedagogical development of their students, higher teacher schools always had difficulty in training the desirable teachers for the second level of elementary education especially after they were governed under the universities (Öztürk, 1999). Regarding these rationales, HEC introduced new elementary education departments in education faculties in the academic year of 1998-1999. This reform brought bachelor degree programs for the fields of early childhood education, elementary mathematics education, and elementary science education.

2.3.2. External Problems of Teacher Education in Turkey

Teacher education profile in Turkey mentioned here is mainly based on the article of Çakıroğlu and Çakıroğlu (2003) since this article discusses the issue in dimensions in a very detailed way. According to Çakıroğlu and Çakıroğlu (2003), there are four main issues which affect teacher education policies in Turkey from outside. They are population, political issues, problems of teachers, and admission.

Immigration from the rural areas to more industrialized regions in Turkey affects the opportunities of education offered. The high population places tend to have less amount of teachers to work at schools and less amount of curriculum materials and facilities (Çakıroğlu & Çakıroğlu, 2003). Generally, rapid increase in population has a long-term result on teacher education where the need for trained teachers doesn't match the demand for them in schools (Grossman & Sands, 2008). For the 1997-1998 academic years, the government has decided to employ the graduates of 4-year university programs to satisfy this demand for teachers although they lacked teaching preparation. This academic year also coincides with the beginning of 8-years of compulsory education. The inconsistency between the population, number of teachers, and the education served shows that policy makers don't seem to accept the quality of education and teachers as a serious concern (Çakıroğlu & Çakıroğlu, 2003).

Before 1982, in order to solve the teacher need in Turkey, governments tried to manage it with some sort of short term solutions. However, it was concluded that these efforts sometimes were not successful (Erkan, 1992, cited in Çakıroğlu & Çakıroğlu, 2003). The other problem of teacher education regarding political issues is the disparity between the life conditions and educational needs of both rural and urban parts of the country. The "village institutions" programs terminated in 1950s were designed by considering these differences. However, all current teacher education programs depend strongly on the centralized structure of elementary and secondary teacher education and teachers are trained to implement these strict educational requirements in a variety of schools differing in cultural and economical conditions (Çakıroğlu & Çakıroğlu, 2003). Another issue related with political actions is serving education without having an actual educational philosophy. According to the government programs of 10 governments (including 1 military

government) established since 1982, it is realized that all educational policies are affected by 1982 constitution in which Turkish nationalism and the understanding of sacred nation is named as Atatürk nationalism and Atatürk's principles as a chauvinistic way (Kaplan, 1999).

The results of the study by Karagözoğlu and Murray (1988) show that the profile of teachers in teacher education in Turkey seems unchanged in almost two decades: Teachers do still face with the "low salary, low status, heavy demands made upon time, over-burdened task, lack of opportunities to improve professional knowledge and effective performance, and finally, lack of job security" problems (p.9). Specifically, students who have low income rates or low average ability rates (high school grade point averages) have a tendency to choose teaching as a profession. These conclusions have aroused the decrease in inclination towards being a teacher in the society and consequently the decrease in status of teaching profession as time passes. These are the problems of teachers regarding both the selecting teaching as a profession and the problems while working as a teacher which affect the decision of being a teacher (Çakıroğlu & Çakıroğlu, 2003).

Prospective teachers are placed in teacher education programs via the University Entrance Examination (UES). This replacement of students into education faculties doesn't coincide with the needs of being a teacher in terms of teaching skills and teaching personality threats (Binbaşıoğlu, 1995, cited in Çakıroğlu & Çakıroğlu, 2003). Binbaşıoğlu (1995, cited in Çakıroğlu & Çakıroğlu, 2003) suggests conducting interviews for the replacement of new teachers into education faculties. However, regarding the fact that only about 10% of candidates can attend undergraduate programs selecting teachers via interviews seems difficult (Çakıroğlu & Çakıroğlu, 2003).

2.3.3. Structural Problems of Teacher Education in Turkey

The curriculum of education faculties and the relevance between the knowledge produced and evaluated by the educators, and the practices and expectancies of teachers (Çakıroğlu & Çakıroğlu, 2003) are mentioned in this part.

Calling the 1980s as the period in which educational systems were restructured and reformed around the world, Şimşek & Yıldırım (2001) summarized the conditions behind the changes in the 1998 reform of teacher education in Turkey as in the following: First, the curriculum in teacher education faculties was not taken into enough consideration in terms of quality requirements. Second, the content area teachers for secondary schools were outnumbering the pre-school and elementary school teachers. Third, there were inconsistent appointments of teachers in order to deal with the teacher needs of elementary schools after the new compulsory education period in 1997. Fourth, according to HEC, the curriculum of secondary teacher education programs did not contain enough teaching certification courses, which led to an expectation from secondary school teachers to have a master's degree. Fifth,

teaching methodology and teaching practice courses were given more attention in new teacher education curriculum. Sixth, the foundation courses were redesigned and new courses were added to the new curriculum such as instructional planning, classroom management, and computer and instructional technology. Finally, in order to deal with the needs of trained academic staff in education schools, HEC and Ministry of National Education offered some doctoral scholarships (Çakıroğlu & Çakıroğlu, 2003; Şimşek & Yıldırım, 2001). The new teacher education curriculum was redesigned regarding the above issues and started to be implemented in the academic year of 1998-1999 in Turkey.

Another important issue regarding the structure of the teacher education is the relevance between the knowledge produced in a teacher education program and the enactment of the outcomes of this knowledge in school settings. It is observed from the beginning teachers' problems that teacher education programs do not offer a well-prepared process of learning to teach and courses completed in university are not consistent with the settings experienced in schools (Bulut, Demircioğlu, & Yıldırım, 1995). Therefore, it is seen that the curriculum of teacher education programs are neglecting the realities of Turkey. One important reason is that the resources such as textbooks in teacher education are based on the Western teacher education traditions. Although some courses should be dependent on country, culture, and situation aspects, such as curriculum development or social foundations of education, instructors tend to use resources from Western-originated literature (Çakıroğlu & Çakıroğlu, 2003).

2.4. Summary

In this detailed literature review above, it is aimed to draw an overall picture of the issues of teacher education and how these issues are debated and criticized by the researchers. In terms of teacher education in Turkey, the history of Turkish teacher education has developed according to the changes parallel to the movements in political decisions. The presented views showed that teacher education is an important issue with various dimensions. In the international literature, teacher education is debated by two sides which are professionalists and deregulationists. It could be stated that the trend in Turkey's teacher education approaches to the professionalists' perspectives. The influence of political components on the structure of teacher education in Turkey is also noticeable.

CHAPTER 3

METHODOLOGY

This study investigated Turkey's teacher education reforms since 1982 through the perspectives of 15 teacher educators from five universities and an expert from Department of Teacher Education in Ministry of National Education who were involved in the reform processes.

This study was designed based on qualitative research techniques. Creswell (2007) defines the phenomenology in qualitative research as an approach which "describes the meaning for several individuals of their lived experiences of a concept or a phenomenon" (p. 57). Considering this definition and the phenomenon of this study as teacher education reforms in Turkey between 1982 and present, a phenomenological approach was employed for the study. The meaning of the teacher education reforms for the teacher educators was investigated through their perspectives and lived experiences.

There were two main data sources for this study: One-to-one interviews with the participants and the curricula of elementary and secondary mathematics education programs which education faculties have followed since 1982. The responses of the participants in the interviews were investigated through the curriculum documents in order to determine the extent that the issues mentioned during the interviews were reflected in the curriculum changes or not. The study's focus was on the decision-making processes rather than the implementation of the curricula. Therefore, the practices of the university instructors and program students who experienced those curricula in different ways were not investigated.

In this chapter, firstly the research questions will be stated. Secondly, detailed information about participants will be given. Then, the instrument of this study will be introduced and immediately data collection and analysis procedures will be explained extensively. Since data collection and data analysis procedures are based on qualitative principles, the quality of the research will be discussed at the end of this chapter.

3.1. Research Questions

The aim of this study is to document the teacher education reform processes in Turkey since 1982 through the perspectives of the agencies who were involved in the teacher education reforms. It is expected that documenting the imperatives underlying the past teacher education reforms will help current policy makers and implementers in projecting the present and future imperatives of the reform movements. Therefore, the following research questions were investigated in the present study:

1. What are the problems of teacher education in Turkey from the perspectives of teacher educators and the suggestions they generated for the solution of those problems?
   - 1.1. What are the problems of teacher education from the teacher educators' perspectives?
   - 1.2. What are the suggestions which teacher educators generated based on their perspectives?
2. What were the imperatives for 1982, 1998, and 2006 reforms in Turkey from the perspectives of teacher educators?
   - 2.1. What were the imperatives for the 1982 reform?
   - 2.2. What were the imperatives for the 1998 reform?
   - 2.3. What were the imperatives for the 2006 reform?
3. What were teacher educators' perspectives on the extent to which 1982, 1998, and 2006 reforms have met the needs of teacher education in Turkey?
   - 3.1. What were the perspectives of teacher educators on the extent that 1982 reform has met the needs of teacher education in Turkey?
   - 3.2. What were the perspectives of teacher educators on the extent that 1998 reform has met the needs of teacher education in Turkey?
   - 3.3. What were the perspectives of teacher educators on the extent that 2006 reform has met the needs of teacher education in Turkey?

While first two of the research questions are closely related with the responses of the participants, the third question is mainly related with the curricula applied since 1982. Because of this nature of the research questions, first two will be tried to answer through interviews and the third one with the documents.

In order to highlight the research questions teacher education history in Turkey beginning from 1982 untill present will be explained in the next part.

3.2. Context

Context of the study was determined as the history of mathematics teacher education in Turkey. When education faculties were established in 1982, there were only secondary mathematics teacher education programs and the graduates of these programs had been recruiting for both elementary and secondary level of mathematics education in schools. With the 1998 reform, elementary mathematics teacher education programs were also formed and they were reformed in 2006. In this short period of history of education faculties, three major changes have shaped the mathematics teacher education.

More detail about the context was given in the introduction chapter.

3.3. Participants

The 15 participants of this study were chosen by snowball sampling technique (Bogdan & Biklen, 2007). With this technique, first one or two participants were chosen purposefully so that they would provide more data for the investigation and also would address the possible participants who might provide rich information. Then, the possible participants were contacted and invited to be a participant for the study. Each participant was asked to address other possible participants who might provide rich information for the study.

There were two groups of participants in this study: Teacher educators in five different universities and one policy maker in the Department of Teacher Education in the Ministry of National Education (MNE). The participants' institutions are given in Table 3.1.

Table 3.1 The distribution of participants based on the institutions.

Classes	***Institutions***	***Number***
Teacher educators	Hacettepe University	7
	Başkent University	3
	Middle East Technical University	2
	Ankara University	1
	Osmangazi University	1
Policy Maker(s)	Department of Teacher Education in MNE	1

The study areas of teacher educators are given in Table 3.2.

Table 3.2 The study areas of teacher educators.

Specialty	***Number***
Educational Sciences	4
Elementary Mathematics Education	5
Secondary Mathematics Education	1
Biology Education	1
Turkish Education	1
Early Childhood Education	1
Computer Education	1

Some of the participating university members had administrative duties in their departments such as department chair or department vice-chair. Because of these administrative duties, majority of them have worked in the reform movements due to the assignment of Higher Education Council (HEC). Table 3.3 presents the number of the participants assigned for reform studies based on the reform they worked.

Table 3.3 Number of assigned university members based on the reform type.

Reform Type	***Number of Assigned University Member***
1982 Reform	0
1998 Reform	5
2006 Reform	7

As can be recognized from the table, none of the participating university member or policy maker had an assignment in the 1982 reform. Two of the university members and the policy maker from MNE have worked both in 1998 and 2006 reforms.

Participants were given a code in order to specify them with their quotations in the findings chapter of the study. Regarding all of the varieties among the participants of this study, the following table gives the detailed information about each of them.

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Table 3.4 Participants characteristics in terms of the year their graduation year, graduated program, and current administrative roles (where applicable).

Participant	***Characteristics***
P1	1992 Mathematics education graduate
P2	1979 Mathematics education graduate, Department chair of computer education and instructional technologies
P3	1964 Education institution graduate (English teaching), Department chair of educational sciences
P4	1965 Department of agriculture graduate, Department chair of secondary science and mathematics education
P5	1974 Mathematics graduate, Dean of education faculty
P6	1991 Guidance and psychological counseling graduate
P7	1965 Higher teacher school graduate, Department chair of secondary science and mathematics education
P8	1970 Educational sciences faculty graduate, Head of department of teacher education in MNE
P9	1985 Technical education faculty graduate, Department chair of class teachers
P10	1979 Foreign language education (English) graduate, Department chair of educational sciences
P11	1983 Child development graduate, Department chair of elementary education
P12	1997 Secondary science and mathematics education graduate
P13	1975 Mathematics graduate, Department chair of elementary mathematics education
P14	1975 Police academy graduate, and 1978 Education graduate
P15	1982 Education department graduate.

Table 3.4 shows that participants have a variety of graduate programs and administrative duties. Some of them had administrative work in the past, but it is not

mentioned in the table. Regarding that snowball sampling was the major method for selecting the participants; they were chosen to collect data although there were differences in their work of fields. Based on the characteristics mentioned in the above table, majority of the participants have different fields than mathematics education; however, they, as having administrative duties in education faculties they work, played role in the studies of the 1982, 1998 and 2006 reforms.

3.4. Documents

The curriculum documents collected for this study were investigated mainly to answer to the third research question. The focus was on the elementary and secondary mathematics education curricula since 1982. While 1998 was the year of the introduction of the elementary mathematics education programs to education faculties, the curricula of mathematics education programs of Middle East Technical University (METU) before 1998 were collected. It is known that the curricula between the years 1982 and 1998 for the teacher education departments in education faculties were different according to the universities. Therefore, the interview responses and the imperatives of the reform in 1998 were searched through only METU curriculum documents.

The documents were collected from the General Catalog of METU which is published in every two years. The secondary mathematics education curricula were investigated for 1982 and 1998 reforms and elementary mathematics education curricula were investigated for 2006 reform.

3.5. Instruments

An interview protocol with 14 main questions was used to gather data to investigate the first and second research questions.

The participants were initially asked to discuss the teacher education system before 1982 in order to understand their ideas about the foundation of education faculties under the universities after the teacher education institutions were governed by the Ministry of National Education. First, the participants were asked whether they had worked for each reform movement or not. Secondly, their perceptions about the effectiveness of the reform in general were sought. Then, they were directed questions about their ideas about the needs for the reforms and imperatives behind reform actions. The last question for each specific reform action asked their evaluation the match between the needs and the imperatives of the specific reform movement.

Some of the interview questions were directly intended to gather participants' detailed documentations about the reforms in 1982, 1998, and 2006. The examples of interview questions are presented in Table 3.5

Table 3.5 Example interview questions related with the reforms.

Example Questions
- Did you work for the development of the reform in (…..) officially? - Do you think that reform in (…..) is meaningful? - What kind of needs might have driven this reform? - What were the imperatives for the reform in (…..)? - How do you evaluate it in terms of usefulness, effectiveness, strength?

Participants in the mathematics education field were asked questions related to the last version of the elementary mathematics education curriculum. Some of the questions were related with courses in the program such as teaching practice and teaching methods. Additionally, a question regarding the proportions of the different types of courses was asked. Examples of questions regarding the new elementary mathematics education program are given in Table 3.6.

Table 3.6 Example interview questions related with the current elementary mathematics teacher education curriculum.

Example Questions
- How do you evaluate the curriculum in terms of the density of the courses, the content of the courses, and the implementation of the courses? - What do you think about the implementation of the teaching practice course? - What do you think about the implementation of the teaching methods course? - How do you evaluate the whole curriculum in terms of course categories? Do you think that their proportions are effective?

The interview protocol included questions about the relationships among the institutions involved in the teacher education. These questions are presented in Table 3.7.

Table 3.7 Example interview questions related with the relationships among HEC, MNE and the education faculties.

Example Questions
- How do you evaluate the relations between the Higher Education Council, Ministry of National Education and education faculties in general? - How do you evaluate the relations in terms of some courses in curriculum such as teaching practice?

Although the interview protocol included questions mainly about the teacher education reforms, questions about in-service training seminars for teachers in public schools and the involvement of MNE for the education of in-service teachers were also asked. Since one of the participants was from the Department of Teacher Education in Ministry of National Education, the second example in the following Table 3.8 were directed only to the participant from MNE in order to have an opinion about the issue from MNE's perspective.

Table 3.8 Example interview questions related with in-service training seminars.

Example Questions
- How do you evaluate the in-service training seminars offered by Ministry of National Education? - Does MNE ask for education faculties' opinions and help in order to develop an in-service training seminar?

Finally, participants were asked about the needs and possible solutions of Turkey's teacher education system in general. These questions aimed to gather participants' views about a possible new reform or revision of teacher education curriculum. The examples of the questions related to the needs and solutions are given in Table 3.9.

Table 3.9 Example interview questions related with the needs and possible solutions.

Example Questions
- What do you think about the needs of Turkey's teacher education system in general? - What kinds of possible solutions can you offer to solve them?

3.6. Data Collection Procedure

Data for this study has been collected through the summer of 2008. Participants were contacted via e-mail, informed about the nature of the study, and asked if they would like to participate. After they agreed to participate, they were sent the electronic version consent form via e-mail before the interviews ensuring that the data would only be used for the research purposes. It was also emphasized in the consent form that the participants could quit at any time during the interview. Interviews were conducted in Turkish in the participants' offices based on their own preferences. Each interview was audio-taped and took approximately 50-60 minutes.

During the interviews, participants were reminded of the research questions and they were also said that they could add anything related with the research questions apart from their answers.

3.7. Data Analysis Procedure

Data analysis was performed in order to investigate participants' perspectives about the teacher education reforms in 1982, 1998, and 2006, and the imperatives of these reforms concerning their possible solutions for Turkey's current teacher education system.

As an initial attempt, codes were derived according to the initial categories appearing in the research questions. These themes were reform in 1982, reform in 1998, reform in 2006, needs and possible solution in teacher education, problems in teacher education, relationships among HEC, MNE, and education faculties, teacher education curriculum, variety of universities, employment, the quality of teachers, teacher education, the quality of reform, and the institutions which educated teachers before 1982. All codes and sub-codes were generated according to all possible answers that could be given by the participants and were grouped under these categories.

Audio-taped data were first transcribed verbatim and then analyzed through the codes and their sub-codes. Then, one of the written transcripts chosen randomly was coded by the researcher together with the second coder. The recruitment of second coder for the study will be explained in the quality of the research section. After this introduction to coding, they separately coded the rest of the transcripts on their own. When this phase was finished by both coders, the researcher compared her coded data with second coder's coded data in order to see whether their coded line segments and codes addressed a consistency. This effort resulted as successful and it was decided that the codes generated at the beginning were an essential representation of the teacher education issue overall.

The names of the 1998 and 2006 reforms were determined based on the responses of the participants in general. Because of its longitudinal nature, 1998 reform was sometimes stated as 1997 reform or else by the participants of this study or in literature. In this study, it was named as 1998 reform in general. Similarly, since its studies were started in 2006 and the first implementation time period was the academic years 2006-2007, the name of this reform was chosen as 2006 reform although some of the participants called it as 2005 reform.

After the consistency has been reached on the analysis, the following upper themes were derived: perspectives on teacher education and needs considering the problems, unintended implementation, contradictions between policy and practice, (not) reaching goals. The findings will be presented in detail in the findings chapter of the research.

3.8. Quality of the Research

The issues that identify the quality of this study come from the nature of the study. In this manner the factors that affect the quality of this study will be explained in terms of "angles of vision" as Peshkin (2001) described. In order to evaluate the quality of the study researcher needs certain criteria which will be explained below in detail.

One of the factors that should be mentioned is the "objectivity of the inquirer" (Patton, 2002). This issue can be validated through the data collection and data analysis steps of this research. The researcher was asking the questions directly to the participants without leading them to any other topic or judging them under any circumstances. While making them feel as peaceful in such an environment, participants could tell their ideas about the questions and researcher gave the guarantee that she recorded the data as the interview was going continuously unless the participant asked for an interruption.

The researcher audio-taped data and this provided the research with full account of participants' expressions. Researcher also tried to write the participants' hesitations, stops in words while transcribing in order to help for the second coder since second coder did not listen to the audio versions of interviews. Codes were first formed with a researcher in mathematics education, then coding with another second coder secured to discuss the codes and the analysis of the data with a second researcher who was also experienced in the qualitative analysis methods. This effort is also known as "peer review" (Creswell, 2007). However, peer review strategies were not completely used considering the data collection and analysis parts of this study since "peer debriefing sessions" did not exceed the coding phase of the study between the researcher and the coder (Lincoln & Guba, 1985). In these peer debriefing sessions, the second researcher monitored the researcher, and they discussed the interview experiences, their effectiveness, and the process to reach participants through snowball sampling.

The second coder of the study was a doctoral candidate in the Elementary Education program at Middle East Technical University. The researcher and the second coder initially coded one random transcription together in order to establish a common understanding of the coding process and the inferences derived from the data. Then, they coded the rest of the interview transcripts separately. This process was done for providing the objectivity of the transcriptions and making them understandable and reliable for any reader without listening each of them as well. The same codes used by both of the coders in order to provide the objectivity. The both coders tended to give the same decisions on the data while analyzing it. Hence, under these conditions, data collection and analysis of the data of this study presented a certain level of the objectivity.

One other factor namely "thick description" which can be defined as mentioning about the setting, participants and the context of the study, was also used in order to provide

the validity of the study. In this study context refers to the history of the teacher education system in Turkey before 1982, which was explained above in this chapter. As Patton (2002) said, especially for program evaluation studies including "why" questions, thick description would be important in order to relate the history of the teacher education with the current implementation.

The aim of using "thick description" was to increase the validity of the study while addressing the historical implementations of institutions related with current teacher education. Through this, it would be able to compare the current actions which were initiated after 1982 with the previous actions in teacher education movements to see the tendency of the application and decision strategies of the reforms with their reasoning.

Mentioning about the participants deeply with their specifications in the above tables in the participants section also could be considered as a part of thick description. While describing the participants under some criteria researcher aimed to make the reader understand the participants in detail with all of their specifications. These efforts intended to describe the background of the context of this research.

Another validity strategy was taken in order to increase the accuracy of findings while collecting the data during the interviews. While conducting the interviews, participants were never made feel under pressure or they never hesitated while they were answering the questions since researcher gave the guarantee for not using the interview raw data for any other purposes. Providing the participants with this security was effective in order to get answers from them, which also increased the validity of the results in general.

The interview protocol which was described above in detail could be said to cover major issues related with the general objectives of this study as the majority of the participants thought the content of the interview protocol overlapped with the research questions and aims of the study to a great extent. In this manner, the interview protocol was a considerably comprehensive data collection tool regarding all of the issues in teacher education reforms with all dimensions and applications.

While designing the research, as a first attempt, various data collection methods were employed to generate rich responses to the research questions of this study. Since the participants were directed open-ended interview questions concerning their perspectives, in order to strengthen the validity of the study, mathematics teacher education curriculums (both elementary and secondary) were collected to show the relations behind the participants' perspectives. By means of these documents, it was aimed to see whether the reform studies which participants talked about were reflected in the curriculum or not. The data collection through interviews and documents presented a triangulation technique (Creswell, 2007; Patton, 2002). Patton (2002) says about this type of triangulation that it provides the results of the study with "consistency of information by different means within

qualitative methods" (p. 559). The consistency searched through this study was to show the relations within this phenomenon on the basis of interview reports and written curriculum documents. So, it can surely be stated that data stays on powerful grounds with this kind of triangulation strategy.

3.9. Limitations of The Study

Although having 15 participants for conducting interviews in order to investigate the perspectives is noticeable for this study, collecting documents from one education faculty could be considered as a limitation for this study. Middle East Technical University is a university which could be more independent in implementing the changes in the teacher education programs when compared to other universities. However, this study considers only the teacher educators' perspectives on mathematics teacher education programs and bases on the supposition that all education faculties are mandated by HEC in spite of little differences in implementation of the programs. Since the main focus is the perspectives on the imperatives and the problems in mathematics teacher education programs, investigating the effects of the changes in two or more education faculties would not cause significant changes in findings.

Only a set of participants was involved in the study, and this could be perceived as another limitation. Teacher educators who represented a certain group in the studies of the certain reforms were not involved in the study although they were sent an invitation. However, they did not accept to be participated in this study. We understood these different sides regarding the perspectives of the participants who were involved in the findings of the study.

CHAPTER 4

FINDINGS

Findings of the study will be documented in this chapter in two parts. First part of the findings is based on the responses of the participants for the interview questions, and the second part is the findings from the curriculum documents throughout the years between 1982 and today.

Interviewed Findings

The findings for the imperatives and the consequences of 1982, 1998, and 2006 reforms will be reported first. Then, participants' perspectives about relationships between HEC, MNE, and the education faculties, application of the reforms, teacher education, quality of the teacher, employment, teacher education curriculum, quality of the university, problems in teacher education, and needs in teacher education and possible solutions for them will be presented. The imperatives of the reforms refer to the needs and the imperatives behind them, and the conditions which teacher education agencies were forced to develop mathematics teacher education programs.

4.1. Perspectives on Teacher Education Issues in Turkey

Participants were asked several questions about the teacher education in Turkey and education in general in addition to their views about the 1982, 1998 and 2006 reforms. Their responses addressed important issues such as relationships between HEC, MNE and education faculties, implementation of the reforms, teacher education, the quality of the teacher, employment, teacher education curriculum, the quality of the university, problems in teacher education, and needs in teacher education in Turkey. These issues were not specific to the teacher education reforms implemented since 1982 but they underlined these reforms

and helped in framing a more comprehensive picture of the teacher education in Turkey. These findings are presented in this section.

4.1.1. Relationships Between HEC, MNE and the Education Faculties

The relationships between HEC, MNE, and education faculties were claimed by almost all participants (13 out of 15) as based on personal-political relationships between the people working in these institutions. Participants addressed the lack of institutional relationships and how the personal and political dimensions intersected:

> "[…] If the president of HEC gets on well with MNE, then some cooperation can exist. […] Rather it should be institutionalized. [However,] this issue was personalized or politicized. Hence, these three institutions become enemies though they should be working in cooperation." (P6)

> "Relationships [between HEC, MNE and education faculties] depend on the relationships between top administrators in the HEC and the government. If HEC and the government get on well, then the relationships [between HEC and] MNE go well. Similarly, relationships between HEC and education faculties depend on how HEC views universities and education faculties." (P14)

> "[…] HEC and MNE are actually similar to each other in terms of their mentalities. However, it should be considered as a professional agreement or cooperation instead of political association." (P15)

The influence of such political relationships among the institutions seemed to have limited the cooperation for teacher education.

Participants' expressions suggested that the institutions governing the teacher education in Turkey were strongly influenced by personal and political relationships while building institutionalized and established cooperation policies.

The efforts to institutionalize cooperation between HEC and MNE resulted in the National Committee of Teacher Education despite the highly personal-political nature of the relationship between HEC and MNE. Some of the participants (3 out of 15) expressed their opinions about the establishment of National Committee of Teacher Education in terms of its efficiency:

> "[…] A committee named as National Committee of Teacher Education was established. […] It still seems to exist but not doing any study. Its aim was to gather MNE and HEC [for cooperation]. There were […] three members from HEC. […] Besides, there were some heads of certain departments of MNE such as head of teacher education department, head of personnel department. This committee worked for 5 or 6 years and did many good things." (P4)

For the participant from the Department of Teacher Education in Ministry of National Education, the committee was on duty again:

> "After president of HEC was changed, relationships were reestablished and National Committee of Teacher Education started to go into action. Meetings are done, agenda is determined. […] There is no problem about this now." (P8)

However, a participant claimed the opposite views for the committee:

> "[…] I wrote some articles in order to criticize that issue since the committee named as National Committee of Teacher Education was established but as a mere formality. They are trying to reactivate it nowadays, but [the reactivation] is not based on a program." (P10)

It seemed that although the committee was established to strengthen the relationships and cooperation between the HEC and the MNE, it functioned through the political dimension of the relationship between HEC and MNE.

The establishment of the conference on science and mathematics education was another dimension of the relationship. The participant from MNE argued that these biennial meetings could build a better relationship between MNE and faculties of education.

> "As MNE, our scientific meetings with the teacher education institutions are still going on. We do the congress of science and mathematics education in every two years. Now, we are doing it as eighth time. […] Universities did its first and second organization. They proposed its organization to us by its third time. They said that we do it in cooperation [with MNE]. It is good that MNE is also attending to these meetings and following them. Besides, we add teacher education issue [to the agenda of this congress]. […] Both the researches related with program are increasing and the staff of ministry and faculties are coming together." (P8)

In general, the relationships between HEC and MNE were in political-personal dimensions and the effectiveness of the institutions, which were established by HEC or MNE, depends on these dimensions. However, biennial conferences might help to improve the quality of these relationships to some extent and to increase cooperation between HEC, education faculties and MNE.

4.1.2. Implementation of the Reforms

Considering the reforms since 1982 in Turkish teacher education, most of the participants (9 out of 15) classified the implementation of movements as always from the top to the bottom. During this action, it was also accepted that the attendance of the target group into the decision level in this process was mostly ignored:

> "Reforms, as you know, either comes from the top to the bottom or from the bottom to the top. Of course, it depends on how you will do it. If it comes from the top to the bottom, which means with the directions of HEC, faculty members as the implementers show their reactions when they don't accept it." (P3)

> "[…] When you say suddenly this is not the case anymore, [the implementers react somehow]. The needs of the people who had been focusing on the work should also be taken into consideration." (P11)

Apart from all of these, participants mentioned that the available human resources in the reform movements should be considered with a different perspective:

> "[When we are doing reforms], we are not appreciating the people who are inside the work. I think that the person who will write the program the best is the one who experiences [and implements] it." (P7)

One of the participants also emphasized the expected nature of the reforms done in Turkish teacher education system in general, as in the following:

> "[…] It is possible to say many things about how reforms are formulated. […] Every improvement is a change but not all changes are an improvement. We have some changes, not improvements." (P10)

In brief, it was criticized by the participants that implementing reforms in Turkey were in a top-down approach and reform makers did not pay attention to the target group while taking decisions during reform movements.

4.1.3. Teacher Education

Teacher education issue will be investigated through the participants' perspectives regarding the following: deregulation-professionalism debate in Turkey; pre-defined teacher requirements; artistic and technical sides of being a teacher; entrance conditions to teaching profession; philosophies, characteristics of a teacher, and nature of education.

4.1.3.1. Framing Teaching Profession

In this section, participants' perspectives about the world-wide teacher education trends are presented. Besides, the ideas about the philosophies and policies behind teacher education reforms in general that they claimed are reported.

The answers of the participants (8 out of 15) specified the two edges which were deregulation and professionalism in teacher education. Some perspectives on this debate were as in the following:

> "[In 1998 reform, the decision makers] preferred to make an adaptation while applying the Florida models. Moreover, they might want to plan it centrally, to force a categorical standard program and to control [education faculties]. [In my opinion,] every faculty and every university should follow different models. That is, they should compete with each other, which [leads us to] alternative and liberal education policies. HEC could mention about [some standards] in a general frame; however, HEC do not decide on the curriculum of medicine faculties or engineering faculties. Since education faculties could not prove its adequacy, HEC forces them to instruct [certain] courses now." (P10)

> "[…] Teacher education is a team work. We are supplying the human resource for MNE. We are taking the students from MNE, our resources as a university is MNE. We are educating them and sending them back to work for MNE. We are educating, for example, specialists and teachers and we are [benefiting them] in our researches. […] We should be in a strict cooperation in such a vicious cycle. […] While HEC is determining its policies and MNE is determining its policies, they should be in a close cooperation with each other." (P6)

Similar to these arguments the participant from the Ministry of National Education addressed that education faculties should educate the teachers according to the pre-defined teacher requirements. His expressions showed his position in the teacher education process, as in the following:

> "[…] Ministry has developed the teacher requirements. So to speak, we, as the Ministry want a teacher who has [certain characteristics]. Our Fundamental Law of National Education gives this right [to us]. [Fundamental law of National Education] says that there are three conditions to become a teacher: teachers should have pedagogical knowledge, content knowledge, [and knowledge of] general culture. We are adding some rules to these. Consequently, determining the requirements is one of the duties of ministry." (P8)

One participant expressed his feelings as a response and a summary to the above arguments as follows:

> "[…] Teacher education should be performed through a special project together with MNE and HEC. This work of teacher education is not a work similar to any other areas. If you can conduct teacher education very well, then you are successful in other areas. Today, teachers who were graduated from education faculties are educating the students who will be selected for the medicine or engineering faculties. […] [In this regard,] teacher education should be treated as a project. Turkey puts teacher requirements forward now and then. In the last 10-15 years, I guess teacher requirements were published three times. […] Consequently, you first plan your program according to standards and requirements. There are no standards or requirements, but you form a program. That is, we need to define what kind of teacher we want or what we want." (P14)

While discussing about the issue regarding the characteristics of a teacher and teacher requirements, one of the participants investigated it through a contradictory relation between the artistic sides and the technical sides of being a teacher as in the following:

> "Teaching behaviors doesn't appear on a person via inspiration. I see myself as an inborn teacher but I don't believe it came to me via inspiration. Certainly, there is a need to know teaching methods and techniques. Without learning these, [otherwise] we could close the education faculties and try to find the inborn teachers. […] I always start lecturing with asking a question like 'Is teaching an art or a technique?' Eventually, teaching is both an art and a technique, combination of the two is important. Then we can say that 'let's find

> these artistic teachers' but they may be 1 or 5 out of 100 persons." (P3)

Similarly, one participant expressed his feelings on the characteristics of a teacher regarding the knowledge which s/he gained in his/her teacher education period as in the following:

> "I evaluate teaching with the brain not with the knowledge. If a teacher becomes a teacher based on his/her brain, then s/he does." (P7)

Related with this argument, another participant expressed her perspectives as in the following:

> "[…] There are content knowledge, pedagogical content knowledge, etc. in one side. However, I believe that there are some values which should be instructed [in education faculties to the teacher candidates]." (P12)

Regarding the discussion about the desired kind of teacher, four participants (out of 15) emphasized the entrance conditions of teacher candidates that the quality of the graduates of education faculties depended on the quality of the entering students through the national entrance examination and they explained this issue as an input-output diagram to the researcher during the interview:

> "The resource for teacher education, I mean the input quality is raised now. The levels of the students who rated the education faculties are decreasing and this is very important. The quality of input is related with the quality of output. I think that this is a big advantage for education faculties." (P14)

Briefly, participants explained their opinions about the frame of teaching profession in Turkey through the debate of deregulation-professionalism considering the effects of the expectancies of MNE with the pre-defined requirements of teaching profession. They tried to summarize the characteristics of being a teacher by discussing about the artistic and technical sides of it and they related their perspectives to the conditions to become teacher.

4.1.3.2. Towards Established Teacher Education View

Nine participants (out of 15) expressed that the points of view or philosophies, characteristics of a teacher, and the nature of education as a science had a great impact on the teacher education. The need to accept education as a science appeared as an important issue:

> "[…] [We need to have] an understanding. […] We should build something on top of this understanding. We still lack of this understanding. We lack a philosophy. That means, the question "how a [teacher] should exist?" is not asked." (P11)

> "[…] Teaching requires self-sacrifice. […] Teacher is a laborer [Teacher] is a person who dedicates himself [to teaching]." (P7)

> "[…] It is needed that education is a science. It is needed that there are some methods and ways to learn some sort of things. […] It is

> necessary that the approaches towards education should be changed." (P13)
>
> "[…] [Members of educational sciences departments] claim that education is a fundamental field such as physics, chemistry, biology and education is a science. When they are saying that it is a science, they argue that [education] is a science in which one can conduct basic research. Then, we say that education is an applied area and someone who does not know the truth of school or the truth of being a teacher should not be a teacher." (P15)

Almost half of the participants (8 out of 15) also emphasized the effect of the teachers' own opinions about the continuity of their education and the sustainability of teacher education:

> "[…] I think maintaining the continuity [in education of teachers] is even more important [after the teacher education]. I think that, a teacher should always [be a student]. For me, it is the case for example. This should be brought into the teachers. That is, they should continue to learn during their professional life, there is a need to establish this culture. There is a need to provide several training opportunities for the teachers especially in the first few years of the teaching profession as this is the period in which teaching habits are established." (P1)
>
> "Teacher education should be reframed within the frame of life-long learning principles." (P10)

Participants expressed their perspectives about the teacher education in general. They criticized not having a philosophy of teacher education and they proposed that education should be perceived as a science and the nature of education should be understood, briefly. They also emphasized that teachers should continue their education after graduation as well.

4.1.4. Employment

Employment issue was addressed by the participants during the interviews frequently. Therefore, the findings related to the employment of teachers are presented separately in this section.

Almost all of the participants (12 out of 15) agreed that there was an employment problem for the graduates of education faculties in Turkey. While MNE was not performing accurate annual calculations of the number of needed teachers, HEC would still increase the quota for education faculties:

> "MNE and HEC do not talk about this issue. […] [MNE] doesn't know how many teachers they need. When there is an excess amount of teachers more than 250 thousand, there are still second education programs for certain branches or [HEC] is increasing the quotas of the education faculties." (P10)

> "[…] This is a problem related with employment rather than teacher education but there are too many students in education faculties. And these [graduates] will be [a problem] for the ministry in ten years. […] They cannot be appointed, they will be in trouble and teaching will be perceived different in society." (P1)

The participant from the MNE addressed the contradiction between the presence of the teacher need and the high number of unemployed teachers graduated from education faculties, and claimed other reasons for this contradiction.

> "[…] As you know, a ranking [teachers based on KPSS score] is done because of the lack of sufficient number of [available] personnel position. Teachers are recruited based on the [ranking], but most of them stay unemployed which is not good. […] Ministry of Finance doesn't give the personnel [position] which we requested. […] The need is high but teachers still stay unemployed." (P8)

Some of the participants (5 out of 15) suggested that education faculties should educate teachers considering the needed amount of teachers:

> "The graduates of education faculties are not similar to the graduates of other faculties such as medicine or engineering faculties. [They] can find a job in abroad as well. But, teaching profession is not like this. […] Then, when we take this into consideration, we should educate the teachers we need. […] We were taking some numbers from MNE always in the past. They have some studies which show the needed number of teachers in 2010 or 2015 as an example. These are true values. There should be some planning and no more education faculties should be opened just to take the graduates of high schools." (P4)

Another solution related with the employment of the graduates, which was generated by the participant from MNE, was directing them to the private schools apart from MNE.

> "[However] they can find different jobs or work in private schools. […] These people can [try to] work in different jobs." (P8)

As can be recognized from the above arguments, employment seemed to be the most important problem after graduation form education faculties. Participants addressed the key role of an established relationship between HEC and MNE for the employment of teachers as well. The conflicts and the different points of views of teacher educators and the ministry appeared as the sources of the employment problem.

4.1.5. Teacher Education Curriculum

All of the participants claimed their concerns about the school experience and the teaching practice courses. Specifically, they commented on the current situation of the implementation of the practice courses while criticizing them:

> "In my opinion, one of the weakest aspects of Turkish teacher education system is school experiences and practices. We allocate

> very short time [period] for them and MNE doesn't give the necessary importance to it." (P4)
>
> "Are school experience and teaching practice courses given according to their objectives? I am not persuaded that HEC supervision works about this issue." (P10)

The other course that the participants (6 out of 15) found very important regarding the relation with the teaching practices courses was teaching methodology courses given in second and third years of the education:

> "[…] Teaching practice courses should be integrated with the courses in education faculties. [Otherwise,] they are remained in suspense. Especially, [teaching practice courses] should be well integrated with methodology courses." (P1)
>
> "[…] [The student] goes for practice [to schools,] in the first and second semesters of fourth year, there are also methodology courses. There is another [methodology course] given in first semester of third year as the beginning. Consequently, [the implementation of methodology courses and the amount of them] are establishing the parallelism to teaching practice courses very well." (P12)

The participants' perspectives on the teacher education curriculum considerably varied. Only one of the participants commented that there should be a standard curriculum for all education faculties as in the following:

> "[…] If we will determine our standards by ourselves, there is no need for an outside mechanism. However, as we cannot agree on the simplest thing among us, teaching profession should be based on some standards, I believe. It is not the kind of business of any faculty." (P15)

Some participants (3 out of 15) defended that universities had an autonomous structure so that education faculties could determine their own curriculum according to their strengths:

> "[…] Instead of a program change from the top by HEC, every discipline such as elementary mathematics education in Hacettepe [University] or the one in METU has different essentials. These differences determine the students' entrance scores to the universities already. Hence, changes in the programs could be done by emphasizing the universities' differences." (P12)

As a third group, some of the participants (4 out of 15) expressed that there should be standard curriculum but education faculties should be allowed to implement some percentage of change in the curriculum. This change could take place in certain pre-determined issues in curriculum, such as the general culture courses or elective courses:

> "I am against to standard curriculum, that is, I am against the application which covers the same fixed courses thoroughly in every university. But, some certain standards should be determined such as, students have to experience a good teaching practice or they have to know some certain abilities about classroom management. […] But, there is no need to say that [student] should take that course which has

> that catalog number. […] It is unnecessary to define all of these details." (P1)
>
> "I cannot say that I do not [support] a standard curriculum, that is, it is beyond that. Standard curriculum is like a constitution. […] There are themes inside [the teacher education program] and they should be differentiated according to the needs of the children and the places. Consequently, teachers do things different from the needs of the children since they are educated by a centralized curriculum." (P11)

One of the participants criticized that general culture courses such as anthropology, philosophy, communication, sociology, or psychology should be added in every teacher education curriculum in a more organized and structured way. He emphasized that this was an insufficient side of the teacher education curriculum:

> "[…] The fundamental thing here is what teacher should know, this is what we mean by philosophical stance. Teacher doesn't know sociology, doesn't know history of thinking, civilization, doesn't know what secular government is, and if s/he doesn't know the connections with enlightenment, reform, Renaissance movements of this discussion, if s/he doesn't know Spinoza, Erasmus […] There is no philosophy course in teacher education. […] Let me say one practical thing: A teacher should know first-aid and how to stop bleeding as an example, but our teachers don't know this." (P10)

Another issue about the teacher education curriculum was the change in minor area implementation in elementary education programs in education faculties. Two participants discussed this implementation which was cancelled in the last reform in 2006. They supported the idea of giving some other alternatives to the students in education faculties in order to develop their points of view, but they claimed that the implementation should not be limited with certain departments or should not be compulsory for some departments as in the past:

> "[…] Minor area application should not be like in 1998 reform. The problem was that it is said to you that you have to do your minor with science education. And, almost all of our graduates didn't use this as an advantage. […] Minor area application should be voluntary. If a student wants to study mathematics education as a minor then the courses should be determined specifically not only for the students of education faculties […] but also for the students outside of the education faculties." (P1)
>
> "[…] Minor area application is especially considered as important by the modern university apart from education faculties today because you open a second door to the student and you provide him/her to study with a second discipline." (P15)

Participants expressed their perspectives about the teacher education curriculum regarding the current situation of implementation of teaching practice courses, methodology courses and minor area mostly. They also discussed whether a standard curriculum should exist or not mostly by stressing the difficulties of implementing a standard curriculum.

4.1.6. The Quality of the University

The issue regarding the influence of opportunities at the universities on which teacher education was carried out was raised by some of the participants (5 out of 15). One of them argued that there should be some leading universities in some certain cities in Turkey and they should be the only institutions educating all teachers of Turkey. However, while considering being a campus university, some of them expressed that teachers should be able to select different general culture courses from different departments according to their interests since a teacher should be educated through an interdisciplinary perspective:

> "[…] [This is] an institution that offers doctoral programs. [Therefore, this university] is different from the other universities because we train instructors for education faculties. METU, Hacettepe and maybe Gazi Universities […] which are in Ankara are very critical universities." (P3)

> "[…] Teacher is not the person who knows some certain things. His/her cultural and education level and some other [characteristics] should definitely be well-developed. Because of this, [teacher education] should be served in big cities." (P4)

> "The university which serves teacher education should be a campus university and should be in a good environment. But I think the main issue is the existence of opportunities of the instructor quality, technical facilities, equipments, computer [availability], library, and internet usage. I think these kinds of opportunities influence the differences among the universities." (P1)

The lack of opportunities in countryside universities were considered as a disadvantage by some of the participants (3 out of 15). One of the major disadvantages was the lack of sufficient number of faculty members:

> "[…] [It is possible] that there are differences between universities, but it is not good for the universities to have big quality differences. Particularly, I think that there is a difference between countryside universities and developed universities. [There are universities] with a [teacher education] program implemented by only one faculty member. [Our program] used to be like that. These will [cause] problems." (P1)

The opportunities presented in education faculties were discussed in this part briefly while comparing both the facilities offered in countryside universities to the universities in big cities as well as the campus universities to the other universities.

4.1.7. Problems in Teacher Education

In this section, participants' perspectives about the teacher education problems in Turkey in general based on their responses in the interviews are presented. The issues mentioned in this part were not specifically related to the 1982, 1998 and 2006 reforms. All

of the participants have stressed several issues or problems related with teacher education and these problems will be reported in detail in this section.

The most frequently stressed problem in teacher education was the insufficiency of educator or teaching staff in education faculties as agreed by almost all of the participants (13 out of 15):

> "The first issue is the teaching staff problem. In my opinion, Turkey still could not solve the problem of teaching staff [who is] training teachers. Education faculties grew up very fast. Maybe education faculties are the ones which have the most negative indicators in terms of the ratio of the number of teaching staff to the number of students." (P14)

> "I have some hesitations about the implementation of some general culture courses. There is a philosophy of education [course], there is not any educational philosopher. There is a history of education [course], there is not any education historian. […] [We lack] educational sociologist, educational philosopher, [and] education historian. Who will instruct [these courses]? […] Even, there are universities without any teaching staff. They could just bring their teaching staff from high schools." (P6)

Two participants strengthened their arguments about the insufficiency of teaching staff in education faculties by providing current statistical information of education faculties:

> "[…] Almost 40 universities were established in the last 1-2 years in Turkey. In the 84-year history of Republic, the established university number is 54. The number of the universities established in the last 2 years is 45. Can it be possible? […] We see how politics made appropriate decisions in Turkey. […] The load of this to the system will be seen in the next ten years and university system will be distressed because they will take a lot of students [to these universities] with no faculty member. […] This is the biggest problem, one of the biggest problems." (P15)

> "[…] How do you send 2000 students to the X University, and if this is the case how do you send 150 students to Y University? There are 150 faculty members in Y University; however there are not two faculty members in [X University]." (P10)

One important issue stressed out by more than half of the participants (8 out of 15) was not having an educational policy or educational philosophy. The idea was that without having a major goal or an objective, a successful ending could not be reached. Three of these eight participants drew attention to the political reasons for this lack of ideology or philosophy and found this as a serious problem. They mentioned that education was always affected by the governments and politics:

> "[…] Education faculties should not be opened just to accept high school graduates into universities. Some other faculties could be opened, such that a business manager, an economist could work every time in everywhere. […] But, teacher education should not be like this. That is, […] educating the needed and well-qualified teachers in

> big cities should be in the education policy of Turkish National Education and HEC." (P4)
>
> "[…] An educational policy cannot still be established in Turkey. There is an example of village institutions which was [strongly] established. But just because of this, they were closed. There is a higher teacher school example, it was established well. The 85% of the graduates of them are now faculty members at the universities. But, they could not develop any educational policy after [these schools]. […] Why? Because, there is no educational policy in our country. What exists [instead of this]? There is Minister Policy. Minister comes, education policy changes; Minister goes, [next one] changes it too. They are all well-intentioned. […] But, there is a mistake in the system." (P7)
>
> "[…] Today education faculties still have the worst conditions in terms of the number of students per faculty member, particularly per professor. We see that HEC does not have an education policy of considering education of the [needed] human source as a priority. [It] did not have it [before] and it does not [have] it today. […] That is, teacher education was not considered as a macro level policy. […] In fact, [whether] we have an educational policy or a science policy is [questionable]" (P10)

Regarding that the problem in the number of needed faculty members in the expressions above and showing the close relationship between the educational policy and recruitment of faculty members, it can be recognized the effect of lack of an educational policy onto teacher education.

The differences between the educational faculties in terms of both academic structure and facilities were addressed by some of the participants (4 out of 15) regarding the quality of teaching staff employed in them as well. They also compared the education faculties with the other faculties especially with medicine faculties while pointing out the ratio of the number of academic staff to the number of students. Besides, after some regulations the efforts to increase the number of students in education faculties were useless and participants thought that this would led more serious problems in future:

> "[…] I think that there are very powerful [education] faculties and they have very powerful teaching staff. As opposite to this, there are very weak faculties and they have very weak teaching staff. Why? The success of education faculties is much related with the teaching staff. I think that programs of educating teacher educators should be developed and been faster as providing quality." (P11)

Some participants (2 out of 15) thought that agencies related with the teacher education did not concern the striking teacher education trends in the world since they claimed that monitoring the education outside of the country was necessary.

> "[…] There is something done, maybe it is worse than before but generally […] there is an understanding of keeping up the latest trends. We are very apart from the world in terms of teacher education. That is, we could not benefit from the world's experiences.

> Today, we do not know how a teacher is educated in Finland, but we are interested in the PISA results. Our children do not take bad points, they take the worst ones." (P10)

The biggest problem that has been stressed out by nearly half of the participants (7 out of 15) was the financial issues and the percentage of the budget which was seen as suitable for education by the government. Participants also compared education faculties and their facilities with other faculties in terms of money and the other staff conditions:

> "[…] In my opinion, the most problematic issue is the need for resources such as […] financial resources. In order for this, points of views should be changed. Education faculties are still thought to be as the stepchild of the universities. […] When there is a need to [reduce] the [budget], the financial resources of education are limited. Education is the first thing which is sacrificed." (P13)

Another problem about teacher education emphasized by the participants (6 out of 15) was the issue of the KPSS examination. Since many graduates of teacher education programs were waiting to be employed in public schools, KPSS scores of these teachers have been used as the entrance requirement. This would present result in serious problems:

> "KPSS will be very serious problem in the future. […] KPSS does not measure whether the candidates are good teachers or not, rather it measures whether the teacher candidates have some certain knowledge or not. […] Since KPSS is very important for being employed, […] especially last year students [in the teacher education programs] go to KPSS courses just like the high schools [students]."(P1)

> "If you evaluate only the product with an indicator [like KPSS], ignore the process and if your success is measured with your students who take the KPSS, then it should not be found strange that many universities in Anatolia have some KPSS preparation courses." (P3)

The comments of the participant from the department of teacher education in MNE participants KPSS examination were noticeably different:

> "[…] When there is an excess amount of teachers, an elimination system is done. Here, we take the successful teachers according to the KPSS exam, but telling that unsuccessful ones are eliminated is wrong. Every teacher who is graduated from the university is a teacher." (P8)

Almost half of the participants (7 out of 15) claimed that the opinion of education faculty members about education, education faculties, and teachers were disappointing. Even basic understandings that were likely to guide policy were not established by the educators:

> "People in education faculties even the faculty administrators consider educational environment in only four walls, and they believe that a blackboard, a table and chairs would be [enough] for education to happen." (P6)

Conducting educational research through the education faculties was one of the driving motives behind the 1982 reform. However, some participants (5 out of 15) claimed that many education faculty members were conducting studies in other fields different from educational sciences. Moreover, the studies these faculty members conducted were not up to date:

> "[…] Unfortunately, education faculties still work as if arts and sciences faculties. The number of people who conduct research on teacher education is still too few." (P4)

> "[…] S/he is a mathematician but s/he works in the faculty of education. S/he insults the education faculty and does not conduct any education research. S/he doesn't contribute to the other side either. That is, education faculty is not the place which the [graduates of] arts and sciences faculty [are employed when they] could not find a job." (P6)

> "[For example,] our mathematician friends just discovered to develop a mathematics attitude scale and they are working hard on how an attitude item is written. However, there is no need to study on this anymore. […] Besides, they do this while thinking that these studies are for education." (P13)

Another important problem was related with the functioning of Higher Education Council. Four participants claimed that the council did not develop planning approaches. Then they argued that relationships between HEC and education faculties were problematic:

> "[…] The number of teachers needed for [each] field should be well-planned. It is interesting that while we were increasing our quotas by 20-30% 4-5 years ago, we decreased them by 25-30% in the last 2-3 years. What happened? On which data these fast increases and decreases are based in a country? […] There is a planning approach which is not based on data here and I am seriously criticizing this." (P14)

> "HEC does not determine the programs of the medicine faculty or engineering faculties. [However,] HEC can impose that [we] will instruct [specific] courses because education faculties have not proven their [capability]. This is the issue that education society should think very seriously. […] HEC does not know how many teachers [are] needed or what [is] needed. Although there are more than 250 thousand spare teachers, […] the quotas [are] are still increased. These two institutions could not [agree] with each other to discuss how many [teachers are] needed." (P10)

Some of the participants (2 out of 15) drew attention to the implementation of graduate programs without thesis in education faculties as well as the additional one year program for the students of science and literature faculties who wanted to be a teacher. They thought that these programs had problems in their implementations:

> "[…] The structure of the graduate programs without thesis were rebuilt but they have less quality compared to the previous one. Moreover, the three-semester courses were reorganized as two-

> semester courses. That is, decreasing the duration and accepting it as a master degree is another topic for discussion." (P10)

Participants in this study remarked that there was a problem both among the faculty members in one faculty and between the faculties. They (3 out of 15) complained about this issue as in the following:

> "[…] Academic people always tend to behave individually like living in a closed box and they cannot meet with each other often. That is, there is no synergy but there should be a synergy and cooperation among us, and we should discuss education very seriously." (P15)

Some of the participants (5 out of 15) pointed out that "since teacher salaries [were] problematic, teachers [were] very concerned about their future and this fact affect[ed] their working habits, so it [was] another problem that people face[d]" (P4). Three of the participants mentioned that the financial and social status of being a teacher had considerable impact on the decision to become a teacher:

> "[…] There was an understanding in the past. My child would become a teacher if s/he could not manage any other profession, or my daughter would marry with a teacher if s/he could not marry with another. These ideas have not been eliminated yet. The social status of teachers did not become higher, and so did their salaries." (P7)

> "[…] We are following the world-wide improvements. We investigated the social status of teacher. In almost all of the countries the social status of the teachers are the same in terms of their salaries and social status, and so are [in Turkey]. There is a value [for being a teacher] in the society. Unless the values of society do not change, being teacher remains in the same level." (P8)

> "There is a need to encourage people to become a teacher taking its value in the society into consideration. Of course, this is very much related with the income of [the teachers]. […] I think that these two are very problematic issues." (P11)

Another problem was related with the programs of mathematics teacher education and especially the implementation of the practice teaching courses. When the implementation of these courses was considered in terms of the cooperation between MNE and the education faculties, the problems were mainly related with the procedures and the mentor teachers in the practice schools.

> "I don't believe that good practice is being done. […] Faculty members are not controlling. [Teaching practice] is conducted through the authority of the mentor teacher in the classroom. […] The number of students is quite high and schools just accept this because [mentor teachers] are paid. This practice doesn't reach its aim." (P6)

In brief, participants of this study stated that the lack of teaching staff in education faculties and the lack of education philosophy and educational policy were the major problems of teacher education in Turkey. They also emphasized that there were remarkable

differences between education faculties in terms of their structure and facilities offered to prospective teachers. They mentioned about the financial problems that teacher education faced in Turkey and the implementation of KPSS examination as important problems. Participants evaluated the perception of teacher educators about education, conducting researches in other fields, lack of planning approaches by HEC, lack of synergy among education faculties and in teaching staff of one education faculty, teachers' low salary and the implementation of teaching practice courses as other notable problems of teacher education.

4.1.8. Needs in Teacher Education and Possible Solutions

In this part, the needs and possible solutions advised by the participants during interviews are presented.

Participants strongly addressed the need for the accreditation and the continuity in education society. They claimed that when a new thing would be introduced to the education faculties, then it should definitely be followed, measured, and evaluated. After these follow-ups and evaluations, next changes should truly be done according to the reports of these evaluations. Hence, most of the participants (10 out of 15) thought that there was a need to have an inspection mechanism for every agent related with teacher education:

> "Some inspection mechanisms and accreditation mechanisms should function. But, unfortunately there is not a structural or institutional flexibility in HEC." (P1)

> "[…] A quality assurance system should be established [in teacher education]. That is, a mechanism which follows the quality should be developed. You put the standards, planned the program, you thought that you educated good teachers [and] you formed an input of good students [into education faculties]. [But,] you do not have a system which defines, follows, and evaluates the quality of output and the quality of the process. A mechanism like this should be established. […] It is called accreditation council as well." (P14)

> "[…] There is new knowledge. There are new researches; there are new points of view. Consequently, [accreditation] never ends; it is a concept which will be pursued." (P2)

It is worth to add the perspective of the participant from MNE about accreditation and continuity in teacher education:

> "[…] There is a need to have a continuous cooperation [between ministry and HEC] in [teacher education], it does not work with the efforts of one side only. Both ministry and HEC should work cooperatively and should develop teacher education continuously. The idea 'we did it, and it is finished' is useless. Continuous development [is needed]." (P8)

Additionally, one expression from a participant addressed that teacher education should be continuous:

> "[…] The collaboration [between MNE and the faculties] and the bilateral understanding should be well-established continuously. There should not be any disconnection. When disconnection happens, our education policies are getting wounded. So, then there is a need to work much and to be updated continuously in order to eliminate the failing parts." (P3)

Another remarkable point was that some participants (4 out of 15) complained about being far from the other faculty members and they said that academic staff in education faculties needed well-organized academic communities, and according to their suggestions, these communities could be in every city or could be regional. It was essential for these participants that teacher educators would share their ideas more seriously, planned, and continuously:

> "[…] We need to increase the centralized cooperation or in the same manner, we need to increase the interaction between the departments in the same faculty." (P15)

> "[…] [Well-organized academic communities] should be wide-spread and should be taken into consideration in the following studies." (P3)

Similarly, the cooperation between faculty members in education faculties was an important issue for the participants. The majority of the participants (9 out of 15) considered the wide-spread cooperation and collaboration between MNE, HEC, and education faculties as very important:

> "[…] University could conduct some studies in collaboration with 5-6-7 schools. [These schools] could be universities' pilot schools in which employed teachers could [benefit from this cooperation]. It is necessary to establish such kind of organic connections [and] mechanisms [between MNE and education faculties.]" (P2)

> "[…] We, as the department, need a few schools of MNE in which we can work at hand. And, we as the department should be helping for what these schools want and need." (P12)

> "NCTE should be organized to function again since it is one of the essentials of cooperation between HEC, MNE and education faculties" (P4).

Similarly, the participant from the MNE pointed out that such cooperation would be possible through the reactivation of National Committee of Teacher Education (NCTE):

> "[…] It is necessary to have bilateral cooperation and collaboration [between MNE and education faculties]. Now, [after reactivation of NCTE] a consistent collaboration has started." (P8)

Accordingly, some comments related with National Committee of Teacher Education (NCTE) follows the discussion above. One of the participants who worked for the

committee before its first establishment proposed as in the following: “NCTE should be organized to function again since it is one of the essentials of cooperation between HEC, MNE and education faculties” (P4).

Additional platforms such as conventions, workshops, or conferences should be increased and some of them should be organized in a regular and continuous way as two of the participants suggested:

> “More thematic meetings could be organized, more workshops, more conferences, more conventions could be arranged. It is beneficial to consult on the views of people.” (P10)

The participant from the MNE stressed out that the biennial organization of science and mathematics education congress ensured the interaction between MNE and the education faculties.

Participants mentioned about the need for more teacher educators in Turkey. Some participants (3 out of 15) suggested structural improvements for the graduate and doctoral programs in education faculties in educating teacher educators:

> “[…] Real graduate and doctoral programs should be [improved] and they should be essentially productive and useful for education faculties or the existing graduate and doctoral programs should be developed according to the needs” (P1).

Additionally, five participants (out of 15) suggested that more students should be sent abroad in order to be trained as teacher educators:

> “We need to educate teacher educators. And the source of this should be abroad [since] we do not have possibilities to achieve this. [Because] I came from agriculture faculty, for instance, I am living difficulties when [educating teacher educators.] So, the program [which was held before] should be performed again. Now, the priority is not on the education faculties. One third of the [students who were sent before] were for the education faculties.” (P4)

> “[…] The ideal one is to educate the teacher educators [in Turkey], [but] it was not possible, and it is still not settled in educational area. […] Strategically, the thing which [HEC] should do is to gather the people who are graduated from doctoral programs in abroad in some regions in Turkey. For example, [they] should construct some communities in Mediterranean, Middle Anatolia, or İstanbul and very good and real graduate programs should be formed in these communities [in order to educate the teacher educators.]” (P1)

> “[…] HEC should send its teaching staff abroad in regular periods [in order to provide them with] new experiences. With all of these [efforts], government should do its best.” (P13)

Some participants (3 out of 15) also addressed the faculty member training program (Öğretim Üyesi Yetiştime Programı-ÖYP) as very efficient. They suggested that the program should be pursued in the future by increasing the number of accepted students and

establishing some standards for the universities in which teacher educator candidates would be educated:

> "[…] The faculty member training program was formed very wisely [in order to serve for the need of teacher educators in education faculties] and it performs successfully. […] However, [this program] should be limited for certain universities in order to [ensure the quality]. […] Not every university is suitable to provide [the faculty member training program]. That is, it should be decided depending on their current teaching staff." (P13)

Related with training the academic staff, participants (4 out of 15) recommended that every teacher educator should be followed and they should be educated continuously in order to have teaching experience in education as well. Summer schools or in-service training seminars could be organized for them by the education faculties as they proposed:

> "[…] There is a need to follow and evaluate the teacher educators. Teacher education institutions should be evaluated for whether they can continue [to educate teachers] or not after the first recruitment of teaching staff. Some performance evaluation mechanisms should be introduced for evaluating in terms of both the quality of publications and teaching abilities." (P14)

> "[…] Teacher educators should have teaching experiences for at least two years as performed like in the MBA graduate or doctoral studies. If they do not gain such experiences, they should complete their experiences in the practice schools during their research assistantship period. […] We need to make them obtain these teaching experiences." (P3)

In order to maintain the quality of the education faculties, one of the participants suggested the circulation of teaching staff in education faculties all around the country:

> "[…] Teacher educators should be sent to different education faculties regularly as like it has been done for teachers working for MNE" (P11).

There are some needs related with the educational literature concerning the quality features of publications produced in education faculties as well. Almost half of the participants (7 out of 15) claimed that education faculties still had inadequacies in the literature they produced and there were problems in the implementation of the findings of studies. They addressed the need for conducting more culture-focused and more need-oriented researches. They suggested that educational researchers should be directed to design their studies qualitatively and longitudinal:

> "[…] One problem is that we are making our students to conduct some researches, but [the findings of them] are not being reflected. This can arise from us or from the Ministry. That is, it is needed to conduct researches which are intertwined." (P2)

> "[…] We have assumed a title with our publications and we are serving publications but the findings of these researches are not

> consumed by the system. We are not doing studies as to be consumed. We need to perform studies to serve directly for the problems of the system and we should evaluate them for whether they are effective or not when we implement them. […] Do some qualitative studies, enter to the system. Name it, and conceptualize it. […] The knowledge should be produced from this culture from now on. We are evaluating the knowledge produced by others whether it matters here or not. Could it be possible?" (P6)
>
> "[…] Academic people should be encouraged to perform more serious publications" (P10).
>
> "[…] We should do longitudinal researches, that is, there are not wide scale studies. These, of course, should be supported studies. […] The potential for doing researches has increased, researches have increased, but we need to take more steps in the scope and depth." (P15)

Regarding the problem mentioned in the previous part that teaching staff who came from arts and sciences departments were still continuing to make researches on their major area; the participants suggested that publications related with these studies should be evaluated according to some standards including legal responsibilities:

> "[…] Because academic staff of education faculties are not as capable as to conduct educational researches, necessary studies cannot be done. […] The people [who came from arts and sciences departments] have to give up doing research on that area and they need to study on teacher education. They should be forced to do this. There are some legal responsibilities. In fact, they cannot be professor or associate professor with these publications. We were tolerating them at the beginning [of education faculties], but we should not tolerate any more." (P4)

Another point suggested by some participants (3 out of 15) was that teachers should be educated according to the regional needs in terms of quality while arguing that the needs of the eastern parts differed from the ones of western parts of the country explicitly. These participants were also against to the nation-wide standard teacher education curriculum in education faculties. Their suggestions were as follows:

> "[…] Why is the curriculum of education faculty in X University (a university in south-eastern part) same as with the curriculums of education faculties in Y University (a university in middle-Anatolian) or in Z University (a university in the capital city)? There is no logic here. Some differences could be created according to the regional needs or the [university] varieties. This arises from the lack of confidence to the teaching staff of administrators [in HEC] and it could be a subconscious confession which the education faculties do not have the universal standards still." (P10)
>
> "[…] For the X University (a university in eastern part), 40-50 students should be selected according to the needs of that region. They should be educated according to [the needs of that region]and they should be educated properly." (P1)

One of the participants recommended a regional instruction according to branches in order to eliminate the excess amount of teachers graduated as in the following:

> "[…] Every education faculty should be reorganized in every region so that each education faculty could be specialized for educating a specific branch" (P11).

In addition to the suggestions related with the needed quality of teachers discussed above, five participants suggested that MNE as the major employer should conduct some human resources planning in order to determine the needed amount of teachers:

> "[…] We do not have human resources planning. […] We need to make human resources planning. That is, [we should determine] how many mathematics teachers we need at real. If [the needed amount] is 50, then [the number of teachers graduated] will be 50. However, we need 30 [mathematics teachers], but 3000 mathematics teachers are graduated every year." (P7)

Related with the issue of human resources planning, the number of the education faculties and the number of the students accepted for education faculties came into prominence. Some of the participants (10 out of 15) claimed that their number and capacity should be decreased and the evening programs (second education) in education faculties should be closed:

> "[…] The quotas of the teacher education programs in universities which is determined for the national examination (ÖSS) should not exceed 50 everywhere [in Turkey]. For example, X University (a university in mid-Anatolia) has a capacity for 100-200 students." (P1)

> "[…] In my opinion, the evening programs (second education) [in all faculties] should be terminated immediately at all universities. This is valid for education faculties predominantly as well. The number of the students should immediately be decreased in order to educate more refined and qualified teachers. Besides, the number of the programs in some education faculties needs to be decreased." (P10)

The suggestion made by the participant from MNE in this study was for education faculties such that they should educate teachers according to the MNE studies on the requirements of being a teacher. Recalling that fundamental law of national education gave to MNE the right to determine the qualifications of teaching profession, he expressed his perspectives as in the following:

> "[…] The aim of those studies was to determine the requirements and necessities to direct the education faculties based on them" (P8)

Related with the curricula in education faculties, there were some recommendations that the duration and the organization of teaching experience courses should be revised. Concerning the problems in implementation of the practice courses in public schools, some new implementation models for practice teaching and school experience courses should be developed as proposed by some participants (3 out of 15) and these improvement studies might be performed in a cooperation of MNE and the education faculties together:

> "[…] People complain about the lack of knowledge when students first go to experience. When you send the students [late] to practice, they complain that students are too full with the theoretical knowledge. […] Unless we do not find the model which enables students both to learn the theoretical knowledge and to practice it at the same time, there will be complaints [about teaching experience courses]." (P9)

Regarding the selecting of students of education faculties as an issue for teacher education, some participants (2 out of 15) proposed a selection model since it was a necessity to change the idea that every person could be a teacher:

> "[…] A special selection system could be introduced as [in the selection of the students to fine arts faculties such as] theatres. It should be asked for the reasons why the student wants to become a teacher in a written format, it is needed to measure his/her oral communication skills and [the candidates] might be asked for a sample lesson to practice." (P10)

Lastly, some participants (2 out of 15) argued that teacher education issue should be recovered and re-discussed as a project in order to improve it in an efficient and powerful way as expressed in the following:

> "Teacher education as a work is not only considered as the common point of education reforms as well as in all developed countries. Consequently, [teacher education] should be revised as a project again." (P14).

As a summary, the needs and the possible solutions gathered predominantly around the issues of lack of teaching staff in education faculties and the capacities of them. Participants mainly generated solutions in order to eliminate the problems regarding the needs in these elements in Turkish teacher education system. Participants of the study expressed the needs and the solutions for the problems of teacher education in Turkey in this part. The needs were implementing accreditation in teacher education, continuous evaluation of teacher education and being up-to-date, having well-organized academic communities to share ideas, and establishing collaboration and cooperation between HEC, MNE, and education faculties. Besides, there was a need to have additional platforms such as conferences, conventions, and serious graduate and doctoral programs. In order to train teacher educators, people should be sent abroad as well. In addition, they suggested that faculty member training program (ÖYP) should be developed. Every faculty member should be provided with summer schools or in-service training seminars. Circulation of teacher educators all around Turkey should be generated. There was also a need in literature concerning quality features of studies as more culture based and need-oriented studies should be done in education faculties. Studies of teacher educators should be followed and evaluated according to pre-defined standards. Teacher education should be based on the needs of different regions, as offered by the participants. There was also a need to select

students for education faculties as well. They also proposed that teacher education as an issue should be reformed as a comprehensive project.

4.2. 1982 Reform

4.2.1. The Imperatives of 1982 Reform

The basic imperative behind 1982 reform was the insufficiency of the previous teacher education institutions as most of the participants (10 out of 15) claimed. One of the participants argued as in the following:

> "[…] When we came to the 80s, it appeared that teachers should have a bachelor's degree as well. The aim for the establishment of education faculties might be because of this. That means, a transition happened from being an educator to being a teacher. 1982 reform was important because it aimed educating the teachers with a bachelor's degree." (P3)

In general, the participants claimed that the imperatives behind 1982 reform were parallel to only the general trends in the world in the 1980s. Some participants (7 out of 15) also mentioned that after the period in which the teacher education had a disorganized structure due to the political instability of 80s, this worldwide trend was an efficient action since universities had an autonomous structure and they could isolate themselves from the political pressures. One of the participants commented on this as in the following:

> "[…] One of the imperatives [of placing teacher education under universities] was that [teacher education institutions before 1982] were politicized. But I guess this was not mentioned in written documents clearly, maybe in some different formats." (P14)

Three participants considered the worldwide trend as the only imperative. Moreover, training the teachers through the universities was a necessity because of the changes in Turkish teacher education in terms of duration and level as time passes. Because, the duration of education in teacher education institutions from its earliest times has been in a continuous increase before 1982 and its level has been always upgraded. For example, teachers had high school degree in the past. Besides, establishment of education faculties would mean conducting research in education which was a need of teacher education in Turkey. Since universities were considered as the only places that a research could be conducted, some participants (6 out of 15) addressed this as a necessity and accordingly as an imperative for this reform.

> "[…] Conducting researches in education cannot be done in higher teacher schools or teacher education courses or through pedagogical formation courses." (P4)

> "[…] Even if you want to train a person for a profession, there is not [unchanged] professional knowledge, professional knowledge is

> always changing. [A changing] professional knowledge could only be within the understanding of universities." (P9)

P4 also evaluated the education faculties while assigning another role and emphasizing research in education faculties as in the following:

> "The only aim of the universities is not to educate the teachers, not to educate the students. There are some other missions [of the universities] as well [such as] educating the society [and] conducting researches." (P4)

Nearly half of the participants (7 out of 15) considered the needs of the teacher education before 1982 in Turkey while referring to the effectiveness of the 1982 reform. Taking the teacher education history from the republic times into account, the reform in 1982 was considered as an important turning point for the teacher education in Turkey as the participants addressed as a "touchstone":

> "[…] I consider [the 1982 reform] as very important. The year 1982 is very important for education faculties, that is, in terms of teacher education. […] [Before 1982] anyone who wants to be a teacher could find a way to do so, it was provided through some sort of ways. But, it was said that if anyone wants to be a teacher, then s/he has to be graduated from education faculty after establishment of education faculties in 1982." (P4)

Only one participant who was a higher teacher school (Yüksek Öğretmen Okulu) graduate was not supporting 1982 reform. He compared educating teachers under education faculties to the previous teacher education systems such as village institutions or higher teacher schools as in the following:

> "[…] After 1982 the aim was that teachers would have more knowledge. This is important but not comes as first. Of course, teacher will be knowledgeable but the first important thing in being a teacher is pedagogical knowledge" (P7).

He argued that the only way of pedagogical education of teachers could be made under the kind of boarding schools such as the village institutions. However, he accepted the idea that teachers should be educated with denser curriculum in terms of content knowledge and also the previous teacher education schools were not sufficient enough to educate the teachers in content knowledge. Similarly, one participant addressed her point of view about the effectiveness of 1982 reform as in the following:

> "[…] I don't take the 1982 reform as […] a serious reform. The only point here is, like [the law of] Tevhid-i Tedrisat, education activities are proceeded by the universities. […] There are only a few correspondences between MNE and HEC […] such as increasing or decreasing the credits of the courses. Apart from these, there is nothing serious which can be acceptable as a reform." (P6)

Overall, mainly the persuasion in the 1982 reform was educating the teachers at the university level, which was a world-wide trend. The need for conducting research on education under the universities was also an emerging imperative for 1982 reform.

4.2.2. The Consequences of 1982 Reform

When talking about the consequences of the reform in 1982, all participants mentioned that although this action was very necessary, universities were not ready to educate teachers on their own since universities lacked faculty members particularly specialized in teacher education area in 1982. Some participants (6 out of 15) addressed this issue:

> "[…] Universities are so inexperienced [about teacher education] in general. […] There are slight movements nowadays." (P1)

Two participants also argued that some universities might still have the same problem. They added that education faculties would be more effective in the following days when stressing that this reform could be successful only when it was considered for a long term.

Some of the participants (6 out of 15) mentioned that educating the teachers under universities resulted in the improvement of teacher education through conducting researches as in the following:

> "[…] The strengthening of teachers academically begins in 1983 [with the establishment of education faculties]." (P15)

The participants (2 out of 15) who were not satisfied with this reform claimed several problems. They stated that education faculties could not execute their functions of educating teachers. One participant explained this as in the following:

> "[…] Teacher education institutions have been transferred to education faculties just in format, but they could not serve functionally" (P5).

There were several teacher education curricula used by education faculties all over the country after 1982, which was accepted as an insufficiency by the participants. Some of the problems in education faculties were related with the lack of specialized faculty members and teaching staff in education faculties. When all of the institutions were transferred to education faculties all around the country, their teaching staff was accepted as university members, which resulted in problems:

> "[…] There were not enough qualified faculty members to work in education faculties in Turkey [in 1982]. I was one of them. [They] took me [as a faculty member] but I was a graduate of agriculture faculty. But, there was nothing to do [apart from this]. [Employing faculty members] was performed with either people from science faculties or agriculture faculties or from a similar institution." (P4)

Because the majority of the instructors in education faculties were from some other faculties especially from the faculties of arts and science and their origins were science rather than education or pedagogical education, most of the research conducted at education faculties were on pure science rather than education during the first years of education faculties as claimed by the participants. In fact, some of the participants (4 out of 15) claimed that some education faculty members would still conduct research on science as an outcome of 1982 reform:

> "Education faculties are under the effect of arts and science faculties. We are always fighting on it here. […] Your studies are not based on teacher education, you came here from arts and science faculties, but you still keep on doing research in that way." (P4)

Considering its implementation, one of the participants addressed that the 1982 reform had some insufficiencies as in the following:

> "[1982 reform] was an unplanned [reform]. Maybe [1982 reform] was something that must be done but they didn't know how it will be done through which program approach or in which frame of principles. [They only had] the idea of gathering them together. Moreover, while they were forming the programs, [they didn't] try to provide a parallelism to the trends in Europe in terms of the contents, definitions, and the distribution of the courses. Again, it was approached with a very local understanding." (P10)

Another important insufficiency was related with the relationships between the faculties and the Ministry of National Education:

> "[…] The relationships between education faculties and schools couldn't be as strong as in the past. That is, we can say like this: The relationships between education faculties and MNE and its schools couldn't be formed according to the aimed level." (P14)

Participants' claims addressed that the 1982 reform resulted in inexperienced faculty members placed in education faculties who were not conducting education research. Moreover, the teacher education programs seemed not constructed through a well-thought and well-planned approach.

4.3. 1998 Reform

4.3.1. The Imperatives of 1998 Reform

The problems with 1982 reform seemed to address the needs for the 1998 reform. When the participants were asked about the needs of 1998 reform, they claimed that a standard curriculum was needed for all of the education faculties and the majority of them stressed that there was an obvious need for the education of content area teachers for upper elementary grades:

> "[…] The upper level of elementary education was always an ignored area. [For example,] a physics teacher who could not be recruited for

> secondary level became a teacher in upper elementary level or a class teacher who had difficulties in first level of elementary and had an influential person behind him/her, became a teacher in upper elementary level. There were not [teachers] who could teach some concepts without causing a [misconception]. This part was a serious need." (P6)

The need for educating content area teachers for upper elementary grades was due to the change in the duration of compulsory education and in the structure of secondary and elementary schools which were also initiated in 1998. Although it was expected that participants could try to make reasoning between these two developments in the same year, only two participants expressed this relation briefly as it follows:

> "[…] Increase in the duration of elementary education [from 5 years] to 8 years, teacher education unavoidably became a current issue." (P3)

> "[Compulsory] elementary education was increased to 8 years. The subjects for upper elementary grades [for the teachers] were determined, their curriculums were specified. The contents intended for the programs were formed. […] There was a credit of 600 million dollars which the World Bank gave us. […] First, [compulsory] elementary education has been increased to 8 years from 5 years. Second, after this increase, educating the teachers for [the subjects in [upper] level of elementary education], educating the educators in education faculties, increasing the equipments in education faculties [and similar things to these] were a whole project. This was not one dimensional." (P6)

Almost half of the participants (7 out of 15) addressed that specialization in a certain subject was needed for upper level of elementary education because of the changes in mathematics teaching perspectives in the research area:

> "[…] For the children in the [upper] level of elementary education, improvement of some courses taking the age characteristics of these children into account was so beneficial, [and accordingly] this differentiation was very nice especially after this 8-year of application of [compulsory] elementary education." (P12)

> "[Our understanding of] education children have changed. That means, there is not a stable mathematics, there is a changing one. […] How the child formulates the understanding of multiplication or division [is important] […] or, one can just say that this fraction is read like this, and completes [teaching]." (P9)

Arguing that content knowledge should be prioritized, participants considered this reform as important since teachers were educated for the content knowledge by the related departments with this reform:

> "[…] [In 1998 reform] content knowledge education was stressed predominantly. [This reform] aimed to fill this gap here. [Consequently,] this [reform] has an interesting element: It emphasized that content knowledge courses are given in the related

> faculties, pedagogical content knowledge courses are given in education faculties. In my opinion, this was one of the critical sides of this [reform]." (P14)

Six participants (out of 15) addressed that some of the undergraduate programs in educational sciences departments in faculties of education were closed by this reform. This reorganization of educational sciences departments raised several arguments in the teacher education field, some of which are presented as in the following:

> "[…] There were 5-6 undergraduate programs in [educational sciences departments]. One of them was 'guidance and psychological counseling'. This program is still continuing. Apart from [this], the rest of them were closed. I think this issue is open for discussion. For example, is it necessary to have an undergraduate program in educational sciences or should the program of 'educational management and inspection' be a graduate program, that is, should there be people experienced in teaching here? […] The programs of 'curriculum development' and 'measurement and evaluation' can be [evaluated similarly]. My personal opinion about this issue is that the specialties related with educational sciences should be handled in graduate programs but this topic is open to discussion." (P14)

> "[…] This issue is one of the most right and radical dimension [of the 1998 reform]. The graduates of those departments were not employed according to their specialties by the ministry. […] Ministry didn't appoint one of them as a school manager. Now of course, our system is not organized according to this. And, these candidates were employed as classroom teachers at the end. In my opinion, a very fatal mistake was recovered." (P15)

> "In my opinion, educational science is this: If you are studying about the learning of children and if you are using scientific methodology, then you are doing educational science. But, they don't [consider] like this. For example, they claim that mathematics education is not an educational science. […] And, there is no educational science department as an undergraduate program […] in the world." (P9)

> "To some extent, I agree with them, I give a right in this way: I was in the department of measurement and evaluation at that time. Though, we voted to close our department. However, the programs without having undergraduate programs which consist of only graduate programs are not provided enough in terms of research assistants, support, and etc." (P13)

The researcher's attempts to conduct interview with the faculty members who did not support the termination of the undergraduate programs of the department of educational sciences by the 1998 reform were rejected. Therefore, the opposite arguments are not presented here.

The main imperatives mentioned by the participants were the need for standard curriculum and specialization in a certain subject. Another imperative of 1998 reform was

that some programs of educational sciences department such as measurement and evaluation should be terminated.

4.3.2. The Consequences of 1998 Reform

The 1998 reform was considered to have positive effects on teacher education by the participants of this study. Most of them (10 out of 15) claimed that scholarships and financial opportunities provided by the World Bank in order to educate the faculty members for education faculties was the most impressive effect of this reform. They said that recruiting qualified teacher educators at the universities was very important and the only way to achieve this was sending students for graduate study abroad and employing them in education faculties as faculty members. This also led HEC and MNE to work together:

> "[…] While organizing this [1998] reform, educating the faculty members was planned very well. I don't know the exact number but more than 500 people were sent in order to study as doctoral students and these people have come back to education faculties after 3-4 years. [I think,] maybe they will be the impulsive force for education faculties in the next years." (P14)

> "[…] In order to improve teacher education system, the World Bank Project was formed. This project started late but it was concluded eventually. […] The cooperation between HEC and MNE was ensured continually." (P8)

Another effect stressed by some participants (3 out of 15) was the initiation of new regulations on teaching practice system especially with the help of National Committee of Teacher Education (NCTE) on sharing the responsibilities about this practice and the payment of the mentor teachers:

> "[…] In the first time when this cooperation between faculty and school has been established, [mentor teachers are paid] some money. In this application, payment is done by the universities." (P8)

> "[…] When programs were renewed, mentor teachers were started to be paid for the house ownership for the intern teachers." (P12)

> "[…] In the past, [practice teaching in schools] was done without payment and we thought that they did not consider because [mentor teachers] were not paid. Then, some amount of money were started to be given to mentor teachers and school administrators. But, this still remains an unsolved [situation]. In my opinion, [practice teaching] should be taken into consideration in terms of both duration and quality." (P4)

Therefore, it could be said that the 1998 reform brought a different dimension for the relationship between the universities and the MNE.

The 1998 reform was important for the teacher education in Turkey for several reasons for the participants. This reform was very important since there was no institution or school graduating teachers other than education faculties beginning from this year:

> "[…] Educating the content area teachers for upper elementary grades under the universities and increasing their education duration from 2 to 4 years was very important. That is, this is not one thing. There is also an early childhood education. They are also in order by the [1998] reform. They are also under the education faculties. This is a very important case. There is no teacher education institution other than education faculties anymore." (P4)

As a summary, participants claimed that universities started to consider the teacher education important by the 1998 reform. The reform was important since it provided specialization in branches of teaching through the education in faculties. It brought new terminologies for education such as elementary mathematics education, elementary science education and early childhood education in Turkish teacher education.

The major consequences of 1998 reform based on the perspectives of the participants are the scholarships and financial opportunities provided by World Bank, initiation of new regulations on teaching practice courses regarding the improved relationships between MNE and education faculties, as to be summarized. There is one important side of the 1998 reform that no teacher education institution has left other than education faculties by this year.

4.4. 2006 Reform

4.4.1. The Imperatives of 2006 Reform

The 2006 reform was addressed by the participants in relation to the termination of undergraduate programs in educational sciences departments by the 1998 reform. Some participants (4 out of 15) mentioned that the termination resulted in some dissidence between the departments of educational sciences and the other departments of education faculties such as elementary education, secondary education, or foreign language education. Because of this disagreement in the education faculties, these participants stressed that the reform in 2006 was initiated as "revenge" to the change in 1998 as in the following:

> "[…] Some of our friends who were against the 1998 reform [made this action] as a revenge with the effect of some of the new employed people in HEC by the work change. I don't think whether they approached with the discretion about what the deficiencies of the reform or what we should try to learn them. There was nothing produced like this in fact. […] I am against the courses which added after the reform because there are things which contradict with the hypothesis that teaching as a profession is based on professional practice. The name of the course "Introduction to teaching profession" was changed as "introduction to educational sciences". This shows why this was done obviously." (P15)

> "I was actually not involved in this reform 2006, but as I observed that it was an attempt that some educational sciences courses were added to undergraduate programs again." (P9)

Participants generally addressed the 2006 reform as a reaction to the 1998 reform. Holding educational scientists responsible for teaching the pedagogical content knowledge courses was an action for the participants in order to defend the rights of educational sciences departments. Parallel to those thoughts, they argued that the decisions taken in the 2006 reform workshops were not held according to research results, but rather based on observations. These participants also criticized the makers of this reform as they behaved politically instead of scientifically. Moreover, reform makers did not take the program development principles into consideration according to some participants' (5 out of 15) expressions:

> "[…] I think that they behave politically rather than scientifically there. […] When we looked at [the studies] in the 1998 reform, there is program development principle, there is consistency, program arises from the needs, [and] there is progressiveness principle. 1998 reform was such a nice program that all of these principles were taken into consideration. […] However, some people who were not involved in the [studies of the 1998] program or could not contact with [the person who was in charge with the 1998 reform] went for revenge like this. Educational scientists criticized the program while claiming that being teacher is impossible without this or that course. I think that these were very personal." (P6)

> "[…] For example, they cancelled the "Development and Learning" course in the last program, they put the "Developmental Psychology" in the secondary education program. […] For example, practice for "Classroom Management" course was cancelled although it is based on practice. […] This shows that [2006 reform] is an easy production of non-scientific approaches without having principles." (P10)

> "[…] There are some approaches which completely contradicts with the thesis that teaching profession should come from professional practice [in the 2006 reform]." (P15)

It should be stressed that the last expression belonged to a teacher educator who was working in an educational science department.

Participants claimed different perspectives about the importance of this reform. While some participants (5 out of 15) considered the reform as a need because of the implementation problems of teaching practice courses, others (5 out of 15) stated that this reform was a big mistake since it decreased the amount of practice in the teacher education curriculum. Participants who considered it as a need claimed that the numbers of students taking the course brought problems in implementations:

> "[…] Our education faculties are very crowded, […] first year students are going to schools for school experience, fourth year [students] are going to [schools] for practice, third year [students] are

> going for practice. Schools begin to rebel for the students who come from universities. Accordingly, when [students] go to schools, there are not enough faculty members who can deal with them. […] Another reason is that [a first year student] doesn't know anything about education or the principles; […] that is, you can't observe a thing which you don't know. These are two fundamental imperatives independent from each other." (P6)

> "There were two school experience courses. That is, they were too much for many people. [The course instructors] could not know how to deal with the student who just came from high school while sending him/her to a school to see what s/he can do. This trouble was experienced a little. Many researches have been conducted related with this topic as well [and] there are research results, too." (P2)

The participants who were against the decrease in teaching practice courses stressed that teaching experience was vital for pre-service teachers:

> "Experience is important. Where is it important? It is in classrooms. And where [is it important]? It is learned through practice. […] Yes, they combine the two school experience courses as one course. Now, we have one school experience and one school practice course. However, they are not useful. When we send the students [for practice], teachers say 'bring the [form] and let me sign immediately'." (P7)

The major imperatives behind 2006 reform were that 2006 reform was performed as a reaction to the 1998 reform as mostly emphasized by the participants of the study. They criticized that political behaviors existed instead of scientific approaches, claiming that changes introduced in 2006 regulation were based on observations. Moreover, the discussion about the implementation of teaching practice courses between the participants showed that there were disagreements among them.

4.4.2. The Consequences of 2006 Reform

Participants with positive perspectives about the 2006 reform (4 out of 15) addressed that instruction of some courses such as "Introduction to Educational Sciences" by educational scientists was a good decision. Changes in pedagogical content knowledge courses such as "Mathematics Teaching Methods" course in their content and names and reflecting the new perspectives on the curriculum would increase the effectiveness of the 2006 reform.

> "[…] And, these courses were added to the curriculum back again in 2006. When [the courses were added], they only invited few people. They didn't get knowledge from a wide range of people and I think that was not enough. I mean, reform studies should involve the target people in the decision process at the highest level possible" (P3)

> "[When they were preparing the new curriculum], constructivist approaches, since the new elementary and secondary school programs

> were reestablished through the constructivist approaches, were considered as important. [It was proposed that] some courses should be given by branch instructors and some courses should be given by the educational scientists, but I don't know how [education faculties] can implement this." (P6)

One more issue mentioned by some participants (3 out of 15) about the 2006 reform was the change in the determination of elective courses by HEC. This involvement of HEC in the program was not positively perceived by the participants:

> "[…] HEC, now, determines the elective courses. We have to write every elective course and specify its credit score. There are some courses with star which every faculty should determine. You determine these courses, but HEC doesn't approve them. There is such kind of confusion." (P6)

> "[…] For example, we have 54 students, but these 54 students cannot take the elective courses which they want in the campus. Unfortunately, these [actions] stay only as nominal." (P13)

> "[…] There were several elective courses in the past as well, these new ones could be added to the previous ones. I don't think it is an innovation since the names of the elective courses were not specified in the past […]. Here [in the 2006 reform] the names of the elective courses were also added but there was not any prevention to give these courses in the past. (P14)

In order to educate the secondary education teachers, the change in the 3.5+1.5 system was directly transferred to 5 years of education. This was another effect of the 2006 reform said by some participants (2 out of 15):

> "There were two models which one is 3.5+1.5 and the other is 4+1.5. There is no change in the model of 4+1.5 but they combined the 3.5+1.5 model as 5 years. In the past, a student was taking the area courses in the first 3.5 years; and s/he was taking the educational courses in the 1.5 years. Now, it was combined as 5 years and educational courses are distributed to whole curriculum beginning from the first year. I see this as a positive attempt." (P14)

The most important consequence of the 2006 reform seemed to be the difference between the perspectives on the insufficiencies of this reform. While some participants claimed that the changes in the pedagogical content knowledge courses were effective, the others had the perspective that the insufficiencies were mostly in the new implementations related with elective courses.

Documentary Findings

This part covers the findings based on the curriculums of the mathematics education departments in Middle East Technical University (METU) since 1982. The changes in courses which are added or removed from the curriculum, the places of the courses, and the arrangement of the courses were investigated according to the years of 1982, 1998 and 2006 reforms. Some courses which are especially claimed by the participants regarding the change in only in their names were examined through their catalog descriptions. Examples of the curricula used between the years 1982 and today are listed below in tables according to the important periods of teacher education history in education faculties.

During the 1982 reform, there was a mathematics education program including the major in mathematics education and the minor in physics education in the Faculty of Education at METU. Because of having physics education as the minor, there were some courses for physics education field, such as subject-matter courses related with physics and some pedagogical content knowledge courses such as “Teaching of Physics”. The ratio of the pedagogical content knowledge courses was nearly 30% of the whole curriculum. There were not many general culture courses such as foreign language and history. The subject-matter courses covered nearly 64% of the curriculum.

In this curriculum, “History and Philosophy of Education” course as a pedagogical knowledge course was noticeable.

Table 4.1 The curriculum used in the academic years 1981-1983

	First Semester		Second Semester	
First Year	Analytic Geometry	9	Abstract Mathematics	9
	Calculus I	15	Calculus II	15
	Basic Physics I	15	Basic Physics II	15
	Freshman English	9	Freshman English	9
			Introduction to Education and Statistics	9
Second Year	Advanced Calculus I	12	Advanced Calculus II	12
	Linear Algebra I	12	Linear Algebra II	12
	Basic Physics III	15	Basic Physics IV	15
	Psychological Foundations of Education	9	History and Philosophy of Education	9
	Elective		Social Foundations of Education	9
Third Year	Complex Calculus	12	Geometric Constructions	9
	Introduction to Algebra	12	Differential Equations	9
	Geometries	9	Measurement and Evaluation in Education	12
	Introduction to Curriculum Development	12	*Elective in Minor*	
Fourth Year	Teaching of Physics	12	Seminar in Education	9
	Teaching of Mathematics	12	Practice Teaching in Mathematics	18
	History of Turkish Revolution	-	History of Turkish Revolution	-
	Elective		*Elective*	

Because of some additional courses, it is worth to add the next curriculum used in the academic years 1983-1984 below. The ratio of the pedagogical content knowledge courses seemed to increase in this curriculum to nearly 38%. Except for the “Introduction to Computers and Programming” course, there were not any general culture courses in this program. The rest of the courses belonged to the subject-matter knowledge courses and they covered the 59% of the curriculum. There were new education courses compared to the previous curriculum such as “Socio-economic and Political Structure of Turkey and Its Interaction with Education”, “Guidance and Counseling for Effective Science Education”, and “Educational Administration”.

Table 4.2 The curriculum used in the academic years 1983-1984

	First Semester		Second Semester	
First Year	Basic Biological Sciences I	12	Basic Biological Sciences II	12
	Basic Mathematics I	12	Basic Mathematics II	12
	Basic Physics I	12	Basic Physics II	12
	Basic Chemistry I	12	Basic Chemistry II	12
			Introduction to Education and Science Education	9
Second Year	Basic Mathematics III	12	Basic Mathematics IV	12
	Linear Algebra I	12	Linear Algebra II	12
	Basic Physics III	12	Basic Physics IV	15
	Mathematical Techniques in Physics	9	Social Foundations of Education	9
	Psychological Foundations of Education	9	*Elective in Physics*	9
Third Year	Curriculum Development in Science Education	9	Measurement and Evaluation in Education	9
	Educational Technology and Science Education	9	*Elective in Geometry or Mathematics (Math majors only) II*	
	Elective in Geometry or Mathematics (Math majors only) I			
Fourth Year	Socio-economic and Political Structure of Turkey and its Interaction with Ed.	9	Introduction to Computers and Programming	9
			Seminar in Science Education	9
	Guidance and Counseling for Effective Sci. Ed.	9	Educational Administration	9
			Practice Teaching in Mathematics (Math majors only)	12
	Methods of Sci. Teaching in Secondary Schools	9		
	Methods of Mathematics Teaching in Sec. Schools	9	Practice Teaching in Science Education	12
	Elective in Statistics (Math majors only)		*Elective in Education*	

In the following curriculum used in the academic years 1984-1985, there was only one additional pedagogical content knowledge course which was “Laboratory Experiments in Science Education”. There were two additional foreign language courses in terms of general culture courses, which were “Development of Reading Skills” or “Improvement of Reading Skills” and “Development of Writing Skills” or “Expository Writing”.

Table 4.3 presented below belongs to the academic years 1985-1987. There seemed to be not much difference in the curriculum, which still served mathematics education as the major and physics education as the minor, compared to the previous one, but few changes in the course names and their arrangement. There were some additional mathematics courses such as “Differential Equations” and “Analytic Geometry”. However, some of the educational courses were removed from the program such as “Laboratory Experiments in Science Education”, “Socio-economic and Political Structure of Turkey and its Interaction

with Education", "Guidance and Counseling for Effective Science Education" and "Educational Administration".

Table 4.3 The curriculum used in the academic years 1985-1987

	First Semester		Second Semester	
First Year	General Physics I	15	General Physics II	15
	Calculus I	15	Calculus II	15
	General Chemistry I	15	General Chemistry II	15
	Development of Reading Skills –or	9	Development of Writing Skills –or	9
	Improvement of Reading Skills	9	Expository Writing	9
Second Year	General Biology I	12	General Biology II	12
	Introduction to Education	9	Social Foundations of Education	9
	Analytics Geometry I	9	Analytic Geometry II	9
	Basic Physics III	15	Basic Linear Algebra	9
			Basic Physics IV	12
Third Year	Statistics	9	Curriculum Development in Science Education	9
	Psychological Foundations of Education	9	Introduction to Computers and Programming	9
	Abstract Mathematics I	9	Abstract Mathematics II	12
	Advanced Calculus I		*Elective*	
	Elective			
Fourth Year	Methods of Mathematics Teaching in Sec. Schools	9	Seminar in Science Education	9
	Measurement and Evaluation in Science Education	9	Practice Teaching in Mathematics	9
	Differential Equations	9	*Restricted Elective in Science Education*	
	Restricted Elective in Mathematics I		*Restricted Elective in Mathematics II*	
	Elective		*Elective*	

There were little changes when in the academic years 1987-1989. The biology and chemistry courses were removed. Instead, some other mathematics courses were added such as "Complex Calculus". The course "Geometry for Teachers" was added in addition to the course "Computers Programs in Mathematics Education", which were offered by the Science Education Department as pedagogical content knowledge courses. In this academic year mathematics education program was offered without serving the minor program in physics education.

The following table shows the mathematics education program served in the academic years 1990-1992. There were additional courses such as "Probability", "Applied Statistics" and "Projects in Mathematics Education" offered by the Science Education Department. There was no credit information for this program on the catalog published in these years.

Table 4.4 The curriculum used in the academic years 1990-1992.

	First Semester	Second Semester
First Year	Analytic Geometry I Calculus for Mathematics Students I Abstract Mathematics I General Physics I Development of Reading and Writing Skills I –or Advanced Reading	Analytic Geometry II Calculus for Mathematics Students II Abstract Mathematics II General Physics II Development of Reading and Writing Skills II –or Academic Report Writing
Second Year	Advanced Calculus I Differential Equations I Linear Algebra I Introduction to Computers Introduction to Education	Advanced Calculus II Basic Linear Algebra II Educational Psychology Social Foundations of Education *Elective*
Third Year	Curriculum Development in Science Education Probability Complex Calculus *Restricted Elective* *Elective*	Measurement and Evaluation Geometry for Teachers Applied Statistics *Restricted Elective* *Elective*
Fourth Year	Methods of Mathematics Teaching in Sec. Schools Computer Programming in Mathematics Education *Elective (Mathematics)* *Elective in Science Education* *Elective*	Practice Teaching in Mathematics Project in Mathematics Education *Elective in Science Education* *Elective*

In the academic years 1992-1994, the foreign language courses were cancelled again and the names of the “Abstract Mathematics” courses were changed into “Discrete Mathematics” courses. Instead of the course “Introduction to Computers”, Computer Engineering Department offered “Pascal Programming” course for the mathematics education students. The rest of the program was offered as same as in the previous academic years. The credit information for the courses was not mentioned in this program like in the previous academic years.

The academic years 1995-1997 were the years when some general culture courses were added such as foreign language, history, and Turkish courses. There were not additional educational courses. The course offered by Computer Engineering Department was removed and the course “Computer Programming” became “Computer Application in Education.” The course “Project in Mathematics Education” was also removed from the program. The numbers of electives was decreased from 10 to 6 in this period and the limitation of whether they should be restricted or not was cancelled. The ratio of the

pedagogical content knowledge courses to the whole curriculum was nearly 25%. The table is as follows:

Table 4.5 The curriculum used in the academic years 1995-1997.

	First Semester		Second Semester	
First Year	Analytic Geometry I	3	Analytic Geometry II	3
	Calculus for Mathematics Students I	5	Calculus for Mathematics Students II	5
	Discrete Mathematics I	3	Discrete Mathematics II	3
	General Physics I	5	General Physics II	5
	Development of Reading and Writing Skills I	4	Development of Reading and Writing Skills II	4
	Turkish I	-	Turkish II	-
Second Year	Advanced Calculus I	4	Advanced Calculus II	4
	Differential Equations I	4	Basic Linear Algebra II	4
	Linear Algebra I	4	Educational Psychology	3
	Introduction to Education	3	Social Foundations of Education	3
	Advanced Reading and Oral Communication	3	Principles of Kemal Atatürk	-
	Principles of Kemal Atatürk	-		
Third Year	Advanced Calculus III	4	Introduction to Algebra	4
	Complex Calculus	4	Computer Application in Education	3
	Linear Algebra III	4	Measurement and Evaluation	3
	Curriculum Development	3	Teaching Geometry Concepts	3
			Elective	
Fourth Year	Methods of Science Education	3	Practice Teaching in Mathematics	3
	Elective		*Elective*	
	Elective		*Elective*	
	Elective			

In the academic years 1997-1999, courses such as “Seminar in Teaching Practice” and “Teaching Mathematics I and II” instead of “Methods of Science Education” were added to the mathematics education program was. The course “School Experience” was added to the first semester of the fourth year as well. The number of electives was decreased to five. One interesting change was in the credit value of “Practice Teaching” course which was increased to 6 in these academic years. The ratio of pedagogical content knowledge courses was nearly 32%.

The academic years 1999-2001 were the years when The Department of Elementary Education was first introduced in the Faculty of Education at METU. The elementary mathematics education program was offered with minor in elementary science education program as in the following table:

Table 4.6 The curriculum used in the academic years 1999-2001.

	First Semester		Second Semester	
First Year	Fundamentals of Mathematics	3	Introductory Discrete Mathematics	3
	Calculus I	5	Calculus II	5
	Basic Physics I	5	Basic Physics II	5
	Development of Reading and Writing Skills I	4	Development of Reading and Writing Skills II	4
	Introduction to Teaching Profession	3	School Experience in Elementary Education I	3
Second Year	Analytical Geometry	3	Basic Algebraic Structures	3
	Elementary Geometry	3	Introduction to Differential Equations	4
	Introductory General Chemistry	4	General Biology	3
	Development and Learning	3	Instructional Planning and Evaluation	4
	Advanced Reading and Oral Communication	3	Computer Applications in Education	3
	Principles of Kemal Atatürk I	-	Principles of Kemal Atatürk II	-
Third Year	Linear Algebra	4	Probability and Statistics	3
	Instructional Development and Media in Mathematics Education	4	Laboratory Applications in Science II	3
	Laboratory Applications in Science I	3	Methods of Science and Mathematics Teaching	4
	Turkish III	2	Classroom Management	3
	Elective I	*3*	Turkish IV	2
	Elective II	*3*	*Elective III*	*3*
Fourth Year	School Experience in Elementary Education II	3	Practice Teaching in Elementary Education	5
	Methods of Mathematics Teaching	3	Textbook Analysis in Mathematics Education	3
	Advanced Communication Skills	3	Guidance	3
	Elective IV	*3*	*Elective VI*	*3*
	Elective V	*3*		

Because there was not an elementary education department in the Faculty of Education up to these years, the curricula of the mathematics education programs in Secondary Education Department seemed to be considered as a base for the courses in the elementary education programs. The introduced courses into this curriculum were in all categories. The new courses in pedagogical content knowledge category were “Laboratory Applications I and II”, “Probability and Statistics”, “Classroom Management”, “Textbook Analysis in Mathematics Education” and “Guidance”. There was also an additional school experience course in the first year as well. While the minimum credit hours for elective courses were determined in this program, half of them were assigned for the technical electives where students should select them in the educational sciences. The ratio of the

pedagogical content knowledge courses to whole curriculum was nearly 50% which was higher than the programs offered before.

In the following 2001-2003 and 2003-2005 academic years, there was no change except in the name of Turkish courses which were changed into “Oral Communication” and “Written Communication.”

In the academic years 2005-2007, after the last reform, the new Elementary Mathematics Education Program did not serve minor in elementary science education and was determined as in the following:

Table 4.7 The curriculum used in the academic years 2005-2007.

	First Semester		Second Semester	
First Year	Fundamentals of Mathematics	3	Discrete Mathematics	3
	Analytic Geometry	3	Basic Algebraic Structures	3
	Calculus with Analytic Geometry	5	Calculus for Functions of Several Variables	5
	Introduction to Education	3	Computer Applications in Education	3
	English for Academic Purposes I	4	English for Academic Purposes II	4
	Int. to Information Technologies and Applications	-		
Second Year	Basic Physics I	5	Basic Physics II	5
	Introduction to Differential Equations	4	Elementary Geometry	3
	Introduction to Probability and Statistics I	3	Introduction to Probability and Statistics II	3
	Instructional Principles and Methods	3	Measurement and Assessment	3
	Educational Psychology	3	Academic Oral Presentation Skills	3
	Principles of Kemal Atatürk I	-	Principles of Kemal Atatürk II	-
Third Year	Basic Linear Algebra	3	Community Service	2
	Methods of Teaching Mathematics I	3	Instructional Technology and Material Development	3
	Elementary Turkish III –or	-	Methods of Teaching Mathematics	3
	Written Expression	2	Classroom Management	3
	Elective I	*3*	Intermediate Turkish IV –or	-
	Elective II	*3*	Oral Communication	2
			Restricted Elective III	*3*
Fourth Year	Research Methods	3	Practice Teaching in Elementary Education	5
	School Experience	3	Turkish Educational System and School Management	3
	Nature of Mathematical Knowledge for Teaching	3	Guidance	3
	Restricted Elective IV	*3*	*Elective VI*	*3*
	Elective V	*3*		

The main changes in this program was in the pedagogical content knowledge courses added such as “Community Service”, “Research Methods”, “Nature of Mathematical Knowledge for Teaching”, and “Turkish Educational System and School Management”. The removed courses from the previous program were mostly related with elementary science education such as “Introductory General Chemistry”, “General Biology”, and “Laboratory Applications in Science Education I and II”. The other removed courses in pedagogical content knowledge area were “School Experience I” and “Textbook Analysis in Mathematics Education”. The number of elective courses was not changed; however, two of them were determined as restricted electives which mean that they should be departmental courses.

CHAPTER 5

DISCUSSION

In this chapter, the findings of this study were discussed through the following issues: unintended implementation, contradictions between policy and practice, (not) reaching goals, and implications of the study.

5.1. Unintended Implementation

This part explains how participants of this study affected the process of this study. Based on the findings of this study, it could be stated that there existed a relation between participants' educational background and their perspectives about the issues such as the professionalism versus deregulation debate in teacher education. Participants who graduated from higher teacher schools (Öğretmen Yüksekokulu) were favoring more integration of practice in teacher education and they were specifically emphasizing this issue more than the other participants. While these particular participants were proposing more pedagogical knowledge and pedagogical content knowledge into the teacher education curriculum, they were also criticizing the decreasing amount of teaching practice and the application of the practice courses in the implemented teacher education curriculums over years, especially after transferring into education faculties. As it is known, higher teacher schools were the former versions of education faculties. Because they were generally comparing education faculties with their own "schools", the implementation of the teaching practice courses and the amount of them were very problematic for them. This tendency in their responds during interviews would address that deregulation issue in Turkish teacher education was ignored. Instead, the current concerns were on the "professionalism" in terms of professional knowledge such as pedagogical knowledge, pedagogical content knowledge, or subject-matter knowledge without offering enough practice areas for teacher candidates. For subject matter knowledge, some of these participants were claiming that there was a tendency to decrease the percentage of the courses related with subject-matter knowledge, which was a contradictory side of mathematics education curriculums to professionalism as well. Up to

here, it could be concluded that mathematics teacher education curriculum makers were very far from the current professionalism versus deregulation educational debate on teacher education since there were not specific determinants in mathematics teacher education curriculums in Turkish education faculties.

After establishing education faculties, the main concern was switched from the quantity to the quality of the teachers based on the specific actions since 1982. For example, specialization into branches in terms of grade levels was the main concern of the 1998 reform studies. In 1998, another specific action was the national teacher education curriculum application, which was agreed by nearly all of the participants that it prevented differences between education faculties since education faculties were under different curricula before that year.

5.2. Discussion of Teacher Education Issues

5.2.1. Relationships Between HEC, MNE and the Education Faculties

The findings about the nature of the relationships between HEC, MNE, and education faculties were remarkable that nearly all of the participants agreed on the way of establishing relationships with HEC by education faculties depending on the president of HEC or the government. They claimed that the relationships should be based on institutionalized settings, rather than on personal connections. This showed that the educational agenda also had political grounds and the communication and cooperation between these institutions were affected by this.

Another remarkable finding was related with the National Committee of Teacher Education which was established during the 1998 reform studies. Three participants claimed that it worked well in order to improve the cooperation between MNE, HEC, and education faculties (Kavak et al., 2007; Başkan, 2001). However, one participant claimed that this committee could not function effectively although its duties and aims were determined very clearly.

The conferences on science and mathematics education by MNE were another finding which was stressed by the participants. The participant working for MNE approached to these organizations positively in order to achieve effective relationships between MNE workers and the teaching staff of education faculties.

It could be speculated that all of the agencies taking role in teacher education in Turkey had positive opinions about the improvement of cooperation and collaboration between MNE, HEC and education faculties regarding their suggestions for the current situation of the relationships between them.

5.2.2. Implementation of the Reforms

This issue was another remarkable one which most of the participants talked about. The general way of introducing reforms was from top to the bottom without taking the opinions of target group into consideration as they mentioned. Based on the findings mentioned in the previous chapter, it could be derived that there is a need to change the approach of implementing reforms in Turkish teacher education. Target group of reforms should be involved in the decision making process in order to gather better outcomes from reforms as participant claimed as well.

5.2.3. Teacher Education

The responses of the participants about teacher education in terms of deregulation and professionalism debate showed a tendency close to the arguments mentioned in the review of related literature.

As participants explained in the interviews, HEC wants to control education faculties since HEC believed that education faculties could not prove their adequacy. This could be supported with the above discussion on determining of elective courses as well. Giving right to choose own elective courses and forcing to take approval for those at the same time supported this claim. These policy efforts of HEC could be explained as increasing the inputs and the regulation on teacher education faculties. HEC did not want to compromise the centralized nature of training teachers. With the Fundamental Law of National Education and being essential employer, MNE saw his right to define the teaching requirements and qualifications which forced HEC to organize the teacher education programs. This could refer to the standardized control of teacher education programs. Then, teacher education in Turkey had a centralized structure, having increased controls and regulations, based on teaching requirements and qualifications without taking the market needs into consideration.

Many participants argued whether the education faculties offered educational philosophies, teaching characteristics, and the nature of education as a science to teacher candidates. They claimed that education faculties lacked educational philosophies and education could not be perceived as a science yet. It could be speculated that there is a need concerning the philosophies while especially comparing the current situation of teacher education to the past experiences of Turkish teacher education history such as the model of village institutions (Çakıroğlu & Çakıroğlu, 2003). Moreover, I could make a connection between the discussion here and the claims mentioned before in the review of related literature in such a way that ignoring to introduce a philosophy behind teacher education supports the claim of taking quantitative needs in teacher education as the first rather than qualitative ones.

Besides, the policy of elective courses of HEC could be discussed with “tightly regulated deregulation” introduced by Cochran-Smith (2004) in the review of related literature. It could be speculated that the conflict in the implementation of elective courses showed a parallelism to in the debate of regulated deregulation as well.

5.2.4. Employment

This issue was referred by nearly all of the participants. The conflicts in the implementation of political decisions between HEC and MNE affected the employment issue. While MNE determined the number of needed teachers annually, HEC tried to increase the quotas of the education faculties and the number of education faculties. This resulted in the arrangement of KPSS examination which teacher candidates were forced to take if they wanted to be employed by MNE. Related with this issue, the thoughts of the participant from MNE was noticeable that teacher candidates, who could not be employed because of their KPSS results, would try other opportunities, such as private schools.

It could be speculated that these conflicts could be serious problems in the future of teacher education unless they are not left to be solved on their own. KPSS examination would only be a temporary solution and it would not support a healthy pathway to recruit teachers according to the scores taken in this examination. In fact, KPSS examination causes a dilemma. Graduating from an education faculty having the full requirements for being a teacher contradicts the request to have a KPSS score in order to be recruited, at the same time. This situation turns out that graduating from an education faculty is not enough to become a teacher, which also contradicts with the characteristics of teaching profession stated in the Fundamental Law of National Education as well.

5.2.5. Teacher Education Curriculum

Participants mostly referred to the teaching practice and methodology courses in teacher education curricula. The time allocated for teaching practice courses were seen as problematic. The general idea was that these courses should be integrated with the other pedagogical content knowledge courses such as methodology and classroom management courses.

There were also perspectives about the standardized nature of teacher education curricula in education faculties in three different ways: First, education faculties should be allowed to determine their own curricula and they could decide which courses will be offered and how they will be arranged. Second, education faculties should be autonomous to some extent in which HEC should give right education faculties to change the curricula in some percentage. Third, education faculties should be definitely mandated by HEC, and they should not be allowed any change to do. The first group of participants claimed that

education faculties should train teachers according to the needs of a specific region by taking the differences into consideration. It should not be expected that all education faculties would serve the same curricula. The second group argued that although some freedom should be given to education faculties, education faculties could not decide on their needs completely since they were still young compared to the other faculties. Third group, however, claimed that if education faculties were allowed to make their own changes, they could abuse this right and teacher education could become worse. In 1998 reform studies, this standardization of teacher education curricula was seen as a need stating that education faculties needed a unity in terms of content, number of courses and credits, and teaching practices at schools (Kavak et al., 2007).

Another remarkable point here was that teacher education curricula lacked humanities courses such as anthropology, philosophy, sociology, or psychology as emphasized by one participant. P10 claimed that education faculties could not train teachers very well in terms of general culture. Documentary findings in this study showed that the mathematics teacher education history at education faculties did not have any of these courses at all. This issue seemed not to be considered in Turkish literature as well.

There were some comments about the minor area implementation on the elementary teacher education departments. Participants summarized that minor area implementation should not be considered as in the 1998 reform and the minor area alternatives should be widened for education faculties in order to catch the trends in education as participants mentioned. Kavak et al. (2007) mentioned that the minor area implementation was cancelled in 2006 reform since there was no need to have this kind of trained teachers at schools any more.

5.2.6. The Quality of the University

The discussion about the quality of the universities covers also the varieties of them. Five participants mentioned that there should be a few leading universities and in some certain cities while claiming that teacher education should not be done in a less-developed context which did not enough facilities to serve for teacher candidates. Some other participants also emphasized that the training of teacher educators should definitely be done in a few universities which had very organized graduate programs and they might be in big cities, such as in Ankara and İstanbul.

In the foreign literature this issue could be summarized as in the following: Deeply, seven characteristics are in common for teacher education institutions: a common clear vision of good teaching, well-defined standards of practice and performance, a rigorous core curriculum, extensive use of problem-based methods, intensively supervised, extended clinical experiences and strong relationships with reform-minded local schools (Darling-

Hammond, 2005). While teachers are supported by those items above in universities, schools and classrooms give opportunities to teachers to practice the knowledge they acquire in them. At this point Ben-Peretz (2001) emphasized one important point as that the complexities, which teacher education has, request from teacher educators nearly impossible actions and teacher educators come to a point that whose vision and mission are more valuable and worth to overemphasize to the prospective teachers. This adversity may be managed with the suggestions of Cochran-Smith (2003) about that the education of teacher educators should be based on inquiry stance while looking from the point that teacher educators must become change agents as well as teachers. By the term inquiry stance, author means "conceptualizing the education of teacher educators as a process of continual and systematic inquiry wherein participants question their own and others' assumptions and construct local as well as public knowledge appropriate to the changing contexts in which they work provides a way to think about it as a process of change" (Cochran-Smith, 2003,p. 25).

To some extent, it could be speculated that participants of the study asked for the way of teacher education institutions which was mentioned in the literature. They proposed to have organized graduate programs in order to train teacher educators. However, there was not a connection mentioned in the literature that teacher educators should be trained in leading universities or in big cities since they did not mention about the specific characteristics which they expected from a teacher education institution. In the context of the study, teacher education institutions are education faculties in Turkey. Notwithstanding, with the supposition that leading universities have generally qualified graduate programs and they were mostly established in big cities in Turkey, it could be generated that participants of the study offered the desired characteristics of teacher education institutions as being parallel to the literature summarized above.

5.2.7. Problems and Needs in Teacher Education and Solutions

The problems remarked the most by the participants were lack of teaching staff in education faculties, lack of education philosophy or educational policy in teacher education, differences between education faculties in terms of academic structure and facilities, financial issues, KPSS examination, the perception of teacher educators about education, conducting researches in other fields, lack of planning approaches by HEC, lack of synergy both among education faculties and in teaching staff of one education faculty, current situation of employed of teachers with a low salary, and the current situation of implementation of teaching practice courses.

Education faculties lack sufficient and well-qualified teaching staff. This was the most referred problem by the participants of this study and they generally related the other

problems with this issue such as implementation of teaching practice courses, not producing education knowledge, and lack of synergy between faculty members and education faculties. In order to handle the problem of lack of teaching staff in education faculties, the 1998 reform project for sending doctoral students abroad (Kavak et al., 2007) seemed not sufficient enough to train the needed number and quality of teacher educators. Participants of this study had some possible solutions for this problem such as developing serious graduate and doctoral programs in order to educate teacher educators, sending prospective teacher educators abroad since teacher educators could not be trained in Turkey currently, developing faculty member training program (ÖYP), and determining some limitations on the universities which serve ÖYP programs.

Teacher education lacks educational philosophy or educational policy. Participants of this study mentioned that teacher education suffered from the not institutionalized nature of relationships between the agencies related which were MNE, HEC, and education faculties. They added also that HEC did not have planning approaches while training the teachers in terms of the number of education faculties and the quotas of them. Participants compared education faculties with the other faculties and they summarized that education faculties had the worst conditions among all such as facilities and financial issues. Considering that there was no political attempt to solve this problem, participants generated some solutions. The most referred solution by participants was the need for accreditation; they mentioned that a quality assurance system should be functioned and this system should be continued. Another approach was educating teachers according to the needs of a specific region. This reminded village institutions in the past, some of the participants referred to these institutions; however, they claimed that the idea behind them should be developed. Another noticeable comment on this problem was considering teacher education as a project completely once again.

There are differences between education faculties in terms of their structure and facilities. Education faculties were different the opportunities they served to their students as participants claimed. In order to decrease the differences in education faculties, one of the participants offered a solution that teaching staff of well-developed education faculties should be circulated into education faculties which needed teaching staff.

KPSS examination is a problem for teacher candidates so are for education faculties. Because of the excess amount of graduates of teacher education programs, teacher candidates were forced to be ranked based on their scores in a multiple choice test. There were teachers more than needed and they were currently waiting to be employed, therefore such ranking of teacher candidates was unavoidable as participants stressed. However, this ranking resulted in unemployed teacher candidates. The only solution for this problem was from the participant from MNE. He suggested that graduates of teacher education faculties

could be directed towards other jobs or private schools. Keeping the result that prospective teachers came to education faculties with high levels of motivation in mind (Aksu, Demir, Daloğlu, & Kiraz, 2009), prospective teachers could lose their motivation after graduation with the stress of KPSS examination and accordingly the stress of being recruited or not. Having high motivation to become a teacher while coming to education faculties, the suggestion of the participant from MNE seems inconvenient.

Perceptions of teacher educators towards education are problematic and this causes to conduct researches with less-quality. When education faculties were established, teaching staff of them were selected from arts and sciences departments generally. Because of this attempt, some participants claimed that these people could not perceive education as a science and did not produce professional knowledge. However, conducting educational researches was aimed in the 1982 reform, but as participants claimed that there were teacher educators who were still doing research on other fields, especially in arts and sciences. Besides, participants emphasized the need for culture-based and need-oriented studies in the Turkish literature. In order to solve this problem one participant suggested that, every teacher educator should be followed in terms of his/her publications. There could be some publication standards developed in order to assure that they had quality. Teacher educators might be sent to summer schools, some in-service training programs for teacher educators could be improved, and teaching staff could be forced to these continually. Teacher educators could be evaluated according to pre-determined standards.

There is a lack of synergy between education faculties and among teaching staff of each education faculty. Participants emphasized the need for a synergy both among education faculties and among the teaching staff of each education faculty. They stated that there should be well-organized academic communities in order to share ideas effectively. These teacher educator communities might be organized as regional in order to be reflected by all parts of the country. Additionally, more platforms such as conventions, conferences, and panels should be organized frequently.

Implementation of current teaching practice courses is problematic. Nearly all of the participants of this study referred to this issue as a problem since prospective teachers were not offered a highly qualified teaching experience. It was emphasized that education faculties were generally based on academic knowledge without having enough importance to the teaching practice issue (Deniz & Şahin, 2006). Participants of this study suggested handling this issue by the increased collaboration and communication between MNE, HEC, and education faculties. Some of them emphasized the effectiveness of the National Committee of Teacher Education and it was suggested that this committee should be functioned properly. But, the general idea on this issue was investigating teaching practice courses

together with the school experience courses and developing a model for implementation them effectively.

5.3. Contradictions Between Policy and Practice

In this section, the contradictions which will be mentioned here were according to the reform periods.

5.3.1. 1982 Reform

Before mentioning the 1982 reform development, the overall situation of teacher education in Turkey before 1982 will be discussed through the findings and related literature in this part. First, teacher education institutions were enlarged in type or in amount although teacher education was limited in terms of diversification of teacher education institutions and their curricula. Second, the policy of educating teachers for villages was kept alive for years in Turkey because of the need to increase the amount of literate people in rural areas as being a new country. Third, the number of teacher education institutions, which were established in the Eastern parts of the country, were increased gradually and spread to the whole country. Fourth, some accelerated methods were used to educate teachers in order to meet with the teacher need in country in the late 1970s. Last comment on the overall situation of teacher education before 1982, the duration of the teacher education was increased gradually and the release of the "Fundamental Law of National Education" in 1973 enforced teacher education to be served as a higher education. With this law it was decided that teaching, as a profession, should be done with some certain professional requirements and skills, and as a result of this law, universities were hold responsible of the education of teachers in 1982 (Kavak et al., 2007).

Based on the responses of interviewees to the questions related with 1982 reform, three participants considered the trend in 80's which was turning the teacher education schools into education faculties under the universities as the only imperative. However, others emphasized the importance of education faculties' function as the power of research and development through studies on field, and self-developer mechanism of teacher education. They added that education faculties would make research, add something new to the field of teacher education and through these it would develop itself very well; however, claiming the world-wide trend as the only reason of 1982 reform led to a contradiction among these participants.

Another important finding related with the 1982 reform not mentioned in the literature was that transferring into education faculties was because of the politicized situation of teacher education institutions before 1982 as one of the reasons. As P14 mentioned in the findings chapter, the attempt to try to manage teacher education with under education faculties seemed to be a political reason of 1982 reform.

Participants mentioned that one of the important meanings of the 1982 reform was turning to train the teachers rather than training educators. As they emphasized the importance of conducting researches in the education faculties, they were trying to refer to the professional characteristics of being a teacher. Some of them mentioned about the easy ways of becoming a teacher before 1982 and because 1982 reform forced to be graduated from education faculties, it was accepted as a touchstone. Teaching as a profession was considered to have a knowledge base and this should be developed through research. Hence, after the announcement of the Fundamental Law of National Education Law, it could be derived that establishing education faculties was needed.

Participants generally reflected different perspectives based on their educational backgrounds. For example, P7 who was graduated from a higher teacher school approached differently to the 1982 reform. He mostly emphasized that 1982 reform could not achieve to train well-qualified teachers because of limited amount of teaching practice specifically. It was also emphasized that education faculties did not consider the professional development of teachers in education faculties in terms of teaching practice from the perspectives of MNE (Yüksel, 2008). P7 also argued that 1982 reform was effective in determining a curriculum with high ratio of subject-matter knowledge but he disagreed with the others that education faculties were not good at training high-qualified teachers. He especially emphasized the current ways of teaching practice done by prospective teachers and he offered that education faculties should be transferred into boarding schools as they were in the past, and prospective teachers should be trained with the a close relationship with MNE in terms of their teaching practices. Since teacher education faculties were under MNE before, he also argued that the relationships with schools were better than now. He claimed that education faculties with their current facilities could not give the ideals of becoming teachers. This could be discussed that he might offer this alternative as he was graduated from a higher teacher school, and he worked as a teacher for years. Because of his experience in the field he approaches to the teaching profession different than others. As Yüksel (2008) commented that new established education faculties who came from different departments and were unfamiliar to train teachers, the perspectives of P7 could be speculated as significant in evaluating the consequences of 1982 reform.

The findings indicated that transferring into education faculties was due to the world-wide trend but their establishment led research in teacher education. In general, it could be concluded that 1982 reform was effective in terms of providing alternatives to conduct researches, changing the status of being an educator into being a teacher, and following the trend of education of teachers under universities.

5.3.2. 1998 Reform

1998 reform was started to be implemented in different years in education faculties, for example METU has started to implement it in 1999 as seen in the catalog, although METU Education Faculty has accepted students for the newly established elementary education programs in 1998. Besides, its studies started on December in 1994 and it ended in 1999. Before 1997, there was a series of books, which were related with the content teaching methods, published by HEC. After the publications of these books, the workshops were organized and teacher education programs were reformed (Kavak et al., 2007). When 1998 reform was implemented in education faculties, there was also another educational reform on the duration of compulsory education. It was expected that the participants would relate this to the needs and the reasons of 1998 reform, but there were not many responses in this manner. Although, 1998 reform was aimed to increase the quality of both elementary and secondary education teachers (Kavak et al., 2007), only two of the participants emphasized this issue referring to educational reform which duration of compulsory education was increased to eight years.

Half of the participants mentioned a need for specialized subject area teachers for the upper level of elementary education because of the different age characteristics of those children, and the changing nature of mathematics and methods of teaching mathematics. As participants mentioned, one of the aims of the 1998 reform project was focusing on the special content area teaching methods for the elementary level (Kavak et al., 2007). Then, based on this finding, it could be derived that participants of the study emphasized one of the imperatives behind 1998 reform mentioned in the literature as well.

According to the responds of the participants, one of the main imperatives was the necessity of having a standard national curriculum on teacher education considering the previous situation of teacher education programs in education faculties.

Another important finding from the interviews was that the offering subject-matter knowledge courses by the related departments. As P14 said, this was one of the critical sides of the reform, and it was also evaluated as a reason that the relationships between arts and sciences departments and the education faculties were not strong enough. While serving subject-matter knowledge courses by arts and sciences departments, the relationships between these two faculties was aimed to empowered (Kavak et al., 2007).

Six participants stressed that the cancellation of the undergraduate programs of educational sciences departments such as measurement and evaluation and educational management and administration was a need before 1998 reform since they emphasized that the graduates of these departments were not employed directly as inspectors or else by MNE. Başkan (2001) also concluded that the new structure of the educational sciences departments regarding this change was consistent. However, the cancellation of the under-graduate

programs of educational sciences department in education faculties was not agreed by teacher educators according to the participants. One of them emphasized this issue explaining that especially the teaching staff of education faculties who were not involved in the studies of this reform and who were the members of educational sciences departments were against this decision and consequently they denied terminating these undergraduate programs in educational science departments. It was also mentioned that undergraduate programs of educational sciences department should be terminated since these programs should be followed after teaching education (Kavak et al., 2007). The findings of this study are limited in this sense that none of the teacher educators who were against the termination of undergraduate programs in educational sciences departments were interviewed. Although the researcher tried to contact, she could not receive any response or they rejected to participate.

The study addressed that being participated in the reform studies could change the perspectives on these reforms. It also directed the analyses to investigate the responses related with "the quality of the reform" and to evaluate this issue as a theme in the findings.

On the whole, nearly all of the participants were claiming that the most consistent reform was 1998 reform in terms of the reform principles and the studies in the period between 1982 and today.

5.3.3. 2006 Reform

Since the scope of the reform in 2006 was not as detailed and organized as in the previous 1998 reform which had broad structural changes in a very organized manner, participants named it as regulation or revision. Besides, 2006 reform aimed to update the teacher education programs after the increase in the duration of the mandatory elementary education to 8 years (Kavak et al., 2007).

One of the most concerned issues in responses of the participants was considering 2006 reform as "revenge" to 1998 reform since they argued that this reform was organized by the people who were against the changes related with the offered programs of educational sciences departments in 1998 reform. But, it was mentioned that the imperatives for 2006 reform were based on the needs in the update of the teacher education programs in practice over 8 years, needs in the teachers' qualifications, the changes in elementary and secondary education programs, and the necessity to reflect those changes onto teacher education programs as well (Kavak et al., 2007). Five participants emphasized the implementation of the 2006 reform since they claimed that the program development principles were not taken into consideration while they compared 2006 reform studies to the workshops, books published, and the studies done through the 1998 reform. It was mentioned that the workshops for 2006 reform took place between March, 5-11th in 2006 and teacher education

programs' drafts were released. Then, these were sent to the dean's offices of education faculties in order to receive their opinions on the drafts. After investigation of the opinions of the education faculties about the changes, new teacher education programs were announced on July, 21st in 2006 (Kavak et al., 2007). When these studies for 2006 reform were compared to the ones for 1998 reform, the conflicts which participants emphasized were noticeable. It could be speculated that these conflicts might be due to the different nature of establishment and implementation of 2006 reform.

Participants of this study disagreed about the changes in the teaching practice courses introduced in 2006 regulation. Some of them claimed that the limitation of the facilities to be served for students in education faculties resulted in many problems such as crowdedness in teacher education courses. Hence they claimed that the cancellation of the first school experience course was effective. Another reason they stated was that the new students without a theoretical background on education field could not learn something from the first school experience course. Moreover, teaching staff of education faculties could not manage the implementation of this course since students did not have theoretical knowledge. However, five of the participants disagreed on that teaching practice and school experience would mean everything for prospective teachers, so they should be increased even for the other pedagogical content knowledge courses such as classroom management. It was mentioned that because of the problems in finding practice schools, first school experience course was removed (Kavak et al., 2007). Teaching practice is the only way for prospective teachers in order to implement their theoretical background which they gained in their training in education faculties (Cochran-Smith & Lytle, 1999). Therefore, it should be reflected more in teacher education programs.

5.4. (Not) Reaching Goals

5.4.1. 1982 Reform

In this part, the consequences of 1982 reform will be discussed through the findings mentioned in previous chapter.

While the aim was that education faculties would conduct researches and develop teaching, as six participants emphasized that this aim could not be reached because of lack of teaching staff in education faculties. This could be evaluated as a negative outcome of 1982 reform. However, some of the participants emphasized that 1982 reform should be evaluated in long term, and they added that it would be evaluated as successful later.

As participants saw conducting researches as a reason of 1982 reform, they evaluated that 1982 reform was successful, because education faculties started to function as research centers although they did not have sufficient research experience. Moreover, the teaching staff of education faculties was not originally trained in the field of education as

they were mostly graduated from arts and sciences departments. This was also another negative outcome of 1982 reform since the employed teaching staff in education faculties continued to conduct research on their original field, and they could not provide the education field with expected studies.

When investigating the documentary findings, it was realized that a curriculum was initiated for the secondary mathematics teacher education at METU with a ratio of 64% of subject-matter knowledge courses. From this perspective, it could be said that increasing the subject-matter knowledge in teacher education was achieved through 1982 reform. In the beginning with the effect of having physics teacher education as a minor, there were physics, chemistry and biology courses in the program, but biology and chemistry courses were removed from the program in the academic years 1987-1989 with the cancelation of the minor program. Mathematics courses such as "Complex Calculus" and "Geometry for Teachers" were also added to the program. In the following academic years, there were additional subject-matter courses which were "Probability" and "Applied Statistics".

The pedagogical content knowledge courses had always been changed both in their names and in their content. In the academic years 1981-1983, in which the mathematics teacher education program at METU was initiated, the curriculum had a pedagogical content knowledge course "History and Philosophy of Education." This course was only offered in METU Faculty of Education between these years as documentary findings remarked. Another interesting course was the "Socio-economic and Political Structure of Turkey and its Interaction with Education" course which was only offered in the academic years 1983-1984 and it was cancelled in the following curricula in METU. Another course which was offered only in only the academic period through 1984-1985 was "Laboratory Experiments in Science Education" in relation to the science courses: physics, chemistry and biology. The academic years 1995-1999 had the least ratio between 1982 and 1999. The teaching practice courses were offered in the last semester in the curricula except that teaching practice courses were increased to two in the academic years 1997-1999. There was also a change in methods of teaching courses in this period; they were increased to two as well.

Although mathematics teacher education program at the beginning offered foreign language courses, they were cancelled in the following academic years 1983-1984, and they re-added into program in the academic years 1985-1987. This academic period was also the initiation of a course which was related with computer programming and in the following academic years. This could be evaluated as a positive action regarding that technological developments affected the curricula. In the academic years 1995-1997, the computer programming courses offered by computer engineering faculties were replaced with the "Computer Application in Education" course which was offered by education faculty and could be evaluated as a pedagogical content knowledge course. The academic years 1995-

1997 had the initiation of some general culture courses such as history and Turkish language courses in the curriculum.

The analyses addressed that there were considerable changes in the curriculum of mathematics teacher education at METU before 1998 reform. In every two year, offered pedagogical content knowledge courses, subject-matter courses and general culture courses had changed, their ratios to the curriculum were changed, and the implementation of the minor program was changed. This also addressed an inconsistency in the programs within the same reform. In terms of ratios of these three fields, the ratios of general culture courses increased regarding the addition of history and foreign language courses. The ratios of subject matter knowledge courses were decreased in the curriculum. The ratios of pedagogical content knowledge courses ranged in 25%-40%. According to the council which was held in 1982 having the agenda of teacher education specifically, there were some striking points in the decisions taken, which were as follows: With the law of Fundamental Law of National Education, teacher candidates who were from every branch or every degree were decided to be trained in a balanced way in terms of the content, pedagogical content and general culture courses. While increasing the duration of education in the teacher education institutions as time passes, this increase in the duration was in favor of the subject-matter knowledge instead of general culture and pedagogical courses. It can be realized that these decisions in 1982 MNE council affected the teacher education curricula as it was mentioned above.

Another important decision in this council in 1982 was the issue of educating the teachers with different curriculums in teacher education institutions. Members decided that there was a need to have a unity in the curriculums of the same departments of the education faculties. The differences realized in the programs before 1982 were the distribution of the categories; compulsory elective courses, weekly lesson plan and course credit system; duration for the teaching practice and school experience courses and the arrangement of them and the evaluation systems. However, this decision did not seem to be implemented because of the changes between 1982 and 1999 in METU Faculty of Education.

The findings of this study both from interviews and the documents suggested that several subject matter courses were introduced throughout the years 1982 and 1999 in the education faculties while taking METU Faculty of Education as reference. Consequently, one of the critiques about the previous teacher education institutions related with the lack of subject-matter knowledge courses in teacher education programs seemed to be covered after the establishment of education faculties.

5.4.2. 1998 Reform

Ten participants mentioned that the financial opportunities in order to provide education faculties with trained teaching staff were the most impressive consequence of 1998 reform. The MNE scholarships for doctoral studies abroad were emphasized (Kavak et al., 2007).

It was emphasized that there has been a raising debate on the teaching skills in education faculties before 1998 reform (Yüksel, 2008). Therefore, it could be speculated that there was a need to change the teaching practice offered in education faculties. Participants mainly stressed that the poor quality of teaching practice was due to the insufficient relationships between MNE and the education faculties. The quality of the relationships between MNE and education faculties could be referred that new established education faculties were not experienced enough to train teachers and accordingly education faculties could not handle the implementation of teaching practice courses as well as providing sufficient support from MNE. With the changes in the implementation of teaching practice courses were aimed to increase the relationships between MNE and education faculties as well as participants stressed in the interviews. MNE did not deny that they didn't have effective relationships with education faculties (Kavak et al., 2007). The establishment of the National Committee of Teacher Education was one of the impressive outcomes of 1998 reform regarding these relationships between MNE and education faculties.

Another positive dimension of 1998 reform which the participants emphasized that this reform was important that there were no institutions remained other than education faculties in order to educate teachers. After education institutions with 2-year of education were transferred into education high school (Eğitim Yüksekokulları), they continued to train class teachers (lower level of elementary education) till the academic years 1988-1989. In the following academic years, their duration of education was increased to 4 years. These education high schools were turned into class teachers' education departments or early childhood teaching education departments in the academic years 1992-1993 (Kavak et al., 2007).

The documentary findings related with 1998 reform showed that there was an emphasis on increasing the amount of teaching practice in teacher education departments of education faculties. Previous curricula were always criticized that these programs included mostly theoretical knowledge and did not focus on teaching practice skills (Deniz & Şahin, 2006). Increasing the amount of teaching practice and school experience courses in the teacher education programs could be supported with the three courses introduced in the elementary mathematics education curricula, which were school experience I and II and the teaching practice courses. The essentials of the implementation of these schools were

determined by the regulation of faculty-school cooperation and the cooperation between MNE, HEC, and education faculties was aimed to improve (Kavak et al., 2007).

5.4.3. 2006 Reform

Changes in the pedagogical content knowledge courses in terms of its name and content were significant as the participants who showed positive reaction to the 2006 reform. For example, the content change in the "Mathematics Teaching Methods" reflected the changes in the elementary mathematics education regulations introduced by MNE which was also stressed by Işıksal et al. (2007). Yüksel (2008) also commented on the changes in 2006 reform that prospective teachers training in education faculties should have "intellectual knowledge" regarding the added general culture courses into teacher education programs (p.374). It could be speculated that addition of courses such as "Community Service" and "Turkish Educational System and School Management" might be helpful regarding the intellectual development of teachers.

The change in the determination of the elective courses was organized in the 2006 regulation studies as three participants mentioned. The disagreement resulted in the selection of the elective courses by HEC. It was summarized that the starred courses in the curricula might be changed if there was a need and education faculties could determine the elective courses on their own (Kavak et al., 2007). However, education faculties should apply for approval of these courses to HEC, as participants remarked. This resulted in conflict in the idea of selecting the starred and elective courses by education faculties.

Another important finding was on the change in the 3.5+1.5 system, as few of the participants remarked. This was a change related with the secondary education teachers in fact. In the scope of this change, the pedagogical content knowledge courses given in 1.5 years previously were distributed to the whole curriculum, and this system was started to be implemented as 5 years of education in total (Kavak et al., 2007).

5.5. Implications of the Study

Considering that this study investigated teacher education reform studies through elementary mathematics teacher education programs the following implications are suggested.

This study assures that teacher education community has certain problems and needs. Moreover, it could generate possible solutions for these problems and necessities. In order to understand the overall situation of teacher education phenomenon in Turkey regarding mathematics teacher education programs the study would serve as a base for initial ideas, methods, and ways in order to develop future reforms.

The findings of the study about the relationships between agencies, the functioning of the process, the fields which teacher educators study, and the mechanism in teacher education could also be helpful for developing a theoretical framework for more clear and less problematic future reform developments.

Interviews and documents were used to collect data for this study. In order to develop a better perspective, data collection tools could be widened. Interviews were conducted only with teaching staff from education faculties and one participant from the Department of Teacher Education, in MNE. In order to see the effectiveness of the implemented reforms, interviews should be conducted with the employed teachers who were graduated from education faculties in the implementation periods of these reforms. Moreover, more participants from MNE should be included and they might be chosen from the other departments of MNE as well. In addition to this, some interviewees should also be recruited from HEC. Further research could be done considering these aspects in order to develop its dimension.

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APPENDICES

APPENDIX A

Interview Protocol

Katılımcı hakkında bilgi	0. (Özgeçmişinden bahsetmesi yerine, her katılımcının özgeçmişini görüşmeden önce inceleyip kendim bilgi sahibi olmaya karar verdim.)
1982 yılından önce öğretmen yetiştiren kurumlar hakkında değerlendirme	1. 1982 yılı öncesi öğretmen yetiştiren kurumların işlevselliğini değerlendirir misiniz?
1982 yılı reform dönemi: 1982 yılının eğitim fakültelerinin kurulmasıyla kazandığı öneme ilişkin sorular.	2. 1982 yılında yaşadığımız büyük bir öğretmen yetiştirme reformu var. Bu reform sizce • anlamlı bir reform muydu? • ne gibi ihtiyaçlardan doğmuştur? • ne gibi gerekçelerle gerçekleştirilmiştir? • yararlılığı / etkinliği / etkililiği açısından nasıl değerlendirirsiniz?
1998 yılı reform dönemi: 1998 yılında yaşanan ikinci büyük reformla (ilköğretiem bölümlerinin kurulması) ilişkin sorular.	3. 1998 yılındaki reform çalışmaları 1996-1997 yıllarında başlamıştır. Bu reform çalışmaları içinde aktif görev aldınız mı? 4. 1998 yılında yaşadığımız bu büyük reform sizce • anlamlı bir reform muydu? • ne gibi ihtiyaçlardan doğmuştur?

	• ne gibi gerekçelerle gerçekleştirilmiştir? • yararlılığı / etkinliği / etkililiği açısından nasıl değerlendirirsiniz?
2006 ve sonrası dönem için belirli sorular	5. 2006 yılındaki revizyon çalışmalarında aktif olarak görev aldınız mı? 6. 2006 yapılan yeni düzenlemeleri nasıl değerlendiriyorsunuz?
Çok daha belirli ve ayrıntılı sorular	7. Şu anda eğitim fakültelerinde uygulanan öğretmen yetiştirme stratejileri ve müfredatı hakkında ne düşünüyorsunuz? 8. Okul deneyimi, metot ve alan derslerinin işlenişi ve uygulanışı hakkında düşünceleriniz nelerdir? 9. Öğretmen eğitimi bölümlerinin müfredatını aşağıdaki konu başlıkları bazında değerlendirir misiniz? • Derslerin yoğunluğu • Derslerin sıralanışı • Derslerin içeriği • Derslerin işlenişi
Genel anlamda ihtiyaçlara bakış	10. Sizce Türkiye'de geçmişten bu yana öğretmen yetiştirme alanında genel olarak ihtiyaçlarımız nelerdir? • Alan bilgisi açısından ihtiyaçlarımız nelerdir? • Öğretmen yetiştirme reformlarının uygulanışı açısından ihtiyaçlarımız nelerdir? • Üniversitelerde öğretmen adaylarına sunulan staj fırsatları açısından ihtiyaçlarımız

	nelerdir? • Eğitim fakültelerinin yapısı açısından ihtiyaçlarımız nelerdir?
Bazı özel konularda ayrıntılı değerlendirme	11. Eğitim Fakülteleri, YÖK ve MEB arasındaki ilişkileri nasıl değerlendiriyorsunuz?
	12. Öğretmenlere göreve başladıktan sonra sunulan imkanlardan biri olan hizmet içi eğitim seminerlerini nasıl değerlendiriyorsunuz?
Çözüm önerileri	13. Bu ihtiyaçlar doğrultusunda sizin çözüm önerileriniz nelerdir?
	14. Şu anda ülkemizin öğretmen yetiştirme ile ilgili yeni bir reforma daha ihtiyacı var mı? • Varsa, neden? Ne gibi gerekçeleriniz var?

APPENDIX B

Consent Form

Merhaba,

Ben Gamze KURT. Orta Doğu Teknik Üniversitesi Eğitim Fakültesi İlköğretim Bölümü'nde araştırma görevlisi olarak çalışıyorum. Aynı zamanda İlköğretim Fen ve Matematik Eğitimi Anabilim Dalı'nda devam ettiğim yüksek lisans eğitimimde tez aşamasına gelmiş bulunuyorum.

Tez danışmanım Dr. Çiğdem HASER ve benim içinde olduğumuz araştırma ekibi olarak yaptığımız çalışmada özellikle son 25 yılda Türkiye matematik öğretmeni yetiştirme tarihini, öğretmen yetiştirme alanında yapılmış reformları, ve bu reformların gerekçelerini anlamayı amaçlıyoruz. Bu amaçlar doğrultusunda hazırlanacak tezin ilerleyen dönemlerde öğretmen yetiştirme reformlarına ışık tutmasını hedefliyoruz.

Bilgi toplamak için planlanan bu birebir görüşmeye katılımınız, sizin tecrübelerinizden yararlanabilmemiz için ve şimdiye kadar yaşadığınız bu deneyimlerin ilerleyen dönemlerde yaşanacak öğretmen yetiştirme reformlarını etkileyebileceğini gösterebilmemiz için çok değerlidir. Bu görüşmelerde size yöneltilecek sorular çalışmamızın amaçlarıyla doğrudan örtüşmektedir. Kısaca, Türkiye'de öğretmen yetiştirme olgusuna, özellikle son 25 yılı baz alan bir çerçeveden bakarak; sistemi, sistemin dönem ihtiyaçlarını belirlemeyi, bu ihtiyaçlar doğrultusunda ne gibi önlemler alındığı ve nasıl çözümler sunulduğu, ve bu önlem ve çözümlerin hangi gerekçelere dayandırıldığı yönünde ayrıntılı sorular sorulacaktır. Konuyla yakından ilgili bu soruları cevaplamanız, katılımcı olarak size herhangi bir zarar vermeyecektir.

Bu noktada, sizden beklenen, sorulara mümkün olduğunca ayrıntılı cevaplar vermenizdir. Söyleyeceğiniz her cümle öğretmen yetiştirme tarihine ışık tutar nitelikte olduğundan çalışmamıza çok anlamlı katkısı olacaktır. Birebir yapılacak bu görüşmenin tahminen 60 – 90 dakika arasında süreceği hesaplanmaktadır. Fakat sorulara istediğiniz uzunlukta ve ayrıntıda cevap vermek tamamen sizin inisiyatifinizdedir, bu anlamda görüşmemiz sizin belirleyeceğiniz şekilde ilerleyecektir.

Görüşme sırasında aynı anda ses kaydı alınması da planlanmaktadır. Görüşme süresince katılımcının vereceği bilgilerin daha sonra özenli bir biçimde analizinin yapılmasını kolaylaştıracak ve sağlamlaştıracak bu işlemden, katılımcı olarak sizin uygun bulmamanız halinde vazgeçilebilir ya da istenildiği anda kayıt durdurulabilir veya yeniden başlatılabilir. Ses kaydını kesinlikle istemediğiniz takdirde görüşme notları tutulacaktır.

Görüşmeye katılımınız kesinlikle zorunlu değildir. Katılmamanız veya herhangi bir sebepten ötürü katılmaktan vazgeçmeniz durumunda olumsuz herhangi bir sonuçla karşılaşmanız muhtemel değildir. Başladıktan sonra dahi görüşmeyi durdurabilirsiniz.

Görüşmemiz sırasında edinilen ve kayıt altına alınan bütün bu bilgilerin güvenliği araştırma ekibinin sorumluluğundadır. Herhangi bir şekilde görüşmenin herhangi bir kanalla ibrazı söz konusu değildir. Elde ettiğimiz ses kayıtları ve görüşme notlarına sadece araştırma ekibinin erişimi vardır. Bu kayıtların kimliğinizi açığa çıkaracak şekilde çalıştığınız kuruma ya da bir başka kuruma verilmesi söz konusu değildir. Araştırma sona erdikten belli bir süre sonra kayıtlar ve görüşme notları imha edilecektir.

Araştırmamıza yönelik sorularınız olması durumunda benimle ve/veya tez danışmanımla iletişime geçebileceğiniz bilgiler aşağıdaki gibidir:

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Eğer bu çalışma için ayrıntıları yukarda açıklanmış olan birebir görüşmeler için gönüllü olmak istiyorsanız, lütfen aşağıda belirtilen yere isminizi ve tarihi yazarak imzalayınız.

Teşekkür ederim.

İsim:_____ İmza:_____

Tarih:_____