

CONTRIBUTIONS AND CHALLENGES OF COGNITIVE TOOLS AND
MICROTEACHING FOR PRESERVICE TEACHERS' INSTRUCTIONAL PLANNING
AND TEACHING SKILLS

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ABSTRACT

CONTRIBUTIONS AND CHALLENGES OF COGNITIVE TOOLS AND MICROTEACHING FOR PRESERVICE TEACHERS' INSTRUCTIONAL PLANNING AND TEACHING SKILLS

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This study aimed to investigate the potentials of two cognitive tools for instructional planning (Instructional Planning Self-reflective Tool, IPSRT, and Constructivist Planning Self-reflective Tool, CPSRT) and microteaching in gaining instructional planning and teaching skills for preservice teachers. The participants were 51 fourth year students in Computer Education and Instructional Technology program. The study is an action research with three main foci.

The first focus of this study aimed at investigating contributions and challenges involved in the use of the cognitive tools for instructional planning with tutoring from the instructor. More specifically, to what extent the preservice teachers followed these tools during this process, the effects of these tools on preservice teachers' self-efficacy, the perceived instrumentality regarding instructional planning, and the perceived contributions and challenges presented by these tools were focused. Both tools were introduced to the two sections, in different orders within four weeks. The data for this focus were collected by means of questionnaires, interviews and documents (lesson plans). This focus revealed that; expect for writing objectives, the participants could make instructional plans according to the IPSRT. They could also follow the CPSRT to design the instructional goal, required characteristics of learning activities and the assessment. Both tools were found to significantly increase their initial self-efficacy beliefs. They found CPSRT more flexible, while IPSRT easier and more helpful. This focus indicated that IPSRT and CPSRT can be used as supportive tools in preservice teachers' gaining instructional planning skills. If both tools were used, it would be better to introduce IPSRT at first and then CPSRT.

The second focus of this study was to explore the contributions and challenges of microteaching activities regarding preservice teachers' instructional planning and teaching skills. The microteaching activities took eight weeks. Throughout this phase, each student planned a 20-minute microteaching with tutoring from the instructor and performed it in the classroom. The performers were formatively evaluated through a microteaching assessment form by the instructor, the teaching assistants and some preservice teachers. Then the performers made a self-reflection assignment about their microteaching performance, considering those evaluations. In the following semester, 15 participants' perceptions about the contributions and challenges posed by microteaching activities for their instructional planning and teaching skills were obtained through interviews. More specifically, their perceptions about the microteaching planning process with tutoring, performing microteaching, formatively assessing peers' microteaching performances, being assessed by peers, and doing self-reflection assignment were analyzed. This focus revealed that although preservice teachers perceive microteaching activities as valuable experiences, microteaching would be more beneficial if the pupils were real ones, not their class-mates.

The third focus was to investigate the effects of the cognitive tools and microteaching activities on preservice teachers' lesson planning and teaching skills in their field teaching. For this aim, 12 participants' field teaching lesson plans and their performance assessments were analyzed. It was found that many of them preferred using the Microteaching Planning Guide and they had no difficulty in their lesson planning. As to field teaching performance, the analyses of the assessment forms showed that a majority of them performed successfully. Besides, most of them were observed not to have anxiety during field teaching. This focus showed that these cognitive tools and microteaching activities could improve preservice teachers' self-confidence in lesson planning and teaching skills in real class environment.

Considering to meeting the need for better qualified teachers, this study promised that applying these cognitive tools and microteaching model in schools of teacher education is likely to contribute to the instructional planning and teaching skills of preservice computer teachers. This study also offers suggestive implications for how to improve teaching methods courses with the two cognitive tools and microteaching, as well.

Keywords: Cognitive tools for instructional planning, Microteaching, Tutoring, Active learning strategies, Peer assessment.

ÖZ

ÖĞRETMEN EĞİTİMİNDE BİLİŞSEL ARAÇLAR VE MİKROÖĞRETİMİN ÖĞRETİM PLANLAMA VE ÖĞRETME BECERİLERİNE KATKILARI VE KARŞILAŞILAN GÜÇLÜKLER

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Bu çalışma, öğretmen adaylarına ders planlaması ve öğretme becerileri kazandırılmasında kullanılan bilişsel araçların (IPSRT ve CPSRT) ve mikroöğretim yönteminin potansiyellerini araştırmayı amaçlamıştır. Çalışmanın katılımcıları Bilgisayar ve Öğretim Teknolojileri Eğitimi programına devam eden dördüncü sınıf 51 öğrencidir. Bu çalışma üç odağı olan bir eylem araştırmasıdır.

Çalışmanın ilk odağı, öğretmen adaylarının ders planlamasında kullandığı bilişsel araçların planlama becerilerine katkıları ve karşılaşılan sorunları araştırmayı amaçlamıştır. Özellikle, öğretmen adaylarının ders planlamasında bu araçları kullanma derecelerine, bu araçların öğretmen adaylarının planlama öz-yeterliklerine ve planlamaya verdikleri öneme etkilerine, ve bu araçların algılanan katkılarına ve sorunlarına yoğunlaşmıştır. Bu iki araç dört hafta boyunca iki grupta farklı sıra ile işlenmiştir. Veriler, anket, görüşme ve döküman (ders planları) yardımıyla toplanmıştır. Bu odak, öğretmen adaylarının öğretim hedefleri yazma dışında, IPSRT'ye göre ders planı yapabildiklerini ortaya çıkarmıştır. Öğretmen adayları, CPSRT'yi ders planlarının öğretim amacı, öğrenme etkinliklerinin gerekli özellikleri ve değerlendirme bölümlerini hazırlarken kullanmışlardır. Her iki aracın öğretmen adaylarının başlangıç düzey öz-yeterlik inanışlarını önemli derecede arttırdığı bulunmuştur. Öğretmen adayları, planlamada CPSRT'yi daha esnek bulurken, IPSRT'yi daha yardımcı ve kolay bulmuşlardır. Bu odak, IPSRT ve CPSRT'nin ders planlama becerilerinin kazanımında destekleyici araç olarak kullanılabileceğini göstermiştir. Eğer öğretmen adaylarının eğitiminde her iki araç kullanılacaksa, önce IPSRT'nin sonra CPSRT'nin işlenmesi daha etkili olacaktır.

Bu çalışmanın ikinci odağı, öğretmen adaylarının ders planlama ve öğretme becerileriyle ilgili mikroöğretim etkinliklerinin katkıları ve karşılaşılan sorunları araştırmıştır. Mikroöğretim etkinlikleri sekiz hafta sürmüştür. Bu odakta, her öğretmen adayı öğretim elemanın yardımıyla 20 dakikalık bir mikroöğretim planlamış ve bunu sınıfta sunmuştur. Ders öğretim elemanı, ders asistanları ve bazı öğretmen adayları, sunu yapanları bir mikroöğretim değerlendirme formu kullanarak değerlendirmiştir. Sunu yapanlar, yapılan değerlendirmeleri göz önünde bulundurarak kendi sunularıyla ilgili bir öz-değerlendirme ödevi yapmışlardır. Daha sonraki dönem, 15 öğretmen adayının ders planlaması ve öğretme becerilerine yönelik yapılan mikroöğretim etkinliklerinin sağladığı katkılar ve karşılaşılan sorunlar ile ilgili düşünceleri görüşme yoluyla elde edilmiştir. Bu öğretmen adaylarının özellikle öğretim elemanı destekli mikroöğretim planlama süreci, mikroöğretimi sunması, sunuları değerlendirmesi, değerlendirilmesi, ve öz-değerlendirme ödevini yapması ile ilgili düşünceleri analiz edilmiştir. Bu odakta, öğretmen adayları mikroöğretim etkinliklerini değerli deneyimler olarak görmüşler, ancak mikroöğretimde öğrencilerin kendi arkadaşları değil de, gerçek öğrenci olmasının daha yararlı olacağını bildirmişlerdir.

Üçüncü odak, bilişsel araçların ve mikroöğretim etkinliklerinin öğretmen adaylarının öğretmenlik uygulaması kapsamında ders planlamalarına ve öğretme becerilerine etkilerini araştırmıştır. Bu amaç için, 12 öğretmen adayının ders planları ve ders sunum değerlendirmeleri analiz edilmiştir. Öğretmen adaylarının yarısından fazlasının Mikroöğretim Planlama Yönergesi kullanmayı tercih ettiği ve ders planlamada çok fazla sıkıntı yaşamadığı bulunmuştur. Okullarda yapılan öğretmenlik uygulaması değerlendirmeleri dikkate alındığında, çoğu öğretmen adayı başarılı bulunmuştur. Bunun yanı sıra, öğretmenlik uygulamasında çoğu öğretmen adayının yüksek kaygı yaşamadığı gözlenmiştir. Bu odak, bu bilişsel araçların ve mikroöğretim etkinliklerinin öğretmen adaylarının ders planlama ve gerçek sınıf ortamındaki öğretme becerilerine yönelik öz-güvenlerini geliştirdiğini göstermiştir. Daha nitelikli öğretmen yetiştirme ihtiyacının karşılanması düşünüldüğünde; bu çalışma, bu bilişsel araçların ve bu mikroöğretim modelinin eğitim fakültelerinde uygulanmasının, bilgisayar öğretmen adaylarının ders planlama ve öğretme becerilerine katkıda bulunacağını kuvvetle işaret etmektedir. Çalışma, öğretim yöntemleri derslerini bu araçlar ve bu mikroöğretim modeliyle iyileştirmeye yönelik önerilerde bulunmaktadır.

Anahtar Kelimeler: Öğretim planlaması için bilişsel araçlar, Mikroöğretim, bireysel öğretim, aktif öğrenme stratejileri, akran değerlendirmesi.

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LIST OF ABBREVIATIONS

- CEIT:** Computer Education and Instructional Technology
- CFA:** Confirmatory Factor Analysis
- CMC:** Computer Mediated Communication
- CPSRT:** Constructivist Planning Self-reflective Tool
- IPSRT:** Instructivist Planning Self-reflective Tool
- ID:** Instructional Design
- ID_{NT}:** Instructional Design for Novice Teachers
- MAF:** Microteaching Assessment Form
- METU:** Middle East Technical University
- MONE:** The Ministry of National Education in Turkey
- MPG:** Microteaching Planning Guide
- ÖSS:** University Entrance Exam in Turkey (Öğrenci Seçme Sınavı)
- PI:** Perceived instrumentally of lesson planning
- RQ:** research question
- SD:** Standard Deviation
- SE:** Self-efficacy Score
- SPSS:** Statistical Package for the Social Sciences
- STEs:** Schools of Teacher Education
- VET:** Vocational Education and Training School
- WWW:** World Wide Web
- YÖK:** Higher Education Council in Turkey (Yüksek Öğretim Kurulu)

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Teachers need to master many skills in order to perform their professional role in schools. Among these skills the most essential ones are instructional planning, and teaching skills. For developing these skills, Schools of Teacher Education (STEs) give great importance to the acquisition of theoretical knowledge and practical skills by preservice teachers.

School conditions, curricular orientation in use, and pupil characteristics face teachers with the need to bring alternatives to instructional activities, and these alternatives should be based on various theoretical approaches. Considering the existence of more than one way of solving an instructional problem, the ability of preservice teachers to employ different instructional approaches when planning is both appropriate and necessary (Baylor & Kitsantas, 2005). Therefore, experience in planning instruction with different theoretical approaches is quite important for preservice teachers.

In the literature, two cognitive tools for instructional planning (Baylor, Kitsantas, & Chung, 2001; Kitsantas, Baylor, & Hu, 2001) and an Instructional Design (ID) model (Brantley-Dias & Calandra, 2007) have been developed for particularly preservice teachers, intended to support their reflective thinking in the instructional planning process. Two cognitive tools for instructional planning were developed to enhance instructional planning skills based on the instructivist and constructivist instructional planning approaches: the Instructional Planning Self-Reflective Tool (IPSRT), and the Constructivist Planning Self-Reflective Tool (CPSRT), respectively (Baylor, Kitsantas, & Chung, 2001; Kitsantas, Baylor, & Hu, 2001). These tools were designed to guide and enhance the thinking processes of preservice teachers, to improve self-regulation about instructional planning process, and to help the teachers understand the complexity and comprehensiveness of the process in either theoretical approach (Baylor & Kitsantas, 2005; Kitsantas, Baylor & Hu, 2001; Kitsantas & Baylor, 2001). These cognitive tools are more practical in preservice teachers' self-regulated practice to improve instructional planning skills than the ID model (IDNT) of Brantley-Dias

and Calandra (2007). Furthermore, the tools promise to facilitate transformation of basic principles of the two major theoretical approaches into practice.

There are several studies investigating the impact of these cognitive tools on preservice teachers' attitudes and instructional planning performance. These studies revealed that the IPSRT is beneficial for self-monitoring and self-evaluation (Baylor, Kitsantas & Chung, 2001) and it improves instructional planning performance and disposition towards instructional planning (Kitsantas & Baylor, 2001), while the CPSRT is helpful for self-evaluation, organization and self-monitoring, and it provides cognitive flexibility (Kitsantas, Baylor & Hu, 2001). Moreover, both tools lead preservice teachers to create instructional plans in their intended theoretical approach, and there is no significant difference between the impact of them regarding instructional planning performance, motivation and attitude towards instructional planning, and in terms of the perceived tool value (Baylor & Kitsantas, 2005).

The researcher realized that there are a limited number of studies of the impact of these tools on preservice teachers' attitudes, self-efficacy and performance regarding instructional planning. Moreover, the researcher did not find such a research study that these tools have been undertaken in Turkey. It is also noteworthy that the extent to which preservice teachers follow or use the tools in the process of instructional planning has not yet been investigated, although it is a significant indicator of tool effectiveness and shows how the tools are perceived and used. Considering the importance and complexity of gaining instructional planning skills, and the limited number of instructors in STEs in Turkey, these tools may help preservice teachers develop high quality lesson plans with either theoretical approach. Hence, it was decided to investigate the contributions and challenges that these cognitive tools presented to preservice teachers in the department of Computer Education and Instructional Technology (CEIT) at Middle East Technical University (METU) in Ankara, Turkey. This study would specifically investigate how challenges and contributions presented by these tools would affect the teachers' instructional planning skills.

As to acquiring teaching skills, the real classroom environment is so complex that it requires teachers to be equipped with many teaching skills, such as communication, questioning, classroom management, assessment and so forth. Preservice teachers need to practice or rehearse what they have learned throughout their undergraduate programs in STEs before entering the real classroom environment. The professional development of preservice teachers tends to be shared, but divided between university and school settings (Wilson & I'Anson, 2006). According to Furlong (1996), it is possible in this context to identify three types of partnerships, which can be seen as points on a continuum from university-based to school-based: (1) collaborative partnerships, (2) higher education

institution-led partnerships and (3) separatist partnerships (as cited in Wilson & I'Anson, 2006). Although the trend is towards collaborative partnerships, there is an increasing political pressure to make schools the place of the practice (Furlong, 1996). The collaborative partnership proposed by Furlong (1996) is preferred as potentially offering both "reduced complexity" and "critical engagement" (Wilson & I'Anson, 2006). According to Wilson and I'Anson (2006), a strong university-based dimension to initial teacher education is both necessary and desirable with such an approach.

Wilson and I'Anson (2006) propose that practicum in initial teacher education programs is regarded as equivalent to students' undertaking some practice in school, whereas according to Schön (1982, 1987), the transition from one context to the other one should be smooth (Wilson & I'Anson, 2006). Doing the practicum in a school context could even be dangerous for preservice teachers at early stages in their teacher education. It may inhibit the development of a reflective practice and an understanding of the real meaning and implications of pedagogical concepts, due to the pressures in the school practice context (Maynard, 2001; Meadows, 1993 as cited in Wilson and I'Anson, 2006).

Microteaching is an effective way of helping preservice teachers learn about and reflect upon teaching skills (I'Anson, Rodrigues & Wilson, 2003; Kpanja, 2001; Simbo, 1989). Schön (1987) proposes that the use of reflective practicum is a means to promote reflection. The microteaching practicum provides such a context that it minimizes the pressures, distractions, and risks of the real world (Schön, 1987, p.37). Wilson and I'Anson (2006) outline a number of ways in which the practicum, which is described by Schön (1987), is significantly different from the replication of the complexity in the real world. In fact, a key dimension of the practicum is the reduction of complexity, because the difficulties of the real world would be hindrances to the main purposes of the practicum.

Wilson and I'Anson (2006) contend that Schön's practicum, given its reduction of complexity, provides an environment for preservice teachers to rethink the meaning of teaching and being a teacher. Hence, the practicum potentially provides opportunities for preservice teachers to become aware of their own pre-conceived ideas of teaching. Furthermore, this practicum enables students to consider alternative pedagogies and their implications for the practice of teaching. Moreover, preservice teachers are free from many pressures of field teaching that they will encounter when they move into the actual school experience. Another dimension of the practicum is its unusual location betwixt and between two contexts which are usually regarded as distinct. Microteaching practicum is viewed as a valuable transitional space that is located between the university and the school-based practice. It is not regarded as an alternative to school-based experience (Allen and Eve, 1968), but it is a valuable preliminary field of action (Wilson & I'Anson, 2006).

In Turkey, microteaching was first launched into the program of technical teacher education school programs as a two-credit course within the Second Industrial Education Project in the academic year of 1990-1991, and microteaching was at least eventually applied then; it has been used in developed countries since the 1960s (Uşun & Zorlubaş, 2007). Turkey is quite late in coming to the field of research regarding microteaching applications (Şen, 2007); this lies parallel to its late starting of microteaching practice. There are a limited number of studies on microteaching (Çakır, 2000). According to some views and beliefs in the literature, the microteaching method is not widely used in Turkey because this method is not well-known and it is thought that this method cannot be applied without video and display equipment (Uşun & Zorlubaş, 2007), and the teacher training system does not promote its usage much (Çakır, 2000). However, microteaching should be reconsidered as a study, since video technology has recently become more accessible and affordable (Şen, 2007) as well as more advanced.

The literature implies that when the responsibility for gaining teaching skills is totally left to the school context, preservice teachers do not engage in reflective practice, and cannot understand the real meanings and implications of pedagogical concepts in that complex environment (Francis, 1997; Wilson & I'Anson, 2006). When it is totally left to the teaching faculty at STEs, theoretical knowledge and insight develop, but teaching practice and professional skills that really work in a school context can not be acquired (Francis, 1997; Wilson & I'Anson, 2006). In this sense, collaborating with teachers working at schools is highly desired in order to help preservice teachers gain teaching skills. However, collaborating with teachers has a financial burden and is not applicable to many STEs (Subramaniam, 2006). Therefore, the literature calls for a faculty-based solution to the problem of acquiring teaching skills. One suggestion is for faculty at STEs to monitor the practice at a school. The researcher has one year of teaching experience as a computer teacher in an elementary school. During her teaching, she recognized that there are difficulties for novice teachers in computer courses, in terms of selecting and using appropriate teaching strategies, methods and techniques, choosing appropriate teaching materials and assessing students. Çakır (2008) also indicated similar problems of computer teachers. Considering the call from the literature for more faculty-based solutions to giving teaching skills to preservice teachers, and her teaching experience, she decided to investigate the contributions and challenges presented by microteaching for improving teaching skills of CEIT preservice teachers.

1.2 Purpose of the Study

The present study aimed to investigate the potential of cognitive tools (IPSRT and CPSRT) for instructional planning and microteaching in gaining instructional planning and teaching skills to CEIT preservice teachers. It was applied to preservice teachers in the Teaching Methods II in Computer Education course in the department of CEIT in the 2007 fall semester. Accordingly, it has three main focuses.

The first focus was specifically aimed at inquiring into the contributions and challenges presented by the cognitive tools (IPSRT and CPSRT) for improving instructional planning skills. More specifically, the extent to which preservice teachers follow these tools during instructional planning, the effect of these tools on preservice teachers' self-efficacy and perceived instrumentality regarding instructional planning, and the perceived contributions and challenges of using these tools were analyzed. These tools were applied in a field-specific setting: senior preservice computer teachers used them to plan instruction for the instructional goals selected from the curriculum of the computer education course for K-8 (MONE, 2006).

The second focus was to investigate the contributions and challenges posed by microteaching activities held in the last eight weeks of the course in terms of preservice teachers' instructional planning and teaching skills. For this purpose, the preservice teachers' opinions about the microteaching, about its contributions to their teaching knowledge and skills and about its challenges have been examined. More specifically, students' perceptions about the microteaching planning process through tutoring, performing microteaching, formatively assessing peers' microteaching performances, and being assessed by peers, and methods of reflecting on their own microteaching performance were studied.

The third focus was to investigate the effects of the cognitive tools and microteaching activities on preservice teachers' field teaching plans and performances. Preservice teachers' field teaching lesson plans and teaching performance assessments were analyzed. Field teaching was a requirement of the CEIT 410 Teaching Practice course given in the following semester.

1.3 Research Questions of the Study

The following research questions about the cognitive tools for instructional planning (IPSRT and CPSRT) were asked:

1. What are the contributions and challenges posed by the cognitive tools in improving CEIT preservice teachers' instructional planning knowledge, skills and attitudes in the field of computer education?

- 1.1. To what extent do the preservice teachers follow the IPSRT and CPSRT during instructional planning?
- 1.2. Does either the IPSRT or the CPSRT better enhance preservice teachers' self-efficacy regarding planning instruction?
- 1.3. Does either the IPSRT or the CPSRT better enhance preservice teachers' perceived instrumentality of instructional planning?
- 1.4. What are the preservice teachers' perceptions of the contributions and challenges involved in using these tools for instructional planning?

Regarding the microteaching method, the following research questions were asked:

2. According to CEIT preservice teachers, what are the contributions and challenges presented by the microteaching model used in the Teaching Methods in Computer Education II course, as a method to improve instructional planning and teaching skills?
 - 2.1. What are the contributions and challenges presented by tutoring used throughout microteaching planning process, for preservice teachers' instructional planning and teaching skills?
 - 2.2. What are the contributions and challenges presented by microteaching performance for preservice teachers' instructional planning and teaching skills?
 - 2.3. What are the contributions and challenges presented by assessing peers' microteaching performance through the Microteaching Assessment Form, for preservice teachers' instructional planning and teaching skills?
 - 2.4. What are the contributions and challenges presented by being assessed through the Microteaching Assessment Form, for preservice teachers' instructional planning and teaching skills?
 - 2.5. What are the contributions and challenges presented by doing a self-reflection assignment, which involves analyzing feedback given by the instructor, teaching assistants and peers?
3. What are the effects of the cognitive tools and the microteaching method used in the Teaching Methods in Computer Education II course, on preservice teachers' field teaching planning and performances?

1.4 Significance of the Study

There are a limited number of studies of the impact of cognitive tools for instructional planning (IPSRT and CPSRT) on preservice teachers' attitudes, self-efficacy and performance regarding instructional planning, all of which were conducted by the developers of the tools. One of those studies deduced that these tools have equal impact on preservice teachers' instructional planning performance and attitudes, and that the students

value both tools equally (Baylor & Kitsantas, 2005). However, the extent to which preservice teachers follow or use the tools in the process of instructional planning has not yet been investigated, although it is a significant indicator of tool effectiveness and it shows how the tools are perceived and used. In addition, no research study related to implementation of these tools has been undertaken in Turkey. Therefore, the present study can make an important contribution in this sense.

As for microteaching, the research on microteaching has a long history beginning from the 1960s. Research on this method has been over in the 1970s, when its value and limitations were identified and accepted by educational researchers (Bell, 2007). However, the changes in educational research methods and developments with the change of theory and practice of teacher education reveal that it is time to re-examine the microteaching method, by focusing on how to improve its practice (Bell, 2007). Inquiring the preservice teachers' perceptions regarding the advantages and problems posed by planning microteaching, performing microteaching, being assessed by others, assessing others, and reflecting on their own performance, the present study can contribute to answer the question of how to improve microteaching practice from the view of preservice teachers who are in the center of this experience with different roles.

One of the important missions of the departments of CEIT is to train computer teachers for teaching computer literacy in K-12 schools. The study of Çakır (2008), which focuses on CEIT preservice teachers' and inservice teachers' pedagogical content knowledge, revealed that there is a mismatch between what is taught in teaching methods courses and what actually is done in computer lessons in a computer laboratory.

Examining the advantages and problematic issues of alternative methods offered in the literature -such as the cognitive tools and microteaching models- applied in teaching methods courses would be an important contribution to enhance teaching method courses in these departments at STEs. Furthermore, conducting research on the efficiency of these two methods of teacher training in Turkey would be an important contribution to the research literature on teacher training. In fact, the researcher could not find any research on improving teaching method courses at CEIT departments in Turkey. In this sense, this study can be an initial endeavor in closing an important gap in the training of computer teachers.

More specifically, this study could have two contributions to the teacher training. First, the results of the study could yield valuable information for instructors in CEIT programs regarding the validity and the importance of the cognitive tools for instructional planning (IPSRT and CPSRT) in supporting the instructional planning process of preservice computer teachers in the two main theoretical paradigms, namely, instructivist or constructivist. The results may also indicate the efficacy of these tools for other teacher

education programs. Second, the results could shed light on the advantages and problematic issues of applying microteaching in teaching method courses in the training computer teachers. According to the results regarding the microteaching method, the used microteaching model could be amended to use in teacher training programs with high ratios of students per instructor. It could also be used in other programs at STEs and professional development programs for improving teachers' lesson planning and teaching skills.

1.5 Definition of Important Terms

Microteaching: It is a method, especially used in teacher education to provide preservice teachers with a safe teaching practice environment before teaching in the schools. Since its first implication in the 1960s, it has been changed drastically and used in many ways. It involves simplification of teaching environment in terms of time, content, and number of students, audio/video recording of teaching performance, and feedback from a supervisor and/or peers. During a typical microteaching session, a preservice teacher teaches a limited number of students a limited topic in a limited time in a laboratory environment.

Instructional Planning Self-reflective Tool (IPSRT): A self-regulation tool developed by Baylor, Kitsantas and Chung (2001), which is designed to help preservice teachers in making instructional plans in the traditional approach (e.g. instructivist). It aims to improve preservice teachers' self-regulatory skills, especially, self-monitoring and self-evaluation in their self-directed lesson planning process. It consists of some titles and prompted questions under each title, which is shown in Appendix B.

Constructivist Planning Self-reflective Tool (CPSRT): A self-regulation tool developed by Kitsantas, Baylor and Hu (2001), which is designed to support preservice teachers in developing instructional plans in the constructivist approach. It aims to improve preservice teachers' self-regulatory skills, particularly, self-monitoring, self-evaluation and cognitive flexibility in their self-directed lesson planning process. It consists of some titles and prompted questions under each title, which is shown in Appendix B.

Cognitive Tools for Instructional Planning: This term was used by the researcher throughout the dissertation to refer to both self-regulation tools for instructional planning (IPSRT and CPSRT). It should be noted that these tools are aimed to promote preservice teachers' self-regulation skills, such as self-evaluation, self-monitoring, organization and cognitive flexibility, during instructional planning. Jonassen and Reves (1996) state that cognitive tools are "technologies that enhance the cognitive powers of human beings during

thinking, problem solving, and learning” (p.693). However, these cognitive tools are not computer-based, as the term “cognitive tool” often refers to in the literature.

Field teaching: This refers to the three 40-minute macro teaching episodes (teaching the whole class) performed by each preservice teacher in a real classroom environment at school. This is within the requirements of the course called “CEIT 410 Teaching Practice” which is offered in the last semester of the CEIT program. One of these episodes is called “assessed teaching”, which is assessed by a teaching assistant of that course. The lesson plans and assessment forms for 12 preservice teachers’ assessed teaching was analyzed in the follow-up phase (3rd phase) of the present study.

Instructional Planning Skills: The cognitive skills used for developing instructional planning, such as specifying instructional goals, considering learner characteristics, designing learning activities appropriate to learner characteristics and instructional goals, and designing appropriate assessment, etc.

Teaching Skills: The cognitive, behavioral, social and affective skills necessary to implement an instructional plan successfully, such as using strategies to gain attention and motivate learners, implementing planned teaching methods, using strategies to recall prior knowledge, making students active by asking questions and engaging them into activities, giving examples from daily life to make the topic concrete, making assessments and restating the major points, etc.

Self-efficacy regarding instructional planning: The term self-efficacy refers to one’s beliefs about his/her capabilities to learn or perform actions at designated levels (Bandura, 1986). It is accepted as an indicator of intrinsic motivation (Geen, 1995, Kitsantas & Baylor, 2001). Self-efficacy regarding instructional planning means preservice teachers own beliefs about their capabilities to learn or perform instructional planning for the classroom context. Investigating the effects of the cognitive tools for instructional planning on preservice teachers’ self-efficacy regarding instructional planning was among the aims of the present study.

CHAPTER 2

LITERATURE REVIEW

In this chapter, firstly, the literature regarding cognitive tools for instructional planning (IPSRT and CPSRT), which were developed for supporting novice teachers' instructional planning process, are surveyed. The definition and description of these tools and previous research studies on efficiency of these tools were discussed. Afterwards, comparison of these tools, and self-efficacy and self-regulation were briefly given. Secondly, the use of microteaching method in STEs and research regarding this method are presented. More specifically, the following aspects were discussed in this part: a description and the historical development of microteaching, current trends in research and practice regarding microteaching in teacher education, tutoring in developing instructional planning and teaching skills, the nature of pupils in microteaching, evaluation and feedback for microteaching performance, the effects of using video recording in microteaching, preservice teachers' opinions about their microteaching experiences, the impact of microteaching on teaching practice in real classrooms, and research on microteaching in Turkey. Finally, training computer teachers for basic education schools in Turkey was presented.

2.1 Cognitive Tools for Instructional Planning

Planning instruction is an important capability that every teacher has to possess, which involves complex and interrelated skills. Richard (2004) puts into words the importance of planning as follows: "Planning is the point at which teachers begin to shape and mold the sorts of learning opportunities that are provided to students. While not an end in itself, planning is a significant link, and a potentially powerful force to shape curriculum, teaching and student learning." (pp.115). Therefore, giving preservice teachers instructional planning skills has always been one of the central goals of Schools of Teacher Education (STEs) programs. However, acquiring instructional planning skills for surely and effectively planning lessons involves providing preservice teachers with not only theoretical knowledge, but also a considerable amount of practice. In STEs, without facilitating sufficient and well-designed practice in planning, teaching activities for gaining planning skills are so theoretical that preservice teachers can not learn how to plan their instruction in a real sense. In such a

case, preservice teachers do not engage in practice and feedback opportunities, which are necessary for developing complex and interrelated instructional planning skills. Besides practicing planning on paper, preservice teachers should be given teaching opportunities to implement their lesson plans, in order to understand the relationships between theory and teaching practice. By doing so, they can compare what they intend and what really occurs in the classroom. This process can improve their metacognitive skills or reflective thinking about instructional planning as well as teaching.

Contrary to the belief that instructional planning skills are critical for effective teaching in the classroom, there is not much evidence that experienced teachers always use their planning skills (Young, Reiser & Dick, 1998). This means that, even if the teachers acquire planning skills in STEs, it does not guarantee that they will plan their instruction in their professional life. This could have several reasons. First, the contexts of university and school are quite different in their values, rules, and expectations from teachers (Schön, 1987). While STEs demand preservice teachers to plan and think critically about their teaching actions, teachers are under the pressure of heavy workloads and many duties at school and accordingly they have only limited time to plan their instruction by themselves. Furthermore, the Ministry of National Education in Turkey (MONE) may not expect teachers to write lesson plans; rather, it may provide teachers with ready-made lesson plans and/or lesson plan templates proper to the curriculum to be followed. Moreover, teachers' beliefs about planning teaching and learning could hinder them in giving the necessary importance to planning instruction. Francis (1997) states that preservice teachers enter STE programs with embedded beliefs about teaching and learning, and faculties of STEs also accept this fact. Thus, throughout the education in STE, teacher trainers have to seriously consider the facilities and experiences that may enable preservice teachers to explore and reconstruct their beliefs regarding the concepts of teaching and learning (Francis, 1997).

On the other hand, experience is an important factor in teachers confidently planning effective lessons under time limitations (Hogan, Rabinowitz and Craven, 2003; Richard, 2004). Hogan, Rabinowitz and Craven (2003) indicate some important differences between experienced and novice teachers in their pedagogical knowledge and skills. For instance, unlike experienced teachers, novice teachers cannot visualize planning as a scaffolding tool for events; rather, preservice teachers perceive lesson planning as an individual, daily episode unconnected to the curriculum as a whole. In planning, experienced teachers consider more detail for many variables, such as availability of equipment, student ability, and prior knowledge, but novice teachers generally do not consider these details and directly begin to develop their lesson plans. While experienced teachers tend to use multiple assessment strategies throughout a lesson to understand their students' schemas before

introducing new knowledge, novice ones tend to teach without considering the importance of the connection between the prior and new knowledge (Hogan, Rabinowitz and Craven, 2003).

Similarly, Richard (2004) conducted a case study to illustrate one beginner and one experienced elementary teachers' lesson planning processes and tried to investigate factors affecting their planning decisions. She collected data through semi-structured interviews and a think-aloud protocol over a period of six months. The factors affecting teachers' planning decisions were found to be curricula, teaching expertise, or experience, and the state-mandated testing of students. Her study indicated that there is a difference in the planning practices of more experienced and less experienced or beginning teachers. The experienced teacher (having 16 years of teaching experience) had developed a routine for planning and was able to anticipate what would happen in the classroom. He had a large repertoire of materials and activities. He had both long term and short term planning. He reflected on his teaching mostly mentally. On the other hand, the beginning teacher focused largely on short-term planning and avoided long term planning, because her experience was not enough to anticipate accurately what would happen in the classroom in terms of time management and meeting learning goals. Issues of what and how to teach were foremost in her mind. Finding materials and activities was more labor-intensive and time-consuming for her. She reflected on her teaching by writing about it. Richard (2004) recommends that beginning teachers should be helped to access and to build a collection of instructional materials and activities. It is plausible to take these planning problems of inexperienced teachers into consideration when planning how to gain instructional planning skills in STE programs.

Regarding the place of theory in the planning routines of the teachers, teachers do not plan their teaching based on theoretical considerations (Richard, 2004; McCutcheon, 1980). Richard (2004) deduced that planning was a practical task for both teachers and planning processes centered on facts and experiences rather than theory. These teachers' concerns in planning and teaching were about content, materials and time. Regardless of experience factor, they focus on practical issues such as what to teach and which materials to use. They considered what the best choice was in the available resources (Richard, 2004). McCutcheon (1980) also found, in a study of teacher planning, that the participating teachers rarely related theory to their practice. Rather, the issues focused on were the ones that would help them finish the day. Deciding what to teach, which materials to use and how to arrange instruction within prescribed timeframes took precedence over considering what should be taught and what should be the best way to teach the topic.

Schlitzkus (1981) conducted a study to develop and test a series of lesson plan formats to determine the most feasible design for lesson preparation in secondary schools.

He developed four different lesson plan formats to be used to plan lessons, and field tested them with 16 teachers from four different secondary schools. Forty six per cent of participants selected the lesson plan format, including the following parts: objectives, purpose of the lesson, teacher and learner activities and an evaluation. A majority of teachers reported that short, coinciding behavioral objectives were more beneficial for them than the suggested ABCD (Audience, Behavior, Condition, Degree) form, which is in the lesson planning manual that Schlitzkus (1981) developed. This led to a revision of the recommended lesson plan style.

Besides efforts in developing lesson plan formats, in the literature there are various ID models to help teachers plan their lessons on their own for a classroom context. In the ID models taxonomy of Gustafson and Brach (1997), there are four models selected to represent the variety of ID models most applicable in the classroom environment: Gerlach and Ely (1980); Kemp, Morrison and Ross (1994); Heinich, Molenda, Russel and Smaldino (1996); and Reiser and Dick (1996). They notice that “these models are acceptable and readily understandable by at least some teachers” (Gustafson and Branch, 1997, p. 34). This statement implies that these ID models may not be understandable for every teacher, thus it could be inferred that they are already not at all appropriate for preservice teachers to learn and use for instructional planning.

In order to support particularly novice teachers’ reflective thinking in the instructional planning process, there are some ID models (Brantley-Dias & Calandra, 2007) and cognitive tools (Baylor & Kitsantas, Chung, 2001; Kitsantas, Baylor & Hu, 2001). Brantley-Dias and Calandra (2007) created a two-part design model to address the needs of preservice teachers who lack knowledge of design principles and reflective dispositions, called Introducing Design to Novice Teachers (ID_{NT}) (Brantley-Dias & Calandra, 2007). As for the cognitive tools, they were intended to guide and enhance the thinking processes of the preservice teachers and improve self-regulation during instructional planning using either the traditional or the constructivist approach, called IPSRT and CPSRT, respectively (Baylor, Kitsantas, & Chung, 2001; Kitsantas, Baylor, & Hu, 2001). The first phase of this study focuses on the contributions and challenges of using these cognitive tools in improving lesson planning skills. The tools and related studies about them are described below.

2.1.1 Instructional Planning Self-reflective Tool (IPSRT)

Planning instruction is a self-directed practice, which requires high levels of self-regulation skills (Baylor, Kitsantas & Chung, 2001). Zimmerman (1989) defines self-regulation as the degree to which an individual is metacognitively, behaviorally and motivationally aware of his or her learning processes. Self-regulation includes many

strategies such as self-monitoring and self-evaluation. Self-monitoring of performance involves observing, tracking and recording performance outcomes, and self-evaluation involves setting standards and using them for self-judgment (Baylor, Kitsantas & Chung, 2001).

Baylor, Kitsantas and Chung (2001) state that preservice teachers have two major difficulties in understanding the phases of systematic instructional planning (goals, objectives, instructional activities, assessment, etc). One difficulty is at micro-level: that is, students can not apply the necessary skills within each phase. The other is at macro-level: that is, preservice teachers do not reflect an understanding of how the phases are interrelated and interconnected in the process of instructional planning. In order to help preservice teachers deal with the challenges at micro and macro level during instructional planning in the traditional approach, they developed a tool called the Instructional Planning Self-reflective Tool (IPSRT).

The IPSRT was developed on the basis of research into self-regulated learning (Zimmerman, 2000) and based on the ID model of Reiser and Dick (1996) (Baylor, Kitsantas, & Chung, 2001). More specifically, it facilitates implementing a traditional instructional systems design model based on the models of Reiser and Dick (1996) and Dick and Carey (1996). This tool was intended to facilitate the use of self-regulatory strategies, especially self-monitoring and self-evaluation during the lesson planning process (Baylor, Kitsantas & Chung, 2001). It has the following parts based on Reiser and Dick (1996): instructional goal, objectives, materials/preparation, learner characteristics, procedure and assessment. These parts indicate the phases of planning. The IPSRT consists of a number of prompted questions helping the preservice teachers to assess whether each part was covered in their lesson plan under each subheading, as seen in Appendix B. The designers of the tool underlined that providing students with strategic or cognitive tools like IPSRT to guide learning (e.g. leaning to develop lesson plans) during self-directed practice would be helpful, because practice usually occurs with no or limited feedback from the instructor.

Baylor, Kitsantas and Chung (2001) tested the IPSRT with 175 students in seven sections of an introductory educational technology course. The instructor presented a sample lesson plan that contained errors, via PowerPoint slides and demonstrated how to use the IPSRT to find errors. Thereby, the instructor showed how to evaluate each component of a lesson plan with this tool. After this in-class demonstration, the students were given a case for developing a lesson plan with the help of the IPSRT. The students were also given a take-home assignment to practice independently at home. The next week, students were asked to express the benefits of the IPSRT throughout the lesson planning process. They did not report how they collected data, but most probably they administered an open-ended

questionnaire. They coded the answer as yes/no for self-monitoring, self-evaluation and organization as benefits of the tool. Eighty per cent of the students reported that it was useful for self-monitoring, 75% reported that it was useful for self-evaluation, and 25% reported that it was helpful for organization. They concluded that this tool can improve the quality of lesson plans since it contributes not only to self-monitoring and self-evaluation for preservice teachers, but also the organization of the plan. They particularly stated that the IPSRT may be used by preservice teachers when they practice effectively writing lesson plans by themselves.

Kitsantas and Baylor (2001) conducted a quasi-experimental study to investigate the impact of the IPSRT on preservice teachers' performance, disposition and their own efficacy (self-efficacy) beliefs regarding systematic (or traditional) instructional planning. The participants were 144 students in seven sections of an introductory educational technology course. Both the control and the experimental group were given instruction on how to write lesson plans, with identical course materials such as PowerPoint presentations introducing systematic instructional planning, and cases for lesson planning, etc. But, the experimental group was additionally provided with the IPSRT and instruction on how to use it while engaging in instructional planning. For a two-week-intervention, one instructor taught all of the sections. Students developed lesson plans as an in-class activity and a homework assignment. However, the instructor did not grade them or give any feedback to the students. The next week, they administered an identical quiz to both groups, which required writing a lesson plan for the given case. The experimental group was provided with the IPSRT so that they could use it during the quiz. After the quiz, similar to at the beginning of the intervention, the participants were asked about their own efficacy, perceived instrumentality, and disposition regarding instructional planning. The tool was introduced to the control group after the intervention and they were allowed to revise their quizzes with the tool. Then the beliefs about their own efficacy, perceived instrumentality, and disposition regarding instructional planning were once more obtained from the control group, as well.

Their results indicated that the IPSRT particularly improved students' instructional planning performance and their disposition towards instructional planning. The experimental group was significantly more successful in lesson planning performance. For disposition towards instructional planning, there was no significant difference between the control and the experimental group at the beginning, but after the intervention, the disposition of the experimental group was significantly higher than that of the control group. The students who had used the IPSRT described lesson planning with more positive adjectives such as important and helpful while students in the control group described it with negative adjectives such as time-consuming and useless. However, for change in self-efficacy beliefs

regarding instructional planning after the IPSRT intervention for the experimental group, the paired t-test showed no significant change. Nevertheless, with some further analysis, Kitsantas and Baylor (2001) realized that students with earlier high-self-efficacy ratings reported significantly lower self-efficacy, while students initially having low self-efficacy ratings reported significantly higher self-efficacy following the tool intervention. They explained this finding by saying that the IPSRT may have focused attention on the complexity and comprehensiveness of instructional planning for high-self-efficacious students while it makes low self-efficacious students feel more competent in writing an instructional plan.

2.1.2 Constructivist Planning Self-reflective Tool (CPSRT)

Planning a constructivist learning environment is an ill-structured task (Kitsantas, Baylor & Hu, 2001). Due to the need for more structured guidelines to support preservice teachers in the process of ID in the constructivist approach during self-directed practice, Kitsantas, Baylor, Hu (2001) developed the CPSRT. Its design was based on both social cognitive and constructivist theoretical perspectives (Kitsantas, Baylor & Hu, 2001). The designers of the tool stated that it facilitates self-monitoring, self-evaluation, and organization from a self-regulatory perspective (Zimmermann, 2000) and cognitive flexibility from a constructivist perspective (Jonassen, 1999), during instructional planning.

Kitsantas, Baylor and Hu (2001) underline the importance of cognitive flexibility as a metacognitive skill for constructivist lesson planning, based on the notion that constructivist approaches to instruction require designing a constructivist learning environment and specifying the roles of teacher and student during learning activities. They stated that preservice teachers need to practice cognitive flexibility to implement a constructivist instructional plan.

Kitsantas, Baylor and Hu (2001) described the features of the CPSRT. According to them, this tool does not describe exactly what has to be included in the instructional plan, but rather, what issues and elements of the plan the preservice teacher would consider. They describe this tool as a figurative menu of ideas regarding constructivist planning rather than a procedural recipe such as the IPSRT. Thus, the CPSRT was designed to help the creation of a learning support plan rather than a traditional plan. It has three parts for before, during and after instruction based on the notion that implementing and assessing a constructivist plan involves looking into these phases. The “before” phase includes an instructional purpose and a definition of learning activities – both required and desirable characteristics of these activities. The “during” phase involves information about the role of the students and the role of the instructor throughout the learning activities. The “after” phase is for the specification

of an assessment on the basis of the instructional purpose. Similar to the IPSRT, the CPSRT asks yes/no questions under each subheading, as seen in Appendix B. This yes/no format has two benefits: (1) the required characteristics of an effective lesson plan are covered with desirable characteristics (the questions only having “Yes” options) and (2) the instructional purpose of the plan is reflected in learning activities and assessment (Kitsantas, Baylor & Hu, 2001).

Kitsantas, Baylor and Hu (2001) tested the CPSRT with 84 students in an introductory course in educational technology. In order to assess the value of the tool, the students were asked what was helpful for them about using the tool for instructional planning. They coded the answers in terms of whether the student answer had value in terms of self-evaluation (yes/no), organization (yes/no), self-monitoring (yes/no), and cognitive flexibility (yes/no). For 38% of the respondents, it was useful for self-monitoring; for 38% of them, it was useful for self-evaluation; for 33%, it was useful for organization, and for 31% it was useful for cognitive flexibility. Though the percentages are not too high, Kitsantas, Baylor and Hu (2001) concluded that the results supported the intended purpose of the tool. They recommended instructors in STEs to use the CPSRT in order to guide preservice teachers in deciding essential and desirable elements when developing constructivist lesson plans.

2.1.3 Comparison of the IPSRT and CPSRT

Baylor and Kitsantas (2003) conducted an experimental study in order to investigate the interaction between type of cognitive tools (IPSRT and CPSRT) and nature of instructional problem (ill-structured and well-structured). Their sample was 58 preservice teachers. They presented preservice teachers with well-defined (like multiplication of fractions) and ill-defined (like improving the environment) instructional cases for developing instructional plans, by using either the IPSRT or the CPSRT. Their hypothesis was that the CPSRT is more beneficial for ill-structured problems and the IPSRT is more beneficial for well-structured problems. However, they found that the IPSRT was more helpful for ill-defined problem whereas the CPSRT was more helpful for the well-defined problem. They concluded that this mismatch in the nature of problems and that of type of cognitive tools results in a more desirable balance in improving preservice teachers’ instructional planning skills.

Baylor, Kitsantas and Hu (2003) compared the IPSRT and the CPSRT for their potential benefits in teacher education. They pointed out that both tools place a strong emphasis on assessment. Thus, these tools encourage preservice teachers to seriously

consider assessment. They made the following recommendations to the instructors using these tools for instructivist or constructivist approaches to instructional planning:

For the IPSRT:

1. The IPSRT is useful for preservice teachers who have limited experience in teaching because it provides them with systematic procedures to follow.
 - a. The IPSRT is well-structured and the organization in plan, provided by this tool, is consistent with the step-by-step nature of the traditional classroom instruction.
 - b. The IPSRT can serve as a checklist for inexperienced preservice teachers to make sure that they have included all the necessary elements of an instructional plan.
 - c. Besides reminding preservice teachers of these critical elements of instructional planning, it gives preservice teachers a recap of important characteristics of these elements with questions and checkboxes next to them.
 - d. University instructors in teacher education programs can provide the IPSRT as a job aid for in-class and take-home instructional planning practice.
2. The IPSRT enhances preservice teachers' intrinsic motivation for instructional planning.
 - a. Kitsantas and Baylor (2001) showed that the IPSRT improves student disposition towards instructional planning.
 - b. Kitsantas & Baylor (2001) indicated that the IPSRT serves as a reflective mechanism for high-efficacious students while it enhances motivation of low-efficacious students
3. The IPSRT promotes a greater metacognitive awareness of the complexity of instructional planning.
 - a. The IPSRT is beneficial for preservice teachers because it functions as a guide to monitor and evaluate their performance, and thereby improves their metacognitive awareness.
 - b. The IPSRT is designed to facilitate the use of self-regulatory strategies from both micro (developing each element of instructional plan) and macro (interrelating and interconnecting the elements in the instructional planning process) perspectives through prompting questions under each subheading. These prompt questions help preservice teachers examine the adequacy, clarity and accuracy of their instructional plan.

For the CPSRT:

1. The CPSRT provides exposure to constructivist methods of instruction for preservice teachers.

- a. The structure of this tool and the prompt questions in each phase represent characteristics of a constructivist plan.
2. The CPSRT promotes cognitive flexibility, a key component of the constructivist planning approach.
 - a. The prompt questions in the CPSRT do not demand definite answers, but offer a space for preservice teachers to expand their creativity and imagination within the framework of constructivist principles. The cognitive flexibility that is intended to be provided is consistent with less structured and activity-based characteristic of constructivist instruction.
3. The CPSRT may be better for well-structured instructional problems whereas the IPSRT may be better for ill-defined problems.
 - a. Based on the findings of Baylor and Kitsantas (2003), for ill-structured instructional scenarios, preservice teachers may need to adapt a more structured instructional approach (e.g. an instructivist approach through the use of IPSRT) whereas for well-structured instructional problems a more constructivist approach (CPSRT) seems to be more effective (Baylor, Kitsantas & Hu, 2003, p. 46-48).

Baylor and Kitsantas (2005) compared these tools for their efficacy in yielding instructional plans in an intended theoretical base and in enhancing instructional planning performance, metacognition, and motivation/attitudes. They conducted a quasi-experimental study in two sections of an “introduction to educational technology course” offered to preservice teachers in a public university in the southeast of the USA. Since the students were from different fields, they did not have the students develop lesson plans for instructional goals from a specific field. Rather, they choose a topic familiar to everyone. In a repeated-measures design, 42 preservice teachers received both the IPSRT and the CPSRT, in differing orders, and wrote two instructional plans on the same topic, one with each tool. Results validated the IPSRT for its efficacy in facilitating the development of instructivist plans and the CPSRT for its efficacy for constructivist plans. No significant differences were found between the IPSRT and the CPSRT in the participants' instructional planning performance, motivational/attitudinal impact, and perceived tool value, thus confirming that neither tool is more effective than the other. Differences were revealed in preservice teachers' perceptions of the metacognitive value of each tool, where the IPSRT was found to better supportive of self-monitoring whereas the CPSRT was better supportive of cognitive flexibility.

On the other hand, there are some critics of these tools. For instance, Brantley-Dias and Calandra (2007) assert that these two tools do not move novice teachers towards a

deeper level of practical and critical reflection. They do not put forth any evidence or empirical data to confirm this assertion, except for the call of Ertmer (2001) for more responsive ID models which was designed considering both the principles of systematic design and teachers' beliefs about teaching and learning.

Except for the number of studies mentioned so far, no further research related to the impact of the IPSRT and the CPSRT in STEs has been reached. Considering the large number of students and high proportion of students per instructor in STEs in Turkey, the researcher believes that there is a need to support preservice teachers by means of cognitive tools like the IPSRT and the CPSRT during their self-directed practice for learning instructional planning skills in the two traditions of theoretical paradigm. Therefore, she decided to investigate the contributions and challenges presented by using these tools in Turkey in terms of their impact on knowledge, skills and attitudes, regarding instructional planning.

2.1.4 Self-efficacy

Since the effect of the tools on preservice teachers' self-efficacy beliefs regarding instructional planning was among the investigated problems in the current study (see RQ 1.2), the term self-efficacy was explained in this section. According to Bandura (1986), self-efficacy refers to beliefs about one's capabilities to learn or perform actions at designated levels. Schunk (2000) emphasizes that self-efficacy is a belief about what one is capable of doing; it is not the same as knowing what to do. In addition, self-efficacy is primarily a domain-specific construct (Parajes, 1996, as cited in Schunk, 2000), thus, it refers to perceptions of specific capabilities (e.g. drawing inferences from text, solving fraction problems, planning lessons in traditional approach), not the same as self-concept, which is one's general self-perception that includes efficacy in different areas (Schunk, 2000). According to Schunk, self-efficacy is partly related to student abilities, but efficacy is not another name for ability. In fact, efficacy can influence learner's choice of activities. Students in low-efficacy for learning may avoid tasks, while high-efficacious students participate more eagerly, expend greater effort and persist longer to learn. However, Geen (1995) claims a shift in the meaning of self-efficacy concept. Bandura (1977, 1982) described the central theme of self-efficacy as belief in one's ability to exert control over one's surroundings. Yet, as the concept has been developed, it applies more generally to goal-related behavior, and has been used as a synonymous with the ability to carry out a desired behavior (Geen, 1995).

As to the effects of self-efficacy, Bandura (1986) states that self-efficacy beliefs influence the choices that individuals make, the effort that they expend, the perseverance

they apply, and the emotional reactions they experience. Geen (1995) states, “Whatever its origins, self-efficacy, once aroused, has a motivating effect on performance” (pp. 126). Schunk (2000) also states that self-efficacy is a central process in motivation and self-regulation. Geen (1995) claimed that it has a positive effect on motivation by giving examples from research in several areas such as achievement motivation (e.g., Cernove & Peake, 1986; Peake & Gernove, 1989; Schunk, 1984, as cited in Geen, 1995); carrier choices (Betz & Hackett, 1983, as cited in Geen, 1995); and health-related behavior (Bandura, 1977; Bandura, Reese & Adams, 1982; O’Leary, 1992, as cited in Geen, 1995).

After Pintrich and Schunk (1996) had examined three main research traditions on the expectancy construct (model of the expectancy-for-success construct, research on self-perceptions of competence and ability, self-efficacy theory), they deduce that self-efficacy beliefs have been shown to be important motivators of all types of achievement behavior as well as many other types of behavior. According to them, self-efficacy beliefs are very similar to the other expectancy constructs of task-specific self-concept and self-perceptions of competence because they all represent individuals’ judgment of their capabilities. They underline that self-efficacy theory that was put forth by Bandura (1982, 1986) assumes that self-efficacy perceptions are much more situation-specific than other self-expectancy beliefs. This assumption led researchers to measure self-efficacy in a much more situationally sensitive fashion at a much more microanalytic level. Based on this situational specificity, self-efficacy beliefs are assumed to be much more dynamic, fluctuating and changeable beliefs than more static and stable self-concept and self-competence beliefs. Self-efficacy beliefs might fluctuate based on individual variables (preparation to the course in that day, physical condition like sickness, fatigue, and affective mood), and external conditions (the nature of the tasks like length, difficulty and general classroom conditions). In contrast, the other two traditions of research would assume a more global perception of competence (e.g. math competence) and would not be concerned theoretically or empirically with such micro level instability of beliefs.

In conclusion, self-efficacy is a theory proposed by Bandura (1982, 1986). It could be seen as a construct which triggers one’s motivation to act, to resist against difficulties, to face with the challenges without avoiding them, and ultimately to reach achievement. This construct could be seen as situation-specific and changeable rather than global perception of competence and static nature.

2.1.5 Self-Regulation

Since the designers the cognitive tools IPSRT and CPSRT claim that they improve self-regulatory strategies of preservice teachers, the term self-regulation was briefly

described in this section. In the literature, there are many theoretical traditions defining self-regulation, but most of them articulate that it involves having a goal, employing goal directed actions, monitoring strategies and actions, and adjusting them to ensure success. Pintrich, Cross, Kozma and McKeachie (1986) pointed out that regardless of theoretical tradition, self-regulation fits well with the notion of learners' active participations and contributions to their learning. Schunk and Zimmerman (1994, 1998) also defined it as self-generated thoughts, feelings and actions that are systematically oriented to attainment of goals. The most critical component in self-regulation is learner conditions that enable learners to have choices of learner conditions, such as choosing to participate, method, time limits, outcome behavior, setting, partner, model or teacher (Schunk, 2000). Therefore, for any task, they can be able to choose whether to participate, what methods to use, how much time to spend, what level of proficiency to seek, where learning to occur, with whom they learn. In this regard, self-regulation can be defined as: it is self-regulatory learning processes to attain individual goals in varying learning environments.

Two core processes or strategies of self-regulation are self-monitoring and self-evaluation. Self-monitoring refers to observing, tracking and recording one's performance outcomes whereas self-evaluation refers to setting standards or goals and comparing them for self-judgment (Kitsantas & Baylor, 2001). According to Schunk (2000) self-valuation process includes both self-judgments of current performance by comparing it to intended goal and self-reactions to those judgments by considering performance as noteworthy, unacceptable, and so forth. In one respect, self-evaluation requires a kind of self-monitoring because learners must compare their present performances with the prior ones to understand their progresses. This contributes to their self-regulated learning efforts in such a way that having students self-monitor their performance and evaluate their capabilities or progress in learning process makes them more competent (Schunk, 2000). Furthermore, the literature indicates that students who self-monitor, and consequently self-evaluate their progress, display higher skill acquisition and more satisfaction, show more intrinsic interest in the task, and report higher self-efficacy perceptions than those who do not (Schunk, 1989; Zimmerman & Kitsantas, 1999).

2.2 Microteaching Method in Schools of Teacher Education

2.2.1 Description of Microteaching

2.2.1.1 Definition of Microteaching

Microteaching is an accepted method which is often used in STE programs for introducing preservice teachers to the complexities of teaching and connecting theory to practice. In the literature, microteaching is used as a broad term for mini courses, peer

teaching or simulated teaching, and other similar applications (Şen, 2007), which involve the practice of some teaching skills by preservice teachers.

There has been no fixed definition of microteaching (Sahu, 1985) that is agreed on. Nevertheless, this method has been defined in various ways by different researchers. According to Allen and Ryan (1969), microteaching is an idea with five essential statements:

Microteaching

- (1) is real teaching,
- (2) lessens the complexities of normal classroom teaching so that class size, scope of content and time are all reduced,
- (3) focuses on training for the accomplishment of specific tasks such as practicing instructional skills, demonstrating of teaching methods, practicing techniques of teaching, etc.,
- (4) allows for the increased control of practice through manipulating time, students, supervision, and many other factors.
- (5) greatly expands the feedback dimensions in teaching. Immediately after teaching a brief micro lesson, the trainee engages in a critique of his classroom performance (Allen & Ryan, 1969).

One decade later, Jones (1979) claimed that the accepted components of microteaching were as follow:

- The scaling down of the teaching encounter in terms of time (5 to 20 minutes) and the number of students (3 to 20),
- A teach-critique, reteach-critique cycle,
- An expanded feedback dimension in which the performance feedback is provided via audiotape, videotape, written transcriptions. Also, the comments on the performance are provided by the supervisor (from faculty), supervising teacher and peers,
- Modeling protocols of the desired behaviors via film, videotape, audiotape and live or written examples (Jones, 1979).

Allen (1980) defines microteaching as a technique for gaining and improving teaching skills in environments similar to the actual classroom under limited conditions in terms of number of pupils and time. McKnight (1980) describes microteaching, emphasizing that it could be used both in training of preservice and inservice teachers, as follows: Microteaching is a scaled down realistic classroom training context in which teachers, both experienced and inexperienced, may acquire new teaching skills and refine old ones. Sahu (1985) defines it implying that the video may not be used to give feedback, as follows:

a process of inculcating the desired change in the teaching behavior or the behavior potential as a result of focused practice and feedback provided to pupil-teachers at the scaled down realistic classroom situation. Factors such as class size, lesson time, feedback (with or without video) etc., can be manipulated such that the classroom situations facilitate the occurrence of the desired change in the teaching act. (p. 26-27).

Some definitions also emphasize the use of either actual pupils or peers for this method. For example, Capel, Leaks and Turner (1998) define microteaching as follows: “This is a short teaching episode where you teach peers or small groups of children - it can be useful to videotape your microteaching so that an analysis of different aspects of your teaching can be carried out” (p. 18).

In general, in the earlier definitions, microteaching was defined as a practice of particular teaching skills in a simplified simulation of classroom environment in terms of teaching time, number of pupils, nature of pupils (peers in the role of pupils vs. actual pupils), place of classroom (microteaching laboratory or a room in STEs), generally captured on video camera in order to improve teaching skills. Microteaching performers are given feedback on their teaching episodes by teachers, supervisors form faculty, and/or peers. If possible, based on the feedback, the student repeats his/her microteaching with a different group of pupils. The microteaching method is used in a wide range of fields of teacher education such as nurse education, mathematics education, physics education, technical teacher education, computer education, English as a Second Language education and science education.

2.2.1.2 Advantages and Disadvantages of Microteaching

Microteaching has gained attention of many STEs for its advantages over other teaching methods in teacher education. The advantages of microteaching were stated by Allen and Eve (1968) as follows:

- (1) The microteaching setting provides a safe practice environment not only for the development of competencies in teaching techniques and skills, but also for trying out new curriculum materials and instructional techniques.
- (2) It is an instrument which focuses on specific teaching skills, which has potential as a means of providing improvement in the teachers’ classroom performance.
- (3) It provides for the development of a wide variety of readily available instructional skills models.
- (4) It provides opportunities for new approaches to supervision. It provides a less threatening setting for supervision than traditional approaches to evaluation.
- (5) It could be used within a school system to test new instructional materials and techniques before their introduction to the classroom (Allen & Eve, 1968).

In a recent article, Subramaniam (2006) lists the benefits of microteaching as follow:

- (1) It exposes preservice teachers to the realities of teaching.
- (2) It introduces preservice teachers to their roles as teachers.
- (3) It helps them see the importance of planning, decision making, and implementation of instruction (Gess-Newsome & Lederman, 1990).
- (4) It enables them to develop and improve teaching skills (communication, public presentation, etc.) (Benton-Kupper, 2001; Wilkinson, 1996).
- (5) It inculcates preservice teachers with the value of reflective practice (Amobi, 2005; Benton-Kupper, 2001; Jerich, 1989, Wilkinson, 1996).
- (6) It can lead preservice teachers to become more willing to receive suggestions (Wilkinson, 1996) or it can encourage self-evaluation of self-perceptions and teaching behaviors (Brent & Thompson, 1996).
- (7) For teacher educators, its implementation into their courses enables both preservice teachers and themselves to engage in dialogue and discussion focused on making connections between theories of teaching and microteaching experiences (Brent & Thompson, 1996; Pringle, Dowson & Adams, 2003).

On the other hand, some indicated disadvantages of microteaching are indicated in the literature. One of the most important disadvantages is the fact that preservice teachers teach in an artificial environment (Akalm, 2002). Furthermore, difficulty in finding actual pupils for these artificial environments is another challenge (Trott, 1977). Teaching peers in a microteaching environment where no actual pupils exist makes the environment more artificial (Mally & Clift, 1980). In some cases, preservice teachers' performance is negatively affected by anxiety due to being recorded with a video camera. Preservice teachers also have to spend more effort and time for microteaching than they do for other methods used to learn teaching skills (Çakır, 2000), such as observing real classroom or reading how to teach.

Preparing the physical environment and providing the necessary equipment for microteaching are also important issues (Trott, 1977; Deniz, 1993). Preparing and maintaining a setting for microteaching requires a considerable budget. Besides equipment, the other problem is the need for qualified personnel to use that technical equipment professionally (Deniz, 1993). Another disadvantage is that it brings an extra burden to the instructor since the instructors spend much more time in method courses with microteaching than in courses without microteaching; they need to give feedback and to observe the revised microteachings (Trott, 1977).

2.2.2 Historical Development of Microteaching Models

2.2.2.1 Early microteaching models

When the history of microteaching was examined, it was seen that it is a teacher training technique developed by the school of education in Stanford University and first applied as combined training and diagnostic tool in the summer of 1963. Microteaching was used first as a device to train secondary school teachers in a few selected teaching skills. But it has grown to be used at all levels of education for various aims. Across the US, many microteaching clinics were opened for preservice and inservice training in universities and schools. Besides teacher training, it was used in medical education, counseling and guidance, and in the training of personnel in many sectors (Allen & Eve, 1968) in the 1960s.

Stanford University: Microteaching originated in an experimental teacher education program in the early 1960's in California at the Stanford University School of Education and the Center for Research and Development in Teaching. At Stanford University, the technical teaching skills were identified and refined as a part of a preservice teacher training program under the supervision of Professors Dwight Allen, Robert Bush and Frederick McDonald (Sahu, 1985). Allen (1967), one of the leaders of the first microteaching program, describes the concept of microteaching with details of the program they implemented at Stanford University up to 1967. Microteaching was developed for three main reasons: as preliminary experience and practice in teaching, as a research vehicle to explore training effects, and as an in-service training instrument for experienced teachers. The aim was to instruct preservice teachers in the use of certain technical skills of teaching and to give them the opportunity to practice these skills in the microteaching clinic under the intensive supervision of a trained supervisor. The teaching skills targeted for the summer school at Stanford University in 1965 were as follow:

- (1) Initiating behaviors
- (2) Presenting (communication)
- (3) Consolidation of lesson
- (4) Monitoring
- (5) Evaluation

That of 1966 was as follow:

- (1) Reinforcement
- (2) Varying the stimulus
- (3) Presentation skill (set induction)
- (4) Presentation skills (lecturing and use of audiovisual),
- (5) Illustrating and use of examples,
- (6) Presentation skill (closure),
- (7) Student-initiated questions (Allen, 1967).

The teaching skills that could be gained by preservice teachers were rearranged into five clusters by Allen, Ryan, Bush and Cooper (1969, as cited in Sahu, 1984) as response

repertoire, creating student involvement, questioning skills, increase in student participation, and presentation skills. These skills are given with sub-skills in Figure 2.1 below.

<p>A. <i>Response repertoire</i> Verbal responses Non-verbal responses Verbal and non-verbal responses</p> <p>B. <i>Creating student involvement</i> Set induction Stimulus variation Closure</p> <p>C. <i>Questioning skills</i> Fluency in asking questions Probing questions Higher-order questioning Divergent question</p>	<p>D. <i>Increase in student participation</i> Reinforcement Recognizing attending behavior Silence and non-verbal cues Cueing</p> <p>E. <i>Presentation skills</i> Completeness of communication Planned repetition The use of examples Lecturing</p>
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Figure 2.1 Specified Teaching Skills in Stanford University for Teaching through Microteaching

In Stanford University, the main focus of microteaching was instructing preservice teachers in the technical skills of teaching stated above, and providing facilities for the preservice teachers to practice these skills in the microteaching clinic under the closed supervision of a trained supervisor, who was a doctoral student in a related field of teacher education. The programs lasted around seven weeks. They were based on modeling the specific teaching skill (perceptual or symbolic models demonstrating how to implement a teaching skill) and the preservice teachers practicing it in front of authentic pupils. According to this model, the actual classroom environment was simplified in terms of teaching time, number of students and content, and simulated in a laboratory environment. The first four weeks consisted of five to ten minutes teaching to small number of real pupils (up to five). Each teaching session was planned to give the students practice in a specific teaching skill. To improve specific teaching skills, a cycle of “plan, teach, observe, re-plan, re-teach, re-observe” was developed for these four weeks. Real pupils are paid for their participation and they are trained on how to fill in feedback forms for assessing a particular skill of the preservice teacher who teaches. This teaching performance was generally videotaped and immediate feedback was given to the preservice teacher by supervisor, colleagues, pupils, and his/her own video. The preservice teacher re-plans the lesson and teaches another group of pupils, immediately (before 1966), 15 minutes later (in 1967) and

24 hours later (in 1968). The feedback for the re-teach was also given, as in the first cycle of microteaching.

In the last three weeks of the microteaching program, preservice teachers were allocated into groups of two to four, to design a 12-lesson unit and teach, as a team, the same group of authentic pupils. The lessons were about 20 minutes long. The teaching load was distributed equally among the group members. Since the lessons were long, no-reteach was done. The preservice teachers got feedback from their supervisor, pupils, and his/her own video. Politzer (1969) stated that the microteaching program held in summer prepared preservice teachers for part-time independent teaching that they would conduct in schools in the following fall semester under the supervision of both a supervising master teacher and a member from Stanford University.

Politzer (1969) calls attention to the two main elements that must be present in microteaching: (1) a trainee teaches a short micro lesson (5 to 10 minutes at most), and (2) the class must have a very specific or narrow focus (on a specific principle or teaching behavior). These features facilitate the transforming of theory into practice and lead to changes in teaching behavior. On the other hand, he states that some variations could be carried out in the microteaching programs in terms of the use of models, type of supervision, type of feedback and reinforcement, and type of focus used for microteaching. For modeling, he claims that preservice teacher may not be provided with a model (e.g. to show a videotaped or live performance of a teaching skill) before microteaching. For supervision, he states that, like modeling, supervision is not a must in the microteaching procedure. Reinforcement and feedback may be used in various combinations and to varying degrees. Finally, the focus of microteaching can be subject-matter oriented, or it can be teaching behavior oriented, or it can be a combination of both.

McDonald and Allen (1967) published the results of research regarding microteaching at Stanford University. They claimed that a feedback system in which the trainee views his/her own performance with supervision should always exist in any microteaching model. They also noted that the portable videotape recorder was the most significant contributor to experimental research in microteaching, because, it provided a type of feedback on a preservice teacher's behavior in a way that no other means could provide (McDonald & Allen, 1967).

Allen and Eve (1968) underline that microteaching is not a substitute for practice in teaching, for example problems of discipline and classroom control cannot be dealt with in microteaching settings, but it supplies some impressive alternatives such as close supervision, manageable objectives, continuous diagnostic feedback, unprecedented

opportunity for self-evaluation, immediate guidance in areas of demonstrated deficiency, and an opportunity to repeat a lesson conveniently as often as desirable.

Hampton Institute: Walters (1974) summarized the evaluation of the microteaching program implemented in the department of secondary education at Hampton Institute, which is different than the one in Stanford University and includes both microteaching and teaching practice at schools, in one term. In their program, preservice teachers were on a block program divided into three phases. In the first phase (pre-practicum), they spent the first six weeks of the semester in general and specific methods classes. In the second phase (practicum), they spent eight weeks in student teaching in public schools; and in the last phase (post-practicum), an evaluation of the program was done over one week at the end of the semester. The microteaching was done in the pre-practicum. After observing selected videotapes of previous classes' microteaching, students conducted two microteaching sessions, the first was 5-7 minutes long and the second was 10-15 minutes long. Both micro lessons were recorded and critiqued by the instructor, students and pupils. Walters reported the evaluation of this microteaching program as follows: video taping gave the chance to expand their knowledge of the subject matter; microteaching allowed students to get advice from their peers and college teachers; viewing the taped lessons allowed students to correct weaknesses prior to their public school experiences; the video tape file served as an enormous resource; as a result of breaking the complete teaching process into smaller elements, students were better able to understand the process; students viewed themselves with a more critical self appraisal; and students could ascertain whether they created conditions that allowed them to accomplish the objectives of their lesson plans. Walters (1974) noted that 94% of their students felt that microteaching was a very important part in their program.

University of Ulster: The University of (New) Ulster revised the model developed in Stanford University into a three stage-model of "plan", "teach", and "observe" (Brown, 1975), based on previous research findings. In other words, the "re-plan, re-teach, re-observe" part was removed. This was firstly due to the fact that research evidence showed that students were not satisfied with watching and assessing their peers on the same topic- a comparison of the assessment form results for the first and second teaching indicated that the same or worse performance was presented in the re-teach session (Brown, 1975). Secondly, there were not enough teachers to meet the necessities of that model, considering the increasing number of preservice teachers as well. Furthermore, rather than separate forms for each teaching skill, they defined 14 aspects of teaching to be evaluated.

A microteaching model based on a systems approach: Sahu (1985) developed a model of the microteaching process of teacher training based on a systems approach, shown

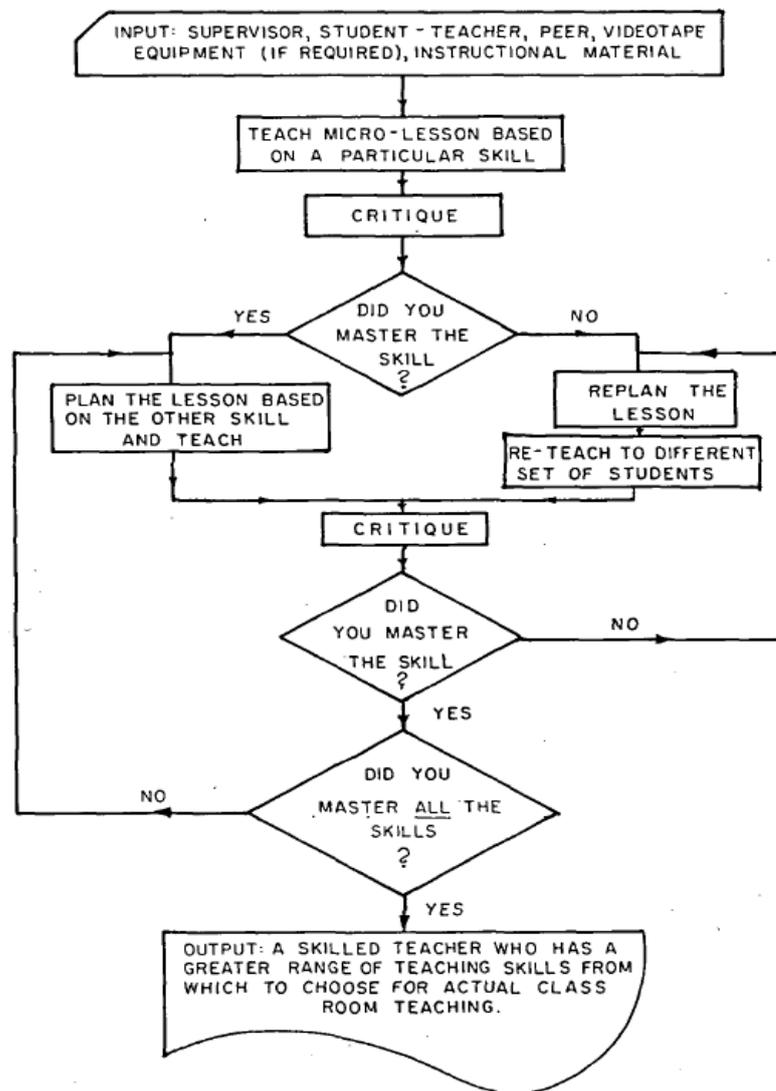


Figure 2.2 Model of the Microteaching Process of Teacher Training based on the Systems Approach, by Sahu (1985)

in Figure 2.2. In his model, built-in evaluation and feedback components are the key elements of the microteaching process, which yields (output) a skilled teacher with a greater range of skills (response repertoire, creating student involvement, questioning skills, increasing student participation, presentation skills) to use in actual classroom situations when required.

2.2.2.2 Review of Research on Early Microteaching Models

There are some studies reviewing the existing research on effectiveness of microteaching. Hargie (1977) reviewed research evidence relating to the effectiveness or ineffectiveness of microteaching, using four main criteria of effectiveness: actual teaching performance, pupil attitudes to their teacher, trainee teachers' attitudes to their course of training, and increases in pupil learning. After his review he concluded that, while microteaching is indeed an effective technique, it is also still an evolving one. Mayhew (1982) also claimed that research reveals the popularity of microteaching in teacher training programs because of its proven effectiveness for acquiring teaching skills. Mayhew (1982) stated that four main skill areas should be incorporated in a microteaching program:

- (1) Questioning skills, including fluency in asking probing, higher order and divergent questions,
- (2) Skills aimed at increasing individual student participation,
- (3) Creating student involvement through set induction (introduction to the lesson), stimulus variation, and closure, all of which help to provide a meaningful organization to the lesson, and
- (4) Lesson presentation skills and methodologies.

On the other hand, MacLeod (1987) criticized microteaching research, based on his review of research. He conducted a brief review of the development and use of microteaching. He reviewed research on modeling, practice, and feedback and studies of the overall outcomes of microteaching to set against a discussion of conceptual models underlying microteaching. He argues that, despite the many published investigations of microteaching, few definite conclusions can be drawn about its effectiveness. He attributes this result to a lack of theory-guided investigations, and suggests that a synthesis of cognitive models for microteaching with work on teachers' thought processes might provide a profitable approach to future work.

Cripwell and Geddes (1982) also argued against the basis of the most commonly practiced form of microteaching in teacher training, that is, the Stanford model developed in the 1960s. They stated that while the most general educational skills are focused on in the Stanford model, they are not necessarily the most important ones for language teachers.

According to them, what skills are practiced in microteaching depends more on the teacher trainer's view of what constitutes good teaching, and this is largely a subjective matter. It is also difficult to see how microteaching can give much help with the development of skills that are only observable in a real situation, particularly if trainees are teaching their peers. They point out that microteaching is suitable for preservice language teachers, particularly for improving organizational skills and the giving of instructions. They described how they have used microteaching to practice some of these skills in their study.

Pandey (2004) conducted a review of Indian research studies on teacher education. Microteaching in India became a popular research area and more than 50 studies were conducted on microteaching in the 1970s. The focus of earlier studies was on investigating the effectiveness of microteaching with the conventional student teaching practices and interaction analysis which, later on, shifted to developing and improving teaching skills. The majority of studies in this area in initial teacher education are conducted in an experimental setting, employing pre-test and post-test controlled group design. He deduced that probably this is the most researched area in the field of teacher education in India, where large numbers of studies have been conducted on various components of microteaching, such as the role of microteaching in the development of teaching skills, feedback and simulation.

Sahu (1984) conducted a review of research up to the early 1980s about microteaching, and indicated the areas to be studied in microteaching. He claimed that no research study exists that indicates the ideal class-size and micro lesson time in the practical classroom setting. Thus, he emphasized that there is a need for research investigations to standardize the process of microteaching for the purpose of teacher training. He states that up to date of his writing there exists no survey based on experimental study to answer the question of "What should be the standard class-size and the length of micro lesson appropriate in acquisition of certain technical teaching skills in microteaching setting?".

2.2.2.3 Paradigm Shift in the Use of Microteaching for Teaching and Research

Microteaching has been implemented, since its introduction to STE institutions, for nearly half a century. Yet, its meaning, implication, and purpose have evolved over time. Macleod (1984) identifies four distinct but sometimes overlapping models of microteaching:

- **Pragmatism:** This is an early phase that exploited a variety of concepts from psychology, such as modeling and reinforcement. The main emphasis is on pragmatic success. The task was to discover the ideal combination of the components of microteaching to enable the most effective acquisition of skills.

- Behavior modification: According to this microteaching model, teaching skills are viewed as sets of behaviors that can be acquired through the use of classical behavior modification techniques.
- Social Skills: Teaching skills are viewed as similar to perceptual or motor skills.
- The cognitive model: This emphasizes participants' thinking about their teaching. The focus is not on short term changes in teaching behavior, but rather a longer-term perspective. In this model, teaching skills are reconceptualized as ways of thinking rather than ways of behaving (p. 5975, as cited in Wilson & I'Anson, 2006).

Long (1994) stated that approaches in microteaching traditionally have been focused upon the teaching of specific skills like questioning skills and presentation skills, etc. in small-group situations. She describes the application of a form of microteaching to the acquisition of teaching strategies, which has a much broader focus, based largely on the work of Joyce & Weil (1986, as cited in Long, 1994).

An impressive article describing change in microteaching applications over time is from Francis (1997). She describes how her perceptions of microteaching have changed over time as a teacher trainer. She states that, in the 1980s, she used conventional microteaching. With this type of microteaching, particular skills were developed through lecturer input, modeling and demonstration, peer practice, feedback and scaled-down teaching episodes recorded on video and analyzed with peers. She stated that she used to assume that the skills could be applied in all contexts and could be mastered by all students if given sufficient time for practice. Nevertheless, she was convinced that analyzing one's own teaching was more powerful in supporting reconstructed action than examining commercially produced models of unknown classrooms which seem ideal or staged.

In the 1990s, she began to explore how microteaching could be used to foster a collaborative approach and reflective practice. The analysis of teaching became central in microteaching in a broader framework of a teacher's own belief system about education and society. She promoted collaboration in microteaching by making students choose partners and work together to develop teaching plans, identify aspects of particular broad teaching skills personal concern and develop foci for observation. After video recording a teaching episode, these peers collaborated in interpreting the data collected. The notion was that construction of personal knowledge -contrary to the transmission of technical knowledge- involves testing personal ideas, questioning assumptions and building and rebuilding conceptual frameworks with others through dialogue and critical debate. She realized that peers' habit of evaluating and advising about what ought to be done are deeply embedded in their ways of knowing. She then reconceptualized microteaching. She made her students

spend time exploring their personal theory through metaphor and critical incident analysis prior to microteaching. Her students studied teaching as a complex multifaceted activity which is given meaning in different ways by different teachers and learners. Thereby, in spite of different degrees of commitment, they came to microteaching with some notion of the problematic nature of normalizing classroom practices (i.e. equalizing best teaching with applying the same skill for all classes).

Francis (1997) draws some conclusions from her journey of using microteaching over time. She stated that preservice teachers enter schools of education with some beliefs regarding teaching and learning, and teacher educators admit this. According to her, teacher educators should reconceptualize the concept of teaching by considering this fact. Preservice teachers have the questions of “what works”, “how will I do?”. And the reason for focusing on such questions is their continuing anxieties (Francis, 1997). Teacher educators should work on these anxieties. According to her, the tensions between theorizing and skills necessary for teaching are substantial and unavoidable. If teacher educators work only at a theoretical/critical level, then they face alienating students who have real concerns about survival in classroom where questions of management prevail. If the teacher educators move more to a technical approach in which skills are predetermined and seen to be universal, they commit teachers with very different personal theories to a single ‘best way’ which cannot work in the multifaceted, complex context of teaching. She proposed that microteaching should not focus largely on a skill universally applied for a normalized class. Instead, she suggested her reconstructed microteaching concept that is described above. This concept of microteaching not only enables the development of the skill-based tools link to preservice teachers’ concerns and needs, but also accepts the teachers as active agents in constructing and confronting their own professional ways of knowing.

In the 2000s, microteaching has evolved from its traditional version to a number of modified versions within teacher education. Subramaniam (2006) points out some similarities and differences between the traditional and revised microteaching models, as seen in Figure 2.3. While the aim of traditional microteaching models is mastering a specific teaching skill, the recent models aims to provide a complete teaching experience in a holistic manner. The microteaching episodes are still conducted on-campus, but in recent models video recording may not be done in recent models. This may be because the primary feedback channel is no more videotape playback, but oral and/or written feedback forms. In traditional models, evaluation is done by clinical supervisors and/or course instructors, but in recent models, rather than clinical supervisors, the evaluation is done by course instructors and peers. While a microteaching episode in traditional models is followed by a reteach

cycle guided by clinical supervisors, in recent models it is followed by the microteaching performers' review of the teaching experience with reference to current educational theories.

	<i>Traditional Version</i>	<i>Modified Version</i>
Aim	Master specific teaching skills	Provide a complete teaching experience
Format	A short on-campus lesson that is videotaped	A short on-campus lesson that may or may not be videotaped
Evaluation	Carried out by clinical supervisors and/or course instructors	Carried out by course instructors and peer evaluators
Feedback	Primarily derived from videotape playback	Primarily derived from oral, and/or written, feedback forms
Outcomes	A reteach cycle guided by clinical supervisors	A review of the teaching experience with theory

Figure 2.3 Comparison of Traditional and Modified Versions of Microteaching Models by Subramaniam (2006)

2.2.2.4 Current Trend: Microteaching as a Means for a Reflective Practitioner and Enabling Schön's Reflective Practice

Regarding the aim of microteaching models in the 2000s, more specifically, it is seen that microteaching has been utilized as a means of becoming a reflective practitioner or enhancing reflection in STE programs (e.g. I'Anson, Rodrigues and Wilson, 2003, Şanal Erginel 2006; Sarvan Gencer, 2008, Köksal & Özcan, 2008) and as a valuable transitional space that is located between the university and the school-based practice, which bears the main features of Schön's nature of the practicum (Wilson & I'Anson, 2006).

I'Anson, Rodrigues and Wilson (2003) described how they utilize microteaching as a means for becoming reflective practitioners in their STE program. They were concerned with how reflection helps students negotiate between the university and school contexts which have different values and aims. They see microteaching as one of the performative spaces that mediate between these contexts. Besides, they used microteaching in their institution in order to make their students realize their own values, assumptions and attitudes about teaching and learning which they had previously internalized. According to them, these values, assumptions, attitudes about teaching are enacted within the microteaching situation.

In their model, students form groups in pairs and they design, deliver, and evaluate six or seven 30-minute lesson plans. Then, they teach 7-8 first-year pupils from three secondary schools in 6-7 weeks. The students teach a new group each time. While one student teaches the group, the other records the lesson on video. After the lesson, the student

reviews the video and writes an evaluation to reflect on the progress in microteaching performance, as an assignment. Dialogue between partners is encouraged during evaluation. Lesson plan, tape and evaluation are passed to a tutor or teacher fellow. Then a tutor or teacher fellow views the lesson and provides feedback on the performance. Through discussing their practice with a number of others (peers, tutor and teacher fellow), they can look from multiple viewpoints. The process of recording, subsequent viewing and dialogue with others provides student-teachers with an awareness of the values, assumptions and attitudes that shape their practice (I'Anson, Rodrigues & Wilson 2003).

I'Anson, Rodrigues and Wilson (2003) mention that becoming a reflective practitioner is not a particular outcome; rather, it is an ongoing process as in a spectrum consisting of three negotiating thresholds: (1) pre-critical (largely technical in nature to manage time, resources and pupils), (2) internalized (a more mentally rehearsed operation and outcome approach, still relying on the previous experience), and (3) hypothetical reflection (which occurs when the reflective practitioner operates on hypothetical issues, showing his/her capacity to reflect diverse problematic cases which have not yet been faced in practice). These thresholds are not hierarchical, but their way of illustration is that reflection can take many forms. At the end of a series of microteaching experiences, preservice teachers get an insight into what and how to teach, based on their experience of schooling. I'Anson, Rodrigues and Wilson (2003) interviewed the students and analyzed the students' reflection assignments based on their microteachings in order to detect at which threshold the preservice teachers were, and to evaluate how students perceive their microteaching model. They concluded that most preservice teachers could not anticipate things that were not present and therefore they did not have a full repertoire of alternatives for hypothetical reflection. Students appeared to value the variety of perspectives since this variety encouraged them to reflect on their practice. The opportunity for dialogue with tutors, teacher fellows and peers encouraged student-teacher to participate in and negotiate the different embedded dialogues prior to their joining a community of practice. The researchers advised that opportunities for multiple views in other situations may influence the future development of their repertoires. Many factors, such as context and carrier experience, may promote or inhibit the negotiation of thresholds. They also claimed that assignments, peer, teacher fellow and tutor feedback and personal review can help the individual triangulate their intuitive and analytical thinking about their practice and may ultimately promote the process of reflection. I'Anson, Rodrigues and Wilson (2003) inferred that microteaching provides preservice teachers with an opportunity to get advice from other students, teachers, teacher fellows, and eventually themselves, through a critical process of personal as well as social reconstruction.

Wilson and I'Anson (2006) identified key aspects of Schön's characterization of the practicum and described an alternative approach to initial teacher education institutions that uses microteaching as a practicum context. They introduced a model of practicum which involves both the Schön's characterization of reflective practice and his understanding of the practicum. Reduction in complexity, and location of practicum in between contexts (between the context where the practitioner is trained, the university, and the context where the practitioner will work in the real world, the school) are the two important features of Schön's reflective practice (Wilson & I'Anson, 2006). Besides, based on the Schön's (1987) notion that demonstrating, advising, questioning and criticizing are the main activities of coaches, Wilson and I'Anson (2006) tried to establish a dialogical relationship between the tutor at university and the preservice teacher.

They developed their proposed model in a UK university which uses microteaching as a preparation for school practice. It lasts two semesters. The activities in the first semester are the same as those described by I'Anson et al. (2003) as mentioned before. However, in the second semester, each pair of students teaches the same group of students 6-7 times, considering the relation to the previous and the succeeding lessons. Their model has three core aspects: (1) a simplified environment for the development of practice, (2) a context which promotes the development of professional identity through dialogue with peers, teacher fellow and tutor, and attention to agency, (3) the conditions necessary for critical reflectiveness that is provided in a context which values critique.

After they observed poor quality of the reflections of novice teachers, and the teacher educators' comment that they cannot change preservice teachers' prejudices about teaching and learning, Wilson and I'Anson (2006) conducted a qualitative study to evaluate the effects of their new model of microteaching, which they implemented. The participants were six novice teachers, from a range of subject areas, who had graduated from the program two years before. The findings showed that microteaching helped them gain an easier transition to the real classroom life, although it was a difficult and extremely unpleasant experience for the participants. Though these novice teachers found differences between microteaching and the real life world of the classroom, they valued the microteaching experience and found it beneficial as preparation for teaching. Reduced complexity in the microteaching environment was found to develop preservice teachers' confidence in teaching. The limited duration of the lesson was also valued by the participants. The videotaping of microteaching and its evaluation by peers, teacher fellow, and tutor and provided the participants with an understanding of different viewpoints of the same microteaching performance. The participants also mentioned that the written self-evaluation assignments were helpful in reconsidering their teaching and the connection between theory

and practice. Wilson and I'Anson (2006) concluded that this practicum model could lead to a productive reframing of both theory and practice.

The use of videotaped lessons in the process of reflection is also a well-accepted method of learning about teaching. Huang's (2001) study is an investigation of preservice teachers' reflective practice through their self-analysis of video-taped microteaching performances for the course of teaching techniques. Forty-five secondary teacher education program students were required to keep journals to reflect on their teaching after presenting microteaching lessons in a way of including strengths, weaknesses, and improvements. It was generally valued by the preservice teachers as offering an opportunity to review the lesson and discuss students' reaction and feedback. Huang (2001) points to the need for a concrete conceptual guideline for directing reflection, because reflection on teaching practice requires broader issues of purposes, goals, values and constraints. In fact, the literature suggests that students benefit more from guided and structured reflection in developing self-reflective critical thinking (Freese, 1999; Huang, 2001; Langer, 2002; Rodriguez, Sjoström & Alvarez, 1998).

In her qualitative study, Bağcıoğlu (1999) investigated the effectiveness of supervisor's feedback on lesson plans before practice teaching. The followings were studied in this work: supervisor, mentor, and peer feedback; journal writing, self-evaluation reports of their teaching, and seminars on the preservice teachers' reflective thinking. The findings indicated that, amongst these, feedback from supervisors, peer discussions, and self-evaluation had important roles in the development of preservice teachers' reflective thinking abilities and in the improving their teaching skills.

The studies of Şanal Erginel (2006), Sarvan Gencer (2008) and Köksal and Demirel (2008) are the most recent ones to investigate the contributions of various techniques to improve preservice teachers' reflective thinking and to their reflective practice in "teaching practice" courses from Turkey. It is seen that microteaching was used as a means to improve reflective thinking in all of these studies, which are explained below.

Şanal Erginel (2006) conducted a case study focusing on the process of the promotion of reflective thinking in teacher education. Her study considers preservice teachers' perceptions on becoming reflective and their focus of attention throughout their practicum. The participants were 30 preservice teachers in a teacher education program of English language. She analyzed preservice teachers' improvement in reflection by focusing on various methods of promotion for reflectivity, such as weekly guided journal entries, tape-recorded reflective interactions and interviews, assignments on videotaped microteaching, questionnaires and observations. The findings indicated that the preservice teachers perceived that collaboration had an important role in the promotion of reflection.

The reflective process enhanced their self-awareness of their teaching, which contributed to the development of their professional identity as teachers. It was found that the preservice teachers focused primarily on instructional processes, motivation, and classroom management while reflecting on their experiences, giving emphasis to effective teaching so that desired objectives are achieved. However, towards the end of the course, preservice teachers incorporated their theoretical background and considered contextual factors in reflecting on their experiences, while these factors were limited to learners' ages, language levels, and learning styles. Despite the fact that journals attracted reservations from some preservice teachers, the findings indicated that they distinctively promoted reflectivity throughout the process.

Sarvan Gencer (2008) designed a study to explore preservice biology teachers' reflective thinking content and levels of reflection by examining the use of a reflective framework integrated into a one-semester teaching practice course. Her study focused on the development of reflective thinking skills of preservice teachers and their metaphorical images about the learning and teaching process. She collected data through both qualitative and quantitative methods. The written documents and audio taped debriefings which were taken during the activities of reflective autobiography and journal writing, metaphor using, peer coaching, microteaching, and problem discussion, along with the summative interview were the main qualitative data sources. The written and transcribed data collected through these sources were then utilized through three selected case studies, in order to reach a deep understanding on their reflective thinking skills and content. The quantitative data were collected through the instruments of Reflective Thinking, to evaluate the development of the preservice biology teachers' reflectivity and Metaphorical Images to explore their beliefs about learning and teaching process. The results showed that the reflective activities offered opportunities to preservice biology teachers to reflect on their experiences and strive for a conscious awareness of their professional development through experience, collaboration, guidance, and modeling. All of the participants were able to reflect mostly at the technical level, followed by contextual and dialectical levels of reflective thinking about teacher characteristics, instructional processes, classroom management, pupils, and teaching profession. Results of the reflective thinking instrument indicated that all participants individually perceived a developmental reflective thinking skill.

Köksal and Demirel (2008) conducted a case study to illustrate the effects of the development of preservice teachers' reflective thinking skills on the planning, implementation and evaluation process of their teaching. Their sample comprised 12 senior students in the field of elementary teaching. Data collection tools were observation notes, camera recordings of microteaching, interview forms, self-evaluation forms, participant

journals and lesson plans. Based on their findings, they concluded that reflective thinking training made positive contributions to preservice teachers' planning, implementation and evaluation process of teaching.

According to the initial findings of a review of research from 1995 to 2004 in initial teacher education in Australia (Murray, Nuttall & Mitchell, 2008), the two important changes in teacher education research, when compared to the review of studies conducted in the 1980s in Australia, were the rise of qualitative research and the shift of focus from skill development, shown for instance by research on microteaching interventions, to a focus on preservice teachers' thinking, attitudes and beliefs.

Subramaniam (2006) developed a microteaching self-review essay format including the following criteria: physical appearance, mannerisms and speech. It also asks three teaching strengths, three teaching weaknesses and suggestions for improvement. Her self-review essay and Vidmar's (2006) questions for collaborative peer coaching were adapted in designing the microteaching self-reflection assignment used in the current study. The proposed criteria in these two studies were included in the self-reflection assignment used in the present study.

In brief, microteaching was often used as a mean to facilitate reflection in STE programs, besides many other methods such as writing reflective journals, peer discussion, teaching metaphors, and critical incident analysis and etc. By means of microteaching, preservice teachers can engage in reflection when planning an applicable plan, performing microteaching, observing and assessing their peers' microteaching, making self-evaluation, writing self-evaluations or self-reviews, and discussing the microteaching episodes.

In the 2000s, it is seen that microteaching has started to be used more in school contexts in many teacher education programs. As Amobi (2005) stated, "the use of microteaching has expanded from its original focus of helping preservice teachers to master discrete teaching skills, to giving them the complete teaching experience and orienting them to teach in the natural classroom during field experience" (pp. 115-116). Regardless of the purpose of microteaching, Amobi stated that the two essential components of microteaching are recording microteaching sessions on video, and feedback.

2.2.3 Tutoring for improving Instructional Planning and Teaching Skills

The Learning Assistance Center (n.d.) defines tutoring is an age-old practice. The dictionary definition describes a tutor as a person who gives individual, or in some cases small group, instruction. The purpose of tutoring is to help students help themselves, or to assist or guide them to the point at which they become an independent learner, and thus no longer need a tutor.

A successful tutor has a content knowledge as well as empathy, honesty and humor. Besides he/she should demonstrate a caring attitude (The Learning Assistance Center, n.d.). Caring consists of being organized for the tutoring session, being punctual, establishing a learning relationship with the student, developing unique teaching strategies, and becoming familiar with the learning process. Ultimately, tutoring is sharing oneself with another student in a way that makes a difference in both the tutor and student's lives.

According to The Learning Assistance Center (n.d.), there are many benefits to the students who receive tutoring:

- Offers more individualized, systematic, structured learning experience.
- Provides greater congruence between teacher and learner, closer role model.
- Improves academic performance and personal growth.
- Improves attitude toward subject area.
- Generates stronger effects than other individualized teaching strategies.
- Motivates self-paced and self-directed learning.
- Provides intensive practice for students who need it.
- Improves self esteem (The Learning Assistance Center, n.d.).

Besides face-to-face tutoring, the advancement of computer mediated communication (CMC), online tutoring has also become widespread and a significant opportunity for tutoring. There are three roles for the online tutor defined by Shepherd (2000): (1) The tutor as subject expert: One of the roles for the tutor is to supplement self-study materials - filling in any gaps, clarifying any misunderstandings and pointing learners to sources of information. (2) The tutor as coach: The second main role is to act as coach, mentor or counselor. These terms may have unique definitions, but they also have a lot in common. The coach is responsible for helping the learner to achieve their learning goals by challenging, encouraging and providing constructive feedback. (3) The tutor as assessor: In many cases the tutor also has to act as assessor, checking to ensure that learners have achieved the learning objectives. Shepherd (2000) emphasizes that whether the tutor is acting the role of subject expert, coach or assessor, they will be operating in an environment that has its own unique advantages and constraints. The most common used online tools are e-mail, discussion groups and text chat.

Preservice teachers' role expectations for supervisors of microteaching have been investigated in the Illinois Teaching Techniques Laboratory by Johnson and Knaupp (1970). They administered a questionnaire to intact classrooms, with necessary instructions. The findings showed that preservice teachers expect the following from their microteaching supervisor:

- teach me various teaching techniques
- show me how to plan a lesson
- give me specific instructions on how to teach

- provide me with a manual that gives examples of various techniques and procedures for teaching
- prepare my first lesson with me and tell me how to teach it
- help me achieve a sense of security in teaching by telling me what techniques to use
- tell me what is wrong with my teaching
- make videotapes of good teaching available so that I may learn proper techniques,
- offer instruction in preparing evaluative materials
- demonstrate evaluation techniques (Johnson and Knaupp, 1970)

This list indicates that preservice teachers expect supervisors to teach them. However, students also indicated strong desires to have “elbow room to learn at my own pace” and to “have the opportunity to develop my own style of teaching”.

Providing formative feedback to student performance is crucial in student development in individualized instruction like tutoring. Juwah et al (2004) identifies seven principles of good feedback:

1. Facilitates the development of self-assessment (reflection) in learning.
2. Encourages teacher and peer dialogue around learning.
3. Helps clarify what good performance is (goals, criteria, expected standards).
4. Provides opportunities to close the gap between current and desired performance.
5. Delivers high quality information to students about their learning.
6. Encourages positive motivational beliefs and self-esteem.
7. Provides information to teachers that can be used to help shape the teaching (p.6).

Similar to tutoring, some other methods are used to provide individualized instruction like cognitive apprenticeship. Liu (2005) states that some characteristics of existing university-based teacher education programs may prevent preservice teachers’ learning of instructional planning. Thus, he designed a seven-week web-based course and conducted a field experiment in order to test the effectiveness of the cognitive apprenticeship model for instructional planning and the teaching skills of preservice teachers. That study adopts cognitive apprenticeship as a theoretical foundation for a web-based learning model that integrates expert teachers and Internet technologies (web-based multimedia, performance support system, and electronic conferencing). The results revealed that the course based on the web-based cognitive apprenticeship model improved preservice teachers’ performance and attitudes on instructional planning more effectively than the traditional training course.

The cognitive apprenticeship model is also used in educational technology courses for preservice teachers in the fields of primary or secondary education, to teach how to integrate technology into their instructional plans (Clark, 2002) and how to develop instructional materials with technology (Dickey, 2007). For instance, Clark (2002) used

Collins, Brown and Newman's (1989, as cited in Clark, 2002) cognitive apprenticeship model based on the Integrating Technology for Inquiry Model (Morisson & Lowter, 2002, as cited in Clark, 2002) in an instructional technology course. She investigated whether this cognitive apprenticeship model would positively affect preservice teachers' beliefs/concerns about using computers as a tool to enhance student learning, perceived ability to use and integrate technology into the curriculum in an appropriate manner and ability to effectively design lessons that integrate technology into the elementary school curriculum. Her sample was 76 preservice elementary teachers. The experimental group took an authentic cognitive apprenticeship while the control group took traditional instruction. The results indicated that the cognitive apprenticeship model positively affected attitudes and abilities regarding integrating technology into instruction.

2.2.4 Nature of Pupils in Microteaching

The question of whether teaching to peers or real students would be more effective in the practice parts of methods courses has been a significant question investigated in the literature. Microteaching models involving real pupils were called as microteaching, and those involving peers acting as pupils were given various names, like simulation (Pandey, 2004), simulated teaching (Cooper & Allen, 1970), peer teaching (Metcalf, Hammer & Kahlich, 1996) and micro-peer teaching (Farris, 1991), although they have also been called microteaching by some researchers (Bell, 2007; Subramaniam, 2006).

2.2.4.1 Microteaching to Authentic Pupils

Cotrell and Doty (1971) designed an experimental study to test two variations in the microteaching techniques -feedback and type of student taught- in an education methods course at the Ohio State University. Twenty-four preservice and inservice teachers participated in the study, each conducting two 7-minute microteaching for peers or to high school students, with and without video feedback. The collected data included ratings on the critique forms completed by the teacher educator and questionnaires completed by the teachers. The statistical tests revealed no significant differences between the two groups. However, responses on the questionnaire indicated that the teachers who had received video feedback and had taught high school students were more positive in attitude towards teaching. As a result of this study, Cotrell and Doty (1971) recommended that the teaching practice sessions of the methods courses could involve teaching to high school students and video feedback. They also stressed that teachers participating in such programs be given intensive training about the microteaching method.

Stanton (1978) investigated the effect of a microteaching course on preservice teachers' self-concept, i.e. the idea or mental image of themselves and their strengths and

weaknesses. The sample of this study was 32 preservice teachers, who took part in a microteaching course. Each student taught two, 10-minute micro lessons to groups of five secondary school pupils, their performance being observed by their peers and recorded on videotape. After the micro lesson had been completed, the student teacher viewed his/her taped performance and made the decision whether or not to let it to be used in a discussion with his colleagues and the pupils he had taught. All participants let this done. Preservice teachers completed the Tennessee Self-Concept Scale before and after their microteaching course, their scores being compared with other preservice teachers who had no such experience. The results showed that a self-concept change in a positive direction was facilitated by the microteaching experience.

Skuja (1990) argues that doing microteaching in front of peers acting as pupils is not effective since such a teaching environment is manifestly artificial and provides few of the challenges of the real-world classroom. He, therefore, used a "Pupil Experience" approach as an alternative to microteaching. In this approach, preservice teachers visit schools weekly to tutor small groups of remedial English language pupils. He stated that such direct pupil contact would provide hands-on experience with the realities of the classroom, while not burdening the preservice teachers with the challenges of full class management. The preservice teachers participated in "Pupil Experience" during the first term of coursework. They went to three schools on Saturday mornings and worked in fours with groups of 6 – 8 remedial pupils, supervised by a lecturer. The students followed a structured program based on a Workbook, and functioned alternately in a teaching and observing role. Skuja encouraged development of reflection upon practice by regular post-conferencing, journal keeping, a case study assignment and a Pupil Experience Seminar held at the end of the remedial activities for pupils. He evaluated the effectiveness of Pupil Experience through questionnaires, interviews, and transcriptions of seminar discussions. The analysis of data yielded positive results. All the preservice teachers who participated the study preferred "Pupil Experience" to microteaching (with peers acting as pupils, or simulated teaching), since even in small group situations they become actively aware of pupil responses and learning needs.

Based on the hypothesis that teaching to a small group of pupils and discussing on the videoed class with supervisors would be better done before teaching the same course to the whole class, Akalın (2005) conducted an experimental study for a semester in high schools. Her study aims to compare traditional teaching experience, or teaching all the class (macro teaching) with use of microteaching, which is used as a way of preparing student-teachers for macro teaching. Her sample was 52 fourth-year students of English Language Teaching who were taking a teaching practice course. At the beginning of the study, she

divided the student teachers into control (21 students) and experimental groups (31 students). Both groups gave macro teaching lessons, i.e. teaching all the class, before and after the intervention; a supervisor assessed them through an evaluation form. The intervention for the experimental group was in the form of conducting microteaching with a small number of pupils. The microteaching performance was videotaped, and peer-evaluated, and they discussed their performance with the supervisor by observing the video. The students in the control group tried to teach in a traditional way, doing macro teaching all the time. They were just observed, but no videotaping was applied. Akalın compared the groups' observation forms for macro teaching performances before and after the intervention. She also applied a questionnaire to the experimental group to find their views about the microteaching sessions.

The results of the evaluation forms showed that microteaching made significant improvements in their self-confidence in teaching, and provided interesting examples, the opportunity to ask questions, to use the target language in class, to practice class management, effective material use, accurate language use, and to pay attention to the teacher's physical appearance. On the other hand, the data shows that there are no significant differences between microteaching and traditional teaching (macro teaching) when the following are considered: summarizing the previous lesson, preferring the same words, motivation of the students, encouragement of more active participation, using the board properly, teacher's eye contact, effective use of gestures and facial expressions, creation of enthusiasm among the students, fluent language use, attention to the group work, and the use of reinforcement. Finally, according to the data, microteaching is not effective on the good start and repetition of the topic. The questionnaire results revealed that microteaching leads to significant improvements on the assessment of instructional strengths and weaknesses, the development of preservice teachers' public presentation/communication skills, peer evaluation of the lessons, planning lessons, and gaining ideas and strategies for future teaching situations. Overall, based on the results, she claimed that microteaching is more effective than traditional teaching (i.e. macro teaching), in teaching English as a foreign language in high schools, if the necessary conditions are provided (Akalın, 2005).

2.2.4.2 Microteaching to peers in the role of students

Cooper and Allen (1970) make a distinction between microteaching and simulated teaching (the same process as microteaching but involving a peer group as pupils rather than real pupils). They realized that although they have prejudice against using peers as students, 111 institutions in the US did use peers instead of actual pupils (Ward, 1969, as cited in Cooper and Allen, 1970). They explained this situation as due to the difficulty encountered

in obtaining actual pupils due to full-time education at schools, the distance between schools and STEs, and lack of financial resources to pay pupils for attending a microteaching program in the summer school. They claimed that using peers as students, at least in preservice teacher training programs for secondary education, is much more common than the use of actual pupils in the microteaching process.

Malone and Strawitz (1985) designed an experiment to determine whether additional field experience in a school setting or a microteaching is more beneficial for preservice elementary teachers. The subjects already had a great deal of early field experience, but no previous microteaching experience. The researchers randomly divided the subjects enrolled in a science teaching methods course into two sections: a control group (only attended field experience in schools) and an experimental group (who took microteaching). The experimental group received only microteaching as a component of their science methods course. However, they continued to receive the field experience required their math and social studies methods courses. The microteaching experience required their teaching three activity-oriented elementary science lessons to their peers. During the experience, they were given feedback by their peers on a rating form. They were also required to view themselves on a video recording of their lessons and to rate their own lesson and teaching behaviors. Besides, they had to participate in and rate the lessons of their peers in the experimental group. On the other hand, the control group taught six elementary science lessons at public schools instead of microteaching. No systematic feedback was given to the control group. Both groups could occasionally receive informal feedback from teaching assistants. The treatment lasted a full semester. At the end of the intervention, a final videotaped science lesson was taught to their peers by both the experimental and the control groups. These taped lessons were rated by trained observers for teaching behaviors. Additionally, both groups' science teaching process skills, attitudes towards science and science teaching and concerns regarding science teaching were measured using various measurements in the form of surveys.

The mean differences of the two groups for the instruments were analyzed using t-test. Their results showed that the microteaching group scored significantly better on science teaching skills, attitudes towards science, and science process skills. Malone and Strawitz (1985) concluded that integrating microteaching with field experience in undergraduate science teaching methods courses is superior in developing these skills and attitudes than field experience alone. It was noteworthy that the students in the microteaching group were significantly better in communication skills and material use than students in the field teaching group. On the other hand, there were no significant differences between groups on measures of attitudes towards teaching science or concerns about teaching science. The

researchers inferred from this result that attitudes towards teaching science and concerns about teaching are at least not negatively affected when the amount of field experience is decreased to implement microteaching.

Metcalf, Hammer and Kahlich (1996) conducted a quasi-experimental study to compare the effects of a sequence of on-campus laboratory experiences with an intensive early field experience in the preparation of preservice secondary teachers. Specifically, their study examined the effects of the experiences on teachers' ability to reflect on and explain complex pedagogical episodes, and to plan and implement organized and meaningful lessons. Laboratory teachers in this study engaged in a guided series of peer teaching, simulation, role playing, and problem solving. The field-based teachers engaged in similarly guided observational, tutorial, and whole class teaching activities in middle school classrooms, and completed detailed daily logs. The results suggested that the laboratory teachers, but not the field experience teachers, improved their ability to reflect on teaching and to facilitate desirable instruction. The experiences were equally effective in developing teachers' abilities to plan and implement organized lessons.

Tinker Sachs (1999) discussed how the microteaching could be more fully exploited to develop teaching skills and strategies in preservice teachers, and ultimately to better prepare them for the real classroom. During microteaching, the preservice teachers acted as secondary teachers with assigned roles to create teaching opportunities for the application of various teaching techniques and strategies. The assigned roles were towards discipline problems (e.g. too noisy students, students who do not want to learn English, average students) and mix-ability levels (e.g. slow learners and very smart learners) in the classroom, which she chose based on students' specified developmental needs in teaching skills. In her study, she particularly focused on the effect of lesson planning in pairs and of the assigned roles on the microteaching. Her participants were preservice teachers of English as a second language. The results showed that the majority of student teachers found the assignment of roles useful, although students noted that there were too many roles and some students either overacted or under reacted in carrying out their roles. She also concluded that the pre-microteaching activities such as planning microteaching in pairs encouraged student teachers to be supportive of each other and to be able to rationalize and articulate their teaching decisions.

Sari, Sakal and Deniz (2005) conducted a study to investigate the effect of microteaching on students' perceptions of using technology aided instruction in preprimary education. The study was held in a STE at Muğla University. The sample was second year students in a preprimary teacher education program. They administered a survey measuring students' perceptions of teaching skills at preprimary education before and after the

microteaching sessions. The results showed that there are significantly meaningful differences between participants' perceptions of teaching skills before and after the microteaching intervention in 17 items out of their 31 item-survey. These items were related to introduction to the lesson, gaining attention, using teaching methods, using materials and equipment, anxiety in teaching to an actual classroom and classroom management. Sari, Sakal and Deniz (2005) concluded that microteaching decreases the anxiety of preservice teachers related to classroom environment and leads the participants to feel more confident about teaching skills in teaching computers to kindergarten pupils.

Farris (1991) described how she organized on-campus microteaching in her general methods courses in her article. Microteaching sessions in which students acted as pupils were held three times a semester with the aim of improving teaching skills. The organization of microteaching involves determining and communicating objectives, scheduling and arranging equipment, space and time, and grouping students for filming and feedback sessions. She organized students into groups of seven or eight. Students operated the video camera and were responsible for time-keeping. The microteaching was conducted in regular classrooms with necessary instructional materials and recording equipment. In order to set up a connection between the microteaching exercises and class work in the course, she defined evaluation criteria and delivered them to the students before the microteaching activities. After the microteaching exercises, she fixed feedback sessions with the groups. She claimed the following benefits for microteaching: increased self-awareness for individual students, improved performance in specific skills, heightened concern for performance evaluation, and increased self-confidence in presentation manner. She stated that each semester her students' ratings of their microteaching exercises indicate that it is the most beneficial experience they have in class and that they advise her to continue these exercises in the following semesters. According to her, microteaching gives students the opportunity to receive feedback on their teaching manner and skills in a relatively nonthreatening atmosphere. Furthermore, it prepares preservice teachers for practical and student teaching exercises. She also touched upon the benefits of regularly observing peers in microteaching exercises, in terms of preparing preservice teachers for peer coaching and mentor relationships. Moreover, it encourages preservice teachers' reflective thinking. To sum up, she believes that micro-peer teaching not only improves teaching skills and increases self-confidence in teaching, but also gives students an opportunity to study the science of teaching.

2.2.5 Evaluation of Microteaching Performance

Microteaching performance can be assessed by teachers and/or supervisors from university, performers' peers, and oneself. Self and peer assessments are important and

highly valuable because these are powerful strategies for developing the many skills and qualities necessary for effective practitioners (Green, 1994). Topping (1998) has drawn a typology of peer assessment in higher education after reviewing 109 studies between 1980 and 1996, which is given in Table 2.1. Topping (1998) concluded that peer assessment of professional skills shows adequate reliability. Yet, outcome data in his reviewed studies are limited, often representing only participant perceptions. Nevertheless, peer assessment generally shows overall outcomes at least equivalent to teacher assessment. Observational schedules have some value in peer assessment of professional skills, while follow-up through self-monitoring merits further exploration. In his later review that covered studies from 1981 to 2006, he stated that qualitatively assessing, or giving formative and qualitative feedback to, peers is more beneficial than just marking or grading as follows:

Having learners “mark”, “grade”, or quantitatively assess the products of their peers places them too much in a teacher like role, and the result can be learner social discomfort and a central tendency in the assessments – everyone is rated “average”. Much more cognitively demanding for the assessor is giving formative and qualitative feedback, which is likely to be both more socially comfortable and more useful to the assessment [student being assessed]...Peer assessment can enhance self-assessment, and both can yield metacognitive gains (Topping, 2005, p. 640).

Furthermore, students found to be reliable assessors of their peers' performances when using more than one peer as raters (Magin & Helmore, 2001). Magin and Helmore found that single-teacher assessments are the equivalent of two to four peer assessments per presentation in assessing oral presentations skills. However, there are problems with peer assessments, too. Peer scores have been seen as considerably higher than the instructor scores; nevertheless, they have been significantly correlated with the instructor scores (Bağcı Kılıç & Çakan, 2007). In fact, peers do not objectively assess the microteaching because of emotional interference due to friendship (Bağcı Kılıç, 2005).

Bağcı Kılıç (2005) conducted a case study on the application of self and peer assessment for team microteaching with Turkish university students attending an elementary science teaching methods course. Students experienced team teaching during the course. In order to assess the groups' process of planning and application of a science lesson, the students assessed each member's contribution (including their own) to the group work. The results indicated that the students overrated themselves and their peers in three group projects conducted throughout the semester. Although self and peer assessment scores significantly correlated in the first group project, it was not constant and decreased to near zero in the second and third projects, in some sections. She deduced that the reason for high scores in self and peer assessment and low correlations between the self and peer assessment scores might be due to the students' subjectivity. She also investigated the students'

reactions to their first experience of self and peer assessment. The majority of students were positive toward both self and peer assessment. Furthermore, most of the students (75.4%) were positive toward peer assessment. Yet, not only the students who held negative views, but also some of the students who were positive toward self and peer assessment, questioned the students' objectivity in these types of assessment. The students who were negative toward self and peer assessment most frequently stated that they could not be objective.

Table 2.1 A Typology of Peer Assessment in Higher Education by Topping (1998)

Variable	Range of Variation
1 Curriculum area/subject	All
2 Objectives	Of staff and/or students? Time saving or cognitive/affective gains?
3 Focus	Quantitative/summative or qualitative/formative or both?
4 Product/output	Tests/marks/grades or writing or oral presentations or other skilled behaviours?
5 Relation to staff assessment	Substitutional or supplementary?
6 Official weight	Contributing to assessee final official grade or not?
7 Directionality	One-way, reciprocal, mutual?
8 Privacy	Anonymous/confidential/public?
9 Contact	Distance or face to face?
10 Year	Same or cross year of study?
11 Ability	Same or cross ability?
12 Constellation Assessors	Individuals or pairs or groups?
13 Constellation Assessed	Individuals or pairs or groups?
14 Place	In/out of class?
15 Time	Class time/free time/informally?
16 Requirement	Compulsory or voluntary for assessors/ees?
17 Reward	Course credit or other incentives or reinforcement for participation?

Bağcı Kılıç (2005) explained some reasons for students' not being objective in peer assessments. The students' peer scores might have been largely affected by their emotions of friendship. Turkish students generally have high expectations from their friends. Friendship is generally deep and strong. This might have caused them to be less objective when assessing their peers. Although the students did not criticize the group assessment form used

in the study, another reason for high self and peer assessment scores may be the assessment form used. In her study, Bağcı Kılıç made students use an open-ended form, just to give group members a point for assessment, and following the experiment she advises that category-based peer assessment forms would guide students better while deciding each member's contribution.

In another study, Bağcı Kılıç and Çakan (2007) investigated the reliability of peer assessment for microteaching performance. Preservice teachers taught a science topic as a team to their peers in an elementary science methods course. The peers participating in the science lesson assessed the performing groups' elementary science teaching skills on an assessment form provided by the instructor. The peer scores were analyzed by means of descriptive statistics and linear regression. To analyze the reliability and validity of peer assessment, t-test statistics and mixed-design ANOVA procedures were applied. Reliability analysis revealed that the students assessed their peers' science teaching performance reliably. The results revealed that, although the peer scores were considerably higher than the instructor scores, they significantly correlated with the instructor scores.

Woolhouse (1999) applied peer assessment with inservice teachers in a graduate teacher education course. In this study, students were paired. When one of student was teaching a lesson at his or her institution, the other one evaluated the peer's lesson. From the sample, 62% of the students held positive views of the experience and found peer assessment useful, valuable, and beneficial. Some of the students stated that peer assessment made them think about their own work more. The students also found peer assessment more difficult in one-on-one peer assessment than in an anonymous peer assessment in terms of criticizing their friends.

On the other hand, Vidmar (2006) criticizes many models of assessing teaching performance for focusing on summative evaluation in which peers observe each other once or twice a year and fill out institutional evaluation forms; in these models peers rarely engage in formative conversations about teaching that are guided by an instructor's personal goals and objectives. Based on this, he proposes reflective peer coaching which necessitates a ten-minute planning conversation prior to the actual lesson and a ten-minute reflective conversation after the lesson.

Özoğul, Olin and Sullivan (2008) investigated the effects of self-, peer- and teacher-evaluation on preservice teachers' performance, knowledge and attitudes related to writing lesson plans. Subjects were randomly assigned to one of the three treatment conditions: teacher-evaluation, self-evaluation or peer-evaluation. All groups completed three class periods of instruction on writing lesson plans, then each subject submitted his/her draft lesson plan. The drafts were evaluated by assigned evaluators (teacher, self or peer),

who provided scores and written feedback on a 15-item rubric. Students then revised their lesson plans into final form. All three treatment groups improved their lesson plans significantly from draft version to final version, with the teacher-evaluation group showing significantly greater improvement and writing significantly better final lesson plans than each of the other two groups. Nevertheless, subjects played a more active role in their own learning and also made significant improvements in their plans under both student-evaluation conditions. In addition, all three teachers reported that both self- and peer-evaluation enabled students to gain a better understanding of the evaluation rubric and to eliminate the major errors in their lesson plans. In their study, the peer-evaluators provided more feedback comments on the draft lesson plans than either of the other two groups and significantly more than the self-evaluators. In their interviews, the teachers emphasized that peer evaluators felt accountable and tried hard to provide good feedback.

Akıllı (2007) conducted a case study to investigate whether feedback that comes with peer and self-evaluation of their teaching practice video has a contribution to improve their competencies or not. These competencies include using teaching methods and techniques, their teaching skills and in-class activities, and communication skills. The participants of the study were five senior preservice science teachers. Each participant's one teaching session in the school was recorded on the video and self- and peer-evaluation were conducted on these videos. Based on the feedback, students revised their lessons and retaught in the school. At the end of the implementation, the participants were interviewed. Based on the results, Akıllı (2007) deduced that self and peer evaluation play an important role in training more qualified teachers and in improving the competencies related to teaching profession.

2.2.6 Feedback to Microteaching Performance

In microteaching, preservice teacher can be provided with feedback from four resources: (1) mechanical feedback from video recordings or audio tapes, (2) feedback from the instructor, (3) from peers, and (4) from pupils or persons in the role of pupils (Allen & Ryan, 1969; Abate, 1990). Furthermore, some researchers stress that feedback must come from this variety of resources (Kpanja, 2001; Wilkinson 1996; I'Anson, Rodrigues & Wilson 2003; Wilson and I'Anson, 2006) due to the fact that multiple sources provide different angles for self-confrontation of a microteaching experience. Yet the use of video playback and clinical supervisors (e.g. trained doctoral students) has been impeded by financial and time constrains in many teacher education programs (Subramaniam, 2006).

Amobi (2005) claims that feedback serves both the content for and the quality of reflection. This content enables preservice teachers to reflect on their microteaching

experiences which lead to changes in self-perception and subsequent behavior (Amobi, 2005; Benton-Kupper, 2001; Wilkinson, 1996).

Subramaniam (2006) compares and contrasts traditional and modified microteaching models in terms of the evaluator and the resources of primary feedback. The similarity is that evaluation of preservice teachers' performance leads to the generation of feedback. This feedback is used by preservice teachers to interpret their microteaching performance. On the other hand, there are two differences. One is that there is a shift from a dependence on clinical supervisors as evaluators to course instructors or peers. The second is that feedback from video playback is being replaced by feedback from oral, written and feedback forms (Subramaniam, 2006). This transformation shows that the priority of video recordings as source of feedback is decreasing; rather, oral, written and feedback forms from the instructor and peers has gained importance in recent microteaching models.

In the literature, there are studies of evaluation and feedback for microteaching performances focusing on the following aspects regarding peer and instructor feedback: delays in giving feedback (Cooper & Allen, 1970), the impact of additional feedback (Wilkinson, 1996), the content of feedback (Amobi, 2005), use of evaluation criteria within an evaluation system in peer assessment (Subramaniam, 2006); findings evaluated by peers as disturbing (Halbach, 1999).

After a series of studies of microteaching that started in the summer of 1963, Cooper and Allen (1970) concluded that delay in feedback does not seem to result in any weakening of training with microteaching. Nevertheless, they claimed that the limits of this effect along a time delay continuum need to be studied.

Peer feedback can be problematic in terms of quality. Preservice teachers tend to over assess their microteaching performances on physical appearance or mannerisms (Amobi, 2005; Brent & Thompson, 1996; Wilkinson, 1996), avoiding confrontation with the strengths and weaknesses of their microteaching performances.

In order to remedy the peer feedback, some researchers make suggestions to teacher educators. Benton-Kupper (2001) stresses the necessity of detailed rather than general or broad feedback. Detailed feedback is defined by her as supportive and containing constructive tips and suggestions that could be used to improve preservice teachers' teaching. Brent and Thompson (1996) suggest that feedback has to be related to goals that are set for a particular microteaching session by the course instructor. Gress-Newssome and Lederman (1990) state that feedback needs to stress the act of teaching rather than physical appearances or mannerisms exhibited during the microteaching performances. Danielson and McGreal (2000) claim that feedback for any teaching activity must be generated in the light of an evaluation system. This system should contain evaluation criteria, consisting of a

number of instruments and procedures to assess teaching. The main goal of evaluation criteria is to provide evidence for teaching actions. By means of these evaluation criteria, the evaluators can help preservice teachers to focus attention on the importance of teaching and learning for students and teachers (Subramaniam, 2006). They can also help to provide means and the incentives for quality assurance, and to serve as catalysts for encouraging and supporting professional learning through focused, collaborative activities. If feedback is given by peers, then the generation of feedback for microteaching session needs better evaluation criteria designed for peers (Subramaniam, 2006). Darling-Hammond, Hammerness, Grossman, Rust and Shulman (2005) also suggest that students should develop an analytic framework to assess their peers' microteaching performances.

Considering the necessity of relying on their peers' evaluation and feedback on microteaching performance and the need for a better evaluation system, Subramaniam (2006) developed a microteaching evaluation system and reported its influence on preservice teachers' peer feedback and self-review essays. This evaluation system consists of a microteaching evaluation form, an analytic framework for teaching (to facilitate the connection between educational theories and practice), and a self-review essay. Teaching strengths, teaching weaknesses (Amobi, 2005; Brent & Thompson, 1996; Gess-Newsome & Lederman, 1990; Wilkinson, 1996) and suggestions for improvement were used as evaluative criteria in Subramaniam's evaluation system, as well as physical appearance, mannerisms and speech. Beside the microteaching evaluation form, the students were provided with the analytic framework. She tested this microteaching evaluation system in a teacher education program at a private university in the northeast of the US in Fall 2004 and Spring 2005. The sample was 120 female elementary education students. The study was conducted in an elementary science teaching methods course. Students were placed in groups of four and they performed their microteaching in their groups in the fourth and eighth week of the semester. The instructor and the three peers evaluated the performer student via a microteaching evaluation form. After the two sessions, the performer wrote a self-review essay, using the evaluation forms of her performances. Subramaniam (2006) analyzed the participants' and the course instructor's evaluations of the microteaching sessions, and the participants' self-review essays of their microteaching sessions.

Her study's findings revealed that the effectiveness of microteaching evaluation form was dependent on the weight given to each of the criteria. Because of the fact that she assigned less weight to appearance, mannerism, and speech; neither in the evaluation forms nor in the self-review essays did students overstress these aspects, instead, they focused largely on teaching strengths and weaknesses that had been given higher weights in the grading. Subramaniam (2006) inferred that adjusting the weight of points for grading peer

assessments and self-review essays by decreasing points for physical appearance, mannerism and speech and by increasing points for teaching skills enabled preservice teachers to focus on teaching skills rather than appearance or communication skills when they evaluate their peers and when writing self-review essays. However, the other major finding revealed that the nature of the interpretations in the evaluation forms was representative of the analytic framework provided to the participants prior to the microteaching sessions, and there was no application of educational theory to the microteaching performances. Preservice teachers limited themselves to the framework provided when giving feedback to their peers, and thus the students were not free and flexible in their interpretations. Furthermore, self-review essays were also paid poor attention to current and reformed educational theories of teaching and to the correlation between microteaching performances and application of those theories (Subramaniam, 2006).

There are also efforts to investigate the efficiency of feedback from expert teachers and of discussion facilities over CMC. Lee and Wu (2006) emphasized the importance of providing feedback to students as an aspect of the teaching and learning processes, particularly because it is often a necessary requirement for the stimulation of self-reflection. In their article, Lee and Wu (2006) describe the use of video-enabled, web-based CMC for the provision of feedback to preservice teachers who were involved in a teaching practicum course within a teacher education programme. They videotaped preservice teachers' microteaching and field-teaching performances and made the videos available for viewing within the CMC system. They asked experienced high-school teachers to critique the preservice teachers' performances and to lead the discussions using the CMC system. The results of the questionnaires administered to all participants of the study showed that the system effectively enhanced preservice teachers' teaching experience. They reported that there were five reasons cited for the success, as follows: (1) easy access to taped teaching sessions; (2) better assessment of personal teaching style; (3) more sharing of one's teaching and more learning from peer teaching; (4) more concrete feedback; and (5) more effective involvement of experienced teachers.

Halbach (1999) regards microteaching as a plausible technique to satisfy students with the content of methodology courses. She also, however, discusses its possible threats for students. Having evaluated student's perceptions of a teaching method course in English Language Teaching (ELT), she has drawn some conclusions about the teaching method course. First, students preferred the more practical aspects of the course over the abstract theoretical content. In the light of objections to peer evaluation, the problem would be how to make the experience as unthreatening as possible. Ideally, any microteaching session should be followed by critical comment and if possible by a re-teaching session. However,

some might see both of these as representing a threat. One way of avoiding this problem would be to leave the evaluation to the trainer, since trainees normally accept the trainers' comments more readily than those from their peers. "But in this way, they would miss the chance of exchanging ideas about something they have observed together and developing their critical awareness of what goes on in any teaching session." (p.188). On balance, she stated that the best way to avoid microteaching becoming a negative experience would be to have trainees prepare their microteaching plans, materials, etc. in pairs or groups. They generally felt uncomfortable when their work was evaluated by their class-mates. She emphasizes that the ability to evaluate one's own work as well as the work of others and being able to accept criticism is very important for teachers. She states that these are skills that have to develop through teacher training courses. "It is also important to provide trainers with guidelines on how to do this evaluation, perhaps focusing on specific criteria at first and then gradually expanding to yield a more comprehensive evaluation" (p. 187). Second, the preservice teachers perceived a gap between theory and practice, and she claims that this is a barrier to progress in the field of ELT education.

I'Anson, Rodrigues and Wilson (2003) claim that microteaching is a heuristic procedure offering no guarantees a solution, whereas it is also something warranting a shift from viewing self and agency from one's own viewpoint to viewing oneself through the eyes of another through feedback. According to them, the triangulation of a teaching episode in microteaching through a personal review of the video tapes and in light of peer and instructor feedback is a significant aspect of scaffolding for the development of the process of reflection. This reviewing process in the light of feedbacks, which involves making explicit one's thoughts about practice, provides a tool that can be used to develop reflective capability. I'Anson, Rodrigues and Wilson (2003) state that students seem to become more competent as reflective practitioners, given appropriate shared social contexts in which to consider preservice teachers' thinking about their teaching.

2.2.7 Effect of Using Videotape Recording on Mastery of Teaching Skills

The literature indicates that capturing microteaching sessions has some positive and negative effects on the preservice teachers who perform microteaching. When a video camera is used in the microteaching environment, the earlier studies show that preservice teachers significantly improve their teaching skills compared to those whose microteaching performances were not recorded on video (Kpanja, 2001). At the end of the intervention, those whose performances were recorded behaved more confidently in subsequent microteaching sessions (Kpanja, 2001).

Jacques (2000) states that video recording and playback have benefits in teaching, such as drawing the attention of everyone in class to behaviors or events that may not have been noticed at the time of the live teaching performance. He also suggests that playback can increase questioning and discussion among the preservice teachers about the microteaching episode.

Kpanja (2001) conducted an experimental study to investigate whether the use of videotape recordings is an effective method of teacher education. The sample was 40 preservice teachers divided into two groups: experimental and control. Both groups were taught by the same teacher. The groups conducted microteaching in a microteaching laboratory where students were selected to role-play the parts of pupils and teachers. Critical analysis and discussion of microteaching were conducted by a teacher and the lecturer. The control group carried out microteaching without any video recording while the other group recorded their microteaching sessions. The groups took a pretest and a posttest which assessed their teaching skills. The results indicated that the group who recorded their microteaching made a significantly greater improvement than the control group. Moreover, it was reported that students in the experimental group behaved more confidently towards their microteaching session, while those in the control group were less enthusiastic and after the session were found to be still inadequately prepared for subsequent micro lessons. However, it should be noted that how the microteaching recordings were used in the intervention was not clearly described in the article.

All the participants in the study of Şen (2007) had positive attitudes towards microteaching because they had the opportunity to watch themselves from outside by means of their recorded microteaching performances. Most of the participants claimed that the anxiety they felt due to being recorded on video diminished as time passed in their microteaching.

2.2.8 Preservice Teachers' Opinions about their Microteaching Experiences

Many studies indicate that preservice teachers find microteaching useful (Şen, 2007, Wilson & I'Anson, 2006; Amobi, 2005; Higgins & Nicholl, 2003; Benton-Kupper, 2001; Kazu, 1999). Furthermore, Metcalf (1993) reports that microteaching is not perceived as merely a pseudo performance by the students, rather, the students in her study informed her that they felt that they were engaged in a real teaching and learning activity.

Bell (2007) conducted a qualitative study to learn more about the interactional characteristics of microteaching, including the ways in which students approached the microteaching task. Her data was 22 videotapes of 13 participants (seven undergraduates in the field of mathematics and English secondary education and six M.A. students in TESOL),

and questionnaires, and interviews with these participants. She reported that her students confessed to serious complaints about microteaching while at the same time they did find it valuable. For example, one of the participants said that conducting microteaching is a silly task. The participants felt anxious when teaching their class-mates and some of them stated that they couldn't help analyzing how their friends' real identity plays an active role during microteaching. Having examined videos of microteaching sessions, Bell (2007) concluded that the question of how to frame the microteaching task in their minds was a constant challenge to the students, who must simultaneously have the roles of teacher, student, class-mate, and peer/friend. In both interviews and questionnaires participants described their perception of the activity and explained how they approached the task. The results reveal that microteaching resembles a "performance" or "classroom task" or "educational requirement" to a much greater extent than it resembles "teaching". In other words, microteaching was only rarely thought of as teaching, rather, in constructing the activity it was thought of as an educational requirement or performance. Bell (2007) recommend teacher trainers to frame microteaching as "performance", accordingly, microteaching can help preservice teachers think what kind of teacher they would like to be and give the freedom of experimenting what it is like to be that kind of teacher and what such a teacher would experience.

Considering the little advice available for novice teachers on how to plan or implement a teaching session by using microteaching, Higgins and Nicholl (2003) reported two lecturers' experiences in using microteaching to teach presentation skills to a group of student teachers in nurse education. The lecturers decided on the format for the sessions, the role of each lecturer, the desired learning outcomes, the process of giving feedback to the students and the evaluation strategy. Each student performed a 15-minute lesson in the microteaching laboratory for a topic they had selected. The lessons were a complete lesson consisting of introduction, middle and conclusion. They used split camera and zoom facility to ensure that appropriate content was captured on videotape. Video recording focused simultaneously on capturing both student-teacher and student-student interactions. In order to provide specific feedback, an evaluative tool as designed to guide the self, peer and expert evaluation that form part of each session. After each microteaching episode, a six-stage evaluation procedure was implemented, which lasted 15 minutes. The performer students were given the videotape and written evaluation forms so that they could reflect on their learning. The semi-structured questionnaire was administered to 19 of 20 students at the end of microteaching module.

The results showed that students found this method beneficial and useful. They stated that the learning that resulted from self, peer and expert feedback was important for them. The students also commented on the emotional effects of the experience of

microteaching itself, focusing largely on anxiety during their own microteaching episode. Students' evaluation of microteaching suggested that, despite the anxiety they experienced, it is a valuable methodology in nurse education. Higgins and Nicholl (2003) point out that if verbal feedback is to be used as an evaluation method, an experienced teacher should facilitate the feedback session and the students should be trained in how to give constructive feedback; they should be given a written guide on this issue. They also stated that written feedback is helpful since the students can use it after the sessions for reflection on the experience. According to them, the written feedback can be viewed as a written analysis of the microteaching session, as well (Higgins & Nicholl, 2003).

Akalın (2002) states that if microteaching is implemented in a department on campus with the preservice teachers' peers, it is a handicap since the candidates feel uncomfortable with their peers' observing them and evaluating them. They feel that it is an artificial atmosphere and that they would act differently in genuine classroom atmosphere.

In order to investigate students' views about microteaching, Akalın (2005) administered a questionnaire to students who performed microteaching and observed their peers' microteaching to authentic pupils. She noted that the participants strongly agreed with the following statements: microteaching allowed them to assess their instructional strengths and weaknesses; videotaping and watching their own videos recorded during their presentation was beneficial to them; they gained many ideas and strategies to implement in the future through the various lessons observed in the microteaching sessions. They agreed with the following: the microteaching increased and/or developed their public presentation/communication skills; peer evaluations of their lessons were beneficial; and microteaching allowed them to have clearer idea of what it takes to plan and implement lessons.

Amobi (2005) also found that microteaching was considered favorably as a meaningful learning experience by preservice teachers. His microteaching study with 31 preservice teachers in a field-based general teaching methods course required the preservice teachers to perform two microlesson activities based on self and peer-evaluation. It was reported that microteaching was appreciated as a favorable method for meaningful learning experience and a pressure-free environment for planning, teaching, and reflecting on their teaching.

Şen (2007) conducted a qualitative study with 21 senior students in physics education to investigate their opinions regarding microteaching applications. The students engaged in microteaching activities three times in their course in the university and two times in a school environment. After this, their opinions about the microteaching activities were gathered in semi-structured interviews. The results indicated that preservice teachers

were satisfied with the microteaching method and believed that it would contribute to their future professional practice. Many preservice teachers stated that their stress levels in the classroom decreased because of the microteaching applications. Students liked most the following aspects of microteaching: enabling self-evaluation (13 students), lessening anxiety by teaching in front of a group (10 students) and having a first teaching experience (6 students). On the other hand, students criticized the following aspects of microteaching: students' weaknesses in playing their actual teacher roles due to not being in an actual classroom environment during microteaching (13 students), and the limited time -15 minutes- given for microteaching (4 students). The participants stated that the duration of microteaching should be increased. When they were asked about the effect of a video camera on the microteaching performer, all the participants responded positively to the presence of the video camera in the environment since they could watch their own performance from the video. Most of the participants stated that they got used to the camera as time passed, and they were not disturbed by the video camera at all in the last microteaching session.

Kazu (1999) conducted an experimental study to examine the effect of microteaching on preservice teachers' attitudes toward the teaching profession and practice in the School of Technical Teacher Education at Firat University. She investigated the perceptions of preservice teachers about microteaching, as well. The experimental group engaged in the microteaching method, comprised 3rd year students and the control group comprised 4th year students. The results indicated that the experimental group had significantly more positive attitudes toward the teaching profession than the control group. Furthermore, it was detected that the experimental group had less difficulty in all the activities and skills performed in teaching practice. Moreover, the experimental group had quite positive perceptions towards the microteaching method. On the other hand, the short period of microteaching episodes, not using authentic pupils, and not performing in an authentic classroom were indicated as limitations of microteaching.

2.2.9 The impact of Microteaching on the teaching practice in the real classroom

Copeland (1975) tested whether the skills gained in microteaching are used in field teaching. His sample was 32 preservice teachers. The participants were divided into experimental and control groups. The experimental group got five weeks of microteaching training for asking probing questions and higher order questions, but the control group did not. While the experimental group illustrated the target skills significantly more than the control group just after the microteaching sessions in laboratory environment, no significant differences were found between these groups when they taught in real classrooms as field teaching. Copeland commented that this result could be due to the mentor teachers' attitudes

(towards planning, teaching and learning), and implementations in the classroom, because these highly influence the attitudes of beginner teachers. However, he stressed that teaching skills are only one dimension of teaching. Microteaching has a potential to increase the self-confidence of preservice teachers regarding teaching and provides a context for increasing self-awareness of personal habits and more insight into one's teaching, though its impact on teaching skills were not found to be significant in his study.

On the other hand, the study of Madike (1980) indicated that pupils taught by student teachers who had done microteaching before were more successful in mathematics than those who were taught by student teachers who had been educated in other ways. He compared the performances of pupils who were taught by student teachers given microteaching, by student teachers trained with traditional observation treatments, and with a no-preparation control group. In that study, 192 7th-grade Nigerian boys, blocked into 4 mathematics ability levels in each school in an urban, suburban, or rural setting, were randomly assigned to 36 student teachers. They were then blocked into two mathematics ability levels and randomly assigned to the two treatment groups and the control group. ANOVA revealed that pupils taught by student teachers who were trained through microteaching achieved significantly higher mean mathematics scores and participated in classroom activities significantly more times than did pupils who were taught by other groups of student teachers.

Simbo (1989) conducted a study to ascertain whether there is a difference in the classroom performances between preservice teachers who were exposed to microteaching besides teaching practice, and those who took only teaching practice. A stratified random sample of 20 second year preservice teachers in the field of social studies was randomly assigned to two equal groups. One group was exposed to a mini-microteaching programme, which ran concurrently with the teaching practice exercise, while the second group was not exposed to microteaching. The teaching performances of the two groups were observed in actual classrooms, by three independent assessors, before and after the microteaching. The means of the aggregated means of both groups were compared using the t-test of significance. It was found that while there was no significant difference between the performances of the groups in the pre-microteaching observation scores, there was a significant difference between them in the post-microteaching observation scores, in favor of the microteaching group. This indicates that microteaching is more effective in improving teaching performance than traditional teaching practice.

The earliest studies on microteaching in Turkey also indicate a positive effect of microteaching on teaching practice. Bayraktar (1982) investigated the impact of microteaching on a teaching experience course. The results showed that preservice teachers

who experienced microteaching were more successful than those who did not. He stated that this method could be beneficial in preservice teachers' overcoming the problems they encounter in preparing a teaching environment and in preparing pupils for learning as well as in implementing the entrance, core activities and practice parts of the lesson. Aksan and Çakır (1992) conducted an evaluation study to investigate the effect of the microteaching model implemented in "teaching grammar" and "teaching writing" courses. They informed that students found this method helpful in adopting the teaching profession, developing lesson planning, performing the lesson, and classroom management. In addition to this, Kuzu and Külahçı (1996) investigated the effects of a microteaching course in the School of Technical Teacher Education program at Fırat University. They found that the preservice teachers who took the microteaching course were more successful in teaching practice than those who did not take microteaching course.

2.2.10 Studies on Microteaching in Turkey

In Turkey, microteaching in teacher training was first launched in 1990-1991 within the Second Industrial Education Project for the program of technical teacher education schools as a two-credit course, and microteaching, which has been used in developed countries since the 1960s, eventually begun to be used in Turkey (Uşun & Zorlubaş, 2007). Turkey is quite late for research regarding microteaching applications (Şen, 2007), parallel to its late entrance to STEs. Thus, there are a limited number of studies about microteaching from Turkey (Çakır, 2000). Nevertheless, microteaching has started to be studied in teacher training research since the early 2000s.

Turkish studies in the 1980s and 1990s were experimental or quasi-experimental studies in the process-product research paradigm, investigating the effect of microteaching on preservice teachers' attitudes and teaching skills. The earliest ones obtainable are Bayraktar (1982), Aksan and Çakır (1992), Kuzu and Külahçı (1996) and Kuzu (1999).

Çakır (2000) conducted a survey study to define the status of microteaching in Turkish education at the beginning of the 2000s. The population of her study was the teacher educators who offer teaching method courses and were working in three universities in central Anatolia. She developed a questionnaire to gather the teaching method course instructors' views and ideas regarding the status of microteaching in Turkey. Forty one faculty members responded to her questionnaire. According to the results, all the members stated that they would like to use microteaching, but 56% of them did not use this method in their method courses. Among those who applied microteaching in their lessons, only 7% reported that they used this method with the support of their STEs, while 41% did not have such a support. On the other hand, 83% stated that they needed STEs support to implement

this method. Forty one per cent of them said that they needed recording equipment to implement this method. It seems that they needed support form STEs in terms of a microteaching laboratory and recording and display equipment. For feedback to be given to microteaching performers, 46% of faculty stated that the feedback should be given by the students and the trainer, while 17% of them claimed that feedback should be given by only the trainer. Almost half of the faculty gave importance to using the participating students as evaluators in the microteaching process. Çakır (2000) concluded that the sample knew the microteaching, but they did not give importance to the laboratory-based microteaching technique since the teacher training system in Turkey does not give importance to it, either. Furthermore, the instructors did not implement this technique effectively due to lack of recording equipment and an inappropriate environment in the STEs.

According to some views and beliefs in the literature, the microteaching method is not widely used in Turkey because this method is not well-known, and it is thought that this method cannot be applied without video and display equipment (Uşun & Zorlubaş, 2007). However, microteaching should be reconsidered, since video technology has in recent years become more accessible and affordable (Şen, 2007) as well as more advanced. Nevertheless, studies involving the microteaching method seem to have become more widespread in Turkey with new global trends –such as reconstruction of microteaching– in teacher training research. Akalın (2002; 2005), Sarı, Sakal and Deniz (2005), Şen (2007), Köksal and Demirel (2008), Şanal Erginel (2006), Sarvan Gencer (2008) have recently conducted the earlier mentioned studies either on microteaching or involving microteaching from Turkey.

Although a number of studies mentioned above have been conducted about microteaching with preservice teachers from various fields such as elementary teachers, foreign language teachers, science teachers, no research study was reached investigating the potential of microteaching that was conducted with CEIT preservice teachers in Turkey. Therefore, this study was intended to fill this gap, by shedding light on advantages and difficulties of the microteaching practice in teaching method courses in CEIT departments.

2.3 Training Computer Teachers for Basic Education Schools in Turkey

Within the framework of the National Education Development Project implemented in 1990-1999, the Higher Education Council (Yüksek Öğretim Kurulu-YÖK) made some significant efforts to raise the quality of teachers. In order to respond to the changing needs of the society and to increasing problems in the education system, teacher training programs were restructured in 1998 to produce more teachers for basic education. Within this restructuring, a program and departments of Computer Education and Instructional

Technology (CEIT) in STEs were opened, to meet the need of computer teachers in basic education schools (YÖK, 1998).

Çakır (2008) conducted a study to investigate the perceptions about pedagogical and content knowledge held by preservice and inservice CEIT graduates who work or would be working in basic education schools. He interviewed 33 preservice teachers in the department of CEIT. When he asked preservice teachers about their perceived pedagogical knowledge, they generally asserted that they had some difficulties at practice although they considered themselves competent enough at the teaching profession. Prospective teachers were observed to have different ideas about preparing lesson plans and applying them. Some of them (N=14) considered lesson plans to be unnecessary for computer lessons and found the application of lesson plans in computer labs very difficult. Some other preservice teachers (N=9) claimed that preparing lesson plans is very important and that lesson plans which were prepared in accordance with the special needs of each individual in class made the lessons abundantly productive. Some (N=14) emphasized the importance of having a variety of materials in the lesson plans and of giving examples to relate the lesson topic to students' real life experiences. After analyzing these preservice teachers' lesson plans for practice teaching, Çakır (2008) inferred that the prospective teachers prepared plans studiously. They tried to consider students' needs and to give many examples, especially real life examples, in their lesson plans. In his observation of preservice teachers practice teaching, he realized that they all planned the lesson well before their practice, and provided various types of materials and examples, but they experienced difficulty in implementing teaching strategies and techniques due to large numbers of students, individual differences and the varying readiness level of students. Six of the participants argued that they could not implement teaching methods systematically while teaching and that computer courses are not suitable for this. He also observed that they gave importance to methods in lesson plans while in practice they almost entirely followed different ways and methods. Seven participants emphasized the importance of attracting the students' attention and keeping their motivation high. He reported that almost all participants in his study (N=28) stated that time management was an important problem in implementing lesson plans. He drew attention to the computer course being optional and having a limited time -one hour a week-, noting that these are negatively affecting factors for the success of the course and accomplishment of the pedagogical requirements of the classroom. He also observed a problem due to crowdedness of the classrooms. Most preservice teachers (N=18) also thought that they had difficulties in the evaluation part of the lesson, and most of them saw time limitation as the main reason for this. He reported that some of the prospective teachers (N=8) emphasized that they did not know the evaluation criteria in the new curriculum; neither did they know how to apply that

curriculum. He also observed that prospective teachers had difficulties in assessing students' learning in the laboratory, although they defined the assessment criteria in their plans.

The interview and observation of preservice teachers indicated that preservice teachers feel inadequate in terms of competency in pedagogical knowledge (Çakır, 2008). His results indicated a gap between university training and real life practices. He recommended that the reasons for this gap should be examined in detail by conducting field research.

Çakır (2008) interviewed with 12 inservice computer teachers (CEIT graduates) working in basic education schools, and observed four of them while teaching in the classroom as well. Regarding the problems of computer courses in the schools, firstly, most of them asserted that the students came to computer lessons just to play games and to have fun, and he observed this during class observations. Secondly, different levels of students' computer literacy, their low interest in learning to use computers, old-fashioned curriculum (the previous one), and lack of integration of computer into other subjects were the major problems regarding the computer courses. Regarding the profession of computer teaching, half of the inservice teachers asserted that computer teaching profession has many distinct features compared to other branches of teaching. Most of them (N=9) claimed that computer teaching is not necessary any more, since students are already familiar with the computer. They (N=8) highlighted that computer teaching should be integrated to other subject areas. They demanded the re-definition of their work in the school, because other teachers perceived them as technical service staff and being charged with the responsibility of technical work in the schools. In addition, many of them (N=7) also have problems with the formator teachers. Based on these problems of computer teachers, Çakır (2008) calls attention to that computer teaching in basic education schools has problems and the department of CEIT needs restructuring in this sense. He also emphasized that there is no similar department in developed countries to train computer teachers. His study revealed that for both inservice and preservice computer teachers, computer teaching is neither a difficult field nor a respected profession, due to not being included in topics of high school entry exams and not including its grade in overall grading of students.

Regarding pedagogical competencies, firstly, the inservice computer teachers stated that the pedagogical knowledge during their education in STEs did not correspond to the teaching context in the schools. Half of them stated that they developed their own teaching strategies based on their teaching experiences and observation of the students, while only one third of them stated that they determined their own teaching strategies in accordance with their education in STEs. They advised that the courses of pedagogy should be changed in STEs, and the computer teachers should not be distinct from the other subject areas.

Secondly, almost all of them asserted that the teaching practice in STE programs is inadequate. They emphasized that extra pedagogical classes were needed in the CEIT program. Almost half of them also suggested that the experienced teachers should share their experiences with the preservice teachers. Thirdly, half of them stated that preparing a lesson plan for the computer class -stable lesson plans for computer labs- is not necessary because of that computer and its application are continuously changing. Fourthly, they claimed that computer is an object between teacher and students, which makes the communication difficult in the class. Finally, half of them thought that the limited time given for the lesson - one hour a week- was not enough to fulfill the pedagogical and other requirements of the course. Çakır also observed this situation during class observations. More than half of them also stated that they did not understand how to evaluate students in accordance with the new curriculum.

2.4 Summary of the Literature Review

This study aimed to investigate the potential of two cognitive tools for lesson planning and microteaching in improving preservice computer teachers' instructional planning and teaching skills and effects of these tool and microteaching on their instructional planning and teaching skills in their field teaching. Although, there exists a considerable accumulation of literature about improving preservice teachers' instructional planning and teaching skills, this chapter presented a review of literature particularly focused on the following key frames: cognitive tools for instructional planning and microteaching method for preservice teachers in STEs.

The cognitive tools (IPSRT and CPSRT) for lesson planning were developed in order to support preservice teachers' lesson planning process that involves reflective thinking, problem solving and learning. More specifically, they were designed to improve self-regulatory skills needed for instructional planning. The self-regulatory learning strategies that IPSRT was intended to support are self-monitoring and self-evaluation, whereas that CPSRT was designed to enhance are self-monitoring, self-evaluation and cognitive flexibility. Therefore, the basic aim of IPSRT and CPSRT is to help preservice teachers in self-directed lesson planning process within the instructivist and constructivist approaches respectively. In the literature, there are studies to understand the effects of these tools on preservice teachers' instructional planning attitudes and performance, and opinions about their benefits. However, in previous studies about the impact of these tools, no tutoring was provided by the instructors to students in lesson planning process with these tools (in the form of one-to-one dialogue on the plan, when students demanded or the instructors observed a problem while they were planning and in the form of written and oral feedback to

plans). The present study enhances the use of the tools by adding tutoring from the instructor. In this way, the role of tutoring in using the tools as well as the effects of using them can be identified. Furthermore, in previous studies, students' lesson plans that they developed with these tools have not been examined in terms of to what extent they used or followed these tools during lesson planning. Therefore, this study investigated it to understand how they used the tool. Moreover, in previous studies, the students who used the tools were not interviewed about the reasons of the advantages and problematic issues with these tools. It should be noted that the previous studies also advised for further studies to interview with the students about the reasons of change in their self-efficacy beliefs after they use the tools. For these reasons, the participants were interviewed in the present study. Besides, no research study was reached which has investigated the potential of these tools in improving preservice teachers' lesson planning skills in Turkey.

When the current condition of preservice computer teachers about lesson planning and teaching in Turkey is considered, Çakır (2008) stated that CEIT preservice teachers' field teaching plans were well-designed on paper, but they followed totally different ways than the plan in their teaching practice. This contradiction could be interpreted as an indicator of that they do not actually have self-regulatory skills and planning experience to make instructional planning so as to tailor their plan to student needs, classroom environment, learning outcome, and resources at hand, and thus, they cannot plan their instruction and they most probably use ready-made lesson plans. Considering the promising effects of IPSRT and CPSRT on self-regulatory strategies and ultimately self-efficacy and motivation regarding instructional planning stated in the literature, there is a need to support CEIT preservice teachers by means of these tools during their self-directed planning practice in the two traditions of theoretical paradigm.

As for the research on microteaching method, has also been worked on its use in improving preservice teachers' knowledge, skills and attitudes regarding teaching for about a half century in the literature. The literature show that models for implementing this method has evolved over time due to the fact that the theories of teaching and learning, the directions of research on teacher education and its implications to practice have been in a constant change. Based on the current literature review, the researcher developed a microteaching model. The second phase of present study was designed to investigate the preservice teachers' opinions about the contributions and challenges of the components of this microteaching model. With this study, it was intended to fill two important gaps in the literature. Firstly, there are many studies on microteaching indicating its advantages and disadvantages in improving preservice teachers' teaching skills and reflective thinking, as mentioned in this chapter. However, almost none one of them described how their

participants made lesson plans for their microteaching session, and what the role of the instructor and peers was in that planning process. Since good practice depends on good planning -both mentally and on paper (especially for novice teachers)- the microteaching model used in the current study also involves one-to-one tutoring by the instructor throughout students' microteaching planning process. The originality of the model is actually due to this planning part.

Secondly, although a number of studies mentioned above have been conducted about microteaching with preservice teachers from various fields such as elementary teachers, foreign language teachers, science teachers, no research study was reached investigating the potential of microteaching that was conducted with CEIT preservice teachers in Turkey. Furthermore, Çakır (2008) emphasized the need to redesign pedagogical content knowledge courses in CEIT program, including the teaching method courses, due to the difficulties that computer teachers experience when teaching in the computer laboratory environment. Therefore, the microteaching model in the current study aimed to simulate the laboratory environment by using laptops on the desks of students in the role of pupils. In this sense, this study was intended to fill this gap, by shedding light on advantages and difficulties of the microteaching model in teaching method course in a CEIT department.

CHAPTER 3

METHODOLOGY

This chapter presents methodological issues such as the purpose and design of the study, sampling, data collection instruments and procedure, data analyses, reliability and validity, and the limitations of the study.

3.1 Purpose of the Study

This study was designed to investigate the contributions of and the challenges posed by the use of the cognitive tools (IPSRT: Instructional planning self-reflective tool and CPSRT: constructivist planning self-reflective tool) and microteaching, to computer preservice teachers' instructional planning and teaching skills.

The following research questions about the cognitive tools (IPSRT and CPSRT) were asked:

1. What are the contributions and challenges posed by the cognitive tools in improving CEIT preservice teachers' instructional planning knowledge, skills and attitudes in the field of computer education?
 - 1.1. To what extent do the preservice teachers follow the IPSRT and CPSRT during instructional planning?
 - 1.2. Does either the IPSRT or the CPSRT better enhance preservice teachers' self-efficacy towards planning instruction?
 - 1.3. Does either the IPSRT or the CPSRT better enhance preservice teachers' perceived instrumentality of instructional planning?
 - 1.4. What are the preservice teachers' perceptions of the contributions and challenges involved in using these tools for instructional planning?

Regarding the microteaching method, the following research questions were asked:

2. According to CEIT preservice teachers, what are the contributions and challenges presented by the microteaching model used in the Teaching Methods in Computer Education II course, as a method to improve instructional planning and teaching skills?

- 2.1. What are the preservice teachers' opinions about the contributions and challenges presented by tutoring used throughout microteaching planning process, for instructional planning and teaching skills?
- 2.2. What are the contributions and challenges presented by microteaching performance for preservice teachers' instructional planning and teaching skills?
- 2.3. What are the contributions and challenges presented by assessing peers' microteaching performance through the Microteaching Assessment Form, for preservice teachers' instructional planning and teaching skills?
- 2.4. What are the contributions and challenges presented by being assessed through the Microteaching Assessment Form, for preservice teachers' instructional planning and teaching skills?
- 2.5. What are the contributions and challenges presented by doing a self-reflection assignment, which involves analyzing feedback given by the instructor, teaching assistants and peers?
3. What are the effects of the cognitive tools and the microteaching method used in the Teaching Methods in Computer Education II course, on preservice teachers' field teaching planning and performances?

3.2 Design of the Study

The present study has an action research design utilizing multimethod techniques in data collection and interpretation. Action research is conducted “for the purpose of solving a problem or obtaining information in order to inform local practice” (Fraenkel & Wallen, 2003, p. 572). It is the idea of conducting research in a “natural” setting to change the way that the researcher interacts with that setting (Ferrance, 2000). According to Stephen Corey, who is among the first to use the action research in education in the U.S., the value of action research is in the change that occurs in everyday practice rather than the generalization to a broader audience (Ferrance, 2000). Indeed, such research studies are maximally useful when they recommend an action plan which will be implemented and further evaluated (Fraenkel & Wallen, 2003). In this sense, action research design was applied in the current study in order to investigate the potentials of the cognitive tools for instructional planning and the microteaching method in gaining lesson planning and teaching skills in the routine practice, not in an artificial environment only designed for the research. Accordingly, it was aimed to propose an action plan involving how to use these cognitive tools and microteaching model in teaching method courses, especially in CEIT departments of STEs.

According to Fraenkel and Wallen (2003), action research involves four basic stages: (1) identifying the research problem or question, (2) obtaining the necessary information to

answer the question, (3) Analyzing and interpreting the information that has been gathered, and (4) developing a plan of action. How to conduct these steps are explained in this chapter.

The current study employed multimethod techniques in data collection and interpretation. This is because answering the research questions involves in collecting different types of data (either quantitative or qualitative, or both).

Parallel to its three main research questions, the present study has three phases. The first phase of the study has a within-group design. In this phase, students were introduced to two different cognitive tools for instructional planning in different theoretical approaches (instructivist and constructivist) over four weeks. The aim was to understand which tool is more efficient and valuable in enhancing students' instructional planning knowledge, skills, motivation and attitudes. Thereby, the students had the opportunity to develop and/or compensate for their instructional planning knowledge and skills before they planned their microteaching sessions. In order to provide a triangulation of the data, both quantitative means such as questionnaires and qualitative means such as semi-structured interviews were used in the data collection. As to the second phase, it focuses on contributions and challenges posed by microteaching activities. This phase of the study has the nature of a naturalistic inquiry, including interviewing as the main data source. The previous research about microteaching often uses qualitative research method in order to investigate the nature of microteaching, its strengths and weaknesses and its impact on gaining various skills, as well. Finally, the third phase also has the nature of a naturalistic inquiry. In this phase, the effects of the cognitive tools and microteaching activities on preservice teachers' field teaching lesson plans and performance were investigated through document analysis, observation and interviews.

3.3 The Participants in the study

In action research, purposive sampling methods are generally used (Fraenkel & Wallen, 2003). Accordingly, the present study was conducted in the "Teaching Methods II in Computer Education" course, which is offered to 4th year students in the department of CEIT at METU. Thus, the participants of this study were 51 senior CEIT students (35 male, 16 female). The participants' demographic information is shown in Table 3.1. Their ages are 22.9 on average, ranging from 21 at least to 26 at most. Their cumulative grade point average (GPA) is between 2.5 and 2.99 out of 4, on average. All the students are registered only in the CEIT program, except for three students pursuing a combined degree course with another department.

Most of the students had been to Vocational and Technical Education (VET) schools (N= 40). Accordingly, the majority of students had been schooled in computer (N=18),

computer-hardware (N=11) and computer-software (N=11) departments of VET schools, while the remaining students were from the science-mathematics departments of various general-purpose high schools (N=11).

The participants were divided into two sections. The first section has 25 students and the second section has 26. However, there were five students in the second section who had to attend classes with the first section because of their irregular schedule. Nevertheless, they were able to perform microteaching in their own sections' class hour. Throughout this study, each student in the sample was given a unique, randomly assigned code to identify him/her while keeping his/her real identity confidential. These codes ranged from S1 to S51 (S refers to student).

Table 3.1 Demographic Information of the Participants

		Section 1 (N=25)	Section 2 (N=26)	Overall (N=51)
Gender (f)	Male	22	13	35
	Female	3	13	16
Age (avg.)		22.92	22.85	22.88
GPA (f)	Less than 2,0	1	0	1
	Between 2,0 and 2,49	10	2	12
	Between 2,50 and 2,99	7	13	20
	Between 3,0 and 3,49	5	9	14
	Higher than 3,5	2	2	4
Registration Status (f)	Only registered to CEIT	24	24	48
	Also a collateral student in another program	1	2	3
High School (f)	Industrial vocational high school	2	2	4
	Technical High School	2	0	2
	Anatolian Technical High School	6	5	11
	Anatolian Vocational High School	9	13	22
	Anatolian High School	2	4	6
	Military High School	1	0	1
	Multi-program High School	0	1	1
	General High School	3	1	4
	High school department (f)	Computer	6	12
Computer – Software	5	6	11	
Computer – Hardware	8	3	11	
Science – Mathematics	6	5	11	

The attitudes of the students towards the department of CEIT, its program and the teaching profession were also surveyed (see Table 3.2). Regarding the purpose of selecting the CEIT department, almost half of the students (n=22) explained that they had to choose this department due to restrictions of YÖK. A student from the second section (S29) expressed this situation strikingly as: “I did not come to attend CEIT program eagerly. I

Table 3.2 Subjects' Attitudes towards the Teaching Profession and the Department of CEIT

		Section 1	Section 2	All the Sample	N
Why did you choose the department of CEIT?	In order to be a teacher	3	9	12	59*
	To gain expertise in computer hardware and software	8	6	14	
	Because of my ÖSS points	2	4	6	
	Other reasons	15	12	27	
What was your attitude towards the teaching profession at the beginning of the CEIT program?	Positive	7	11	18	51
	Negative	7	5	12	
	Neutral	11	10	21	
Has there occurred any change in your attitude towards the teaching profession during your time in the CEIT program?	A change in positive direction	9	13	22	51
	A change in negative direction	4	5	9	
	No change	12	8	20	
Are there any teachers among your close relatives?	Yes	9	5	14	50
	No	16	20	36	
Do you plan to be a teacher after you graduate?	Yes	9	10	19	51
	No	16	16	32	
If you do not want to be a teacher, what do you plan to do after graduation?	Attend a post graduation program	5	11	16	56*
	Work in the field of education in the informatics sector (education planning and development etc.)	6	9	15	
	Work in the field of hardware/software in the informatics sector – not in the field of education.	10	9	19	
	Other reasons	1	5	6	

* Some students marked more than one choice for these items; these students' all choices were included. Thus, N is larger than the sample size.

could not think of any other program since CEIT was the only option that I have the right to attend". Almost a quarter of students (n=12) stated that they chose this program since they wanted to be teachers, while some students (n=14) reported that they chose this department in order to specialize in computer software and hardware. A student in the first section explained why s/he did not want to be a teacher as follows,

I think that the teaching profession is a very low goal for a METU student. If I wanted to be a teacher, I would not have prepared the university entrance exam again to enter [CEIT programs in] ODTU and Boğaziçi University after I had got enough points to enter [the CEIT program] in Ege University. A few students (one or two) come to METU to become teachers (S26).

When they were asked about their attitudes toward teaching profession at the beginning of the CEIT program, the majority of the students said they were either neutral or negative, while around one third of them had positive attitudes. These attitudes are directly related to the reasons for choosing the program. The majority of them selected CEIT since it was the most plausible option due to the type of high school they had attended, and due to restrictions coming from their University Entrance Exam (ÖSS) results. A student explained this link as follow, "I guess that the students who do not eagerly attend the [CEIT] program, such as me, will not become teachers, rather, they will earn their life in other professions after graduation." (S27). Another student stated that "Teaching is an ideal profession for women, but I never wanted to be a teacher at all" (S28).

A majority of the students did not have any close relatives who are teachers (n=36). The number of students who planned to work as teachers (n=19) is smaller than those who did not (n=32). If they did not want to be teachers, they were asked what they planned to do after graduation. Working in the field of hardware/software in the informatics sector – not in the field of education (n= 19), attending a post graduation program (n=16), and work in the field of education in the informatics sector (n=15) were the most preferred options.

Students' initial opinions about instructional planning were gathered through an open-ended item in the pretest, as well. Since the students were senior, their comments indicated that they already had a basic knowledge of instructional planning.

3.3.1 The Subjects for the First Phase of the Study

In the first phase of the study, the cognitive tools for instructional planning were presented to the two sections in different orders. Thus, the questionnaires for the tools were administered to the two sections after intervention of the related tool. Attempts were made to reach all students. Students were motivated to take the quizzes with three bonus points for each quiz. The target and reached subjects for the first phase of the study are given in Table 3.3.

The listwise deletion method was applied for the statistical analyses of the first phase of the study. The students who filled in the self-efficacy and perceived instrumentality items regarding lesson planning in the questionnaires, and who filled in both questionnaires after IPSRT and CPSRT were selected, and the others were deleted. For those 38 students, outlier and extreme cases were detected through the box plot in Statistical Package for the Social Sciences (SPSS). Five cases were deleted: three outliers (S19, 22, 48) for initial self-efficacy, two outliers for self-efficacy after intervention of CPSRT (S19, 36), and three extreme cases for self-efficacy after the intervention of IPSRT (S19, 20, 22). In order to equalize the section sizes, one more case was randomly deleted from Section 1, with the help of SPSS 13.0. Finally, 16 students from each section were analyzed for the research questions 1.2 and 1.3.

Table 3.3 Target and Reached Subjects for the First Phase of the Study

	Section 1 (N)	Section 2 (N)	Total (N)
Target sample	30*	21*	51
Demographics questionnaire	30	21	51
The questionnaire after CPSRT	29	20	49
The questionnaire after IPSRT	26	17	43
Students who have taken both IPSRT quiz and CPSRT quizzes	19	17	36

*Due to 5 students in Section 2 whose schedule mismatched with the class hour, the number of students in Section 1 increased and Section 2 decreased for the first phase of the study.

Regarding the necessary sample size for within-group designs, Maxwell and Delaney (1990, p. 602-605) suggest as a rough rule of thumb that the multivariate approach should probably not be used if n (number of subjects per group) is less than “ $a+10$ ” (a is number of levels for repeated measures) (as cited in Stevens, 2002, p. 509). In the present study, the number of levels is at most three and subjects in each section are more than 13. Consequently, the group sizes are large enough for interpreting multivariate options in mixed-design ANOVAs, each of which were run for self-efficacy and perceived instrumentality for lesson planning.

3.3.2 Interviewees

From the sixteen purposive sampling techniques proposed by Patton (1990), maximum variation sampling was used to select the interviewees from the 33 volunteer

interviewees, because maximum variation sampling is particularly used in order to capture and describe the central themes, or principal outcomes that cut across a great deal of participants. By including the individuals who have had different experiences, the researcher not only understands the variation in the group, but also explores core elements and shared outcomes (Patton, 1990). In order to maximize variation in the sample, Patton advises the researcher to identify diverse characteristics or criteria for selecting the sample. However, he warns the researcher that the findings should not be generalized to all those sharing the same conditions as the participants; rather the particular information that illustrates programmatic variation and important common patterns within that variation should be sought (p. 172).

In order to provide maximum variation, section, group (generally consists of three students who perform microteaching in the same class hour and from the same unit), gender, type of high school, and their GPA and grades from the course were selected as criteria. An equal number of interviewees were selected from each section. All the recordings of the 33 interviews were listened to, and notes were taken select the most informative and reflective student from each group in the sections. As seen in Table 3.4, one participant was selected from each group, except for groups 5 and 8 in Section 1, and group 9 in Section 2. Since no student from these groups participated to the interview, the second student in group 7 was selected; this student had similar characteristics with those groups. Each interviewee was given an identity code (or nick name). Table 3.5 illustrates the distribution of the participants and interviewees regarding the other selection criteria; these criteria were adhered to as much as possible in order to maximize variation in the collected data. It should be noted that the proportion of the subjects and the interviewees for gender, high school type, GPA, and grade are close to each other.

3.3.3 The participants of the third phase of the study (follow-up)

For the third phase of the study, the participants were 12 interviewed students whose field teaching lesson plans and field teaching assessments with the Microteaching Assessment Form (MAF) could be obtained from the teaching assistants. The identification codes of these participants were S2, S9, S10, S12, S21, S24, S27, S41, S43, S44, S46 and S47. Their section and group could be seen in Table 3.4.

Table 3.4 The Identity Codes of the Interviewees and their Distribution into Sections and Groups

Groups	Section 1	Section 2
Group 1	S24	S46
Group 2	S10	S21
Group 3	S12	S40
Group 4	S28	S47
Group 5	-	S44
Group 6	S2	S43
Group 7	S48	S41
Group 8	S27*	S9
Group 9	No more groups	-

* This student is actually in group 7, but he represents similar characteristics with the students in groups from which there were no participants to interview.

In order to see the real effects of the tools and microteaching activities on field teaching, preservice teachers were not informed that the researcher would analyze their field teaching planning and field teaching assessment forms.

Table 3.5 Distribution of the Subjects and Interviewees regarding the Selection Criteria

		The participants		Interviewees	
		<i>f</i>	%	<i>f</i>	%
Gender	Male	35	69	9	60
	Female	16	31	6	40
High School Type	VET	40	78	10	66.7
	Non-VET	11	22	5	33.3
GPA	Less than 2.0	1	2	1	6.7
	Between 2.0 and 2.49	12	23.5	3	20
	Between 2,5 and 2.99	20	39.2	7	46.7
	Between 3.0 and 3.49	14	27.5	4	26.7
	Above 3.5	4	7.8	1	6.7
Grade	AA	35	69	11	73.3
	BA	6	12	2	13.3
	BB	2	4	1	6.7
	CB	4	8	1	6.7
	CC	2	4	1	6.7
	DC	-	-	-	-
	DD	1	2	-	-
	I	1	2	-	-

3.4 Treatment Instruments

The treatment instruments used in the current study are explained under separate titles below. Firstly, the treatment instruments regarding the cognitive tools for instructional planning are explained. These are the cognitive tools (IPSRT, CPSRT), the sample lesson plans, and the cases for in-class activities, assignments and quizzes. Secondly, all the treatment instruments for the microteaching activities are described, namely, the Microteaching Planning Guide, Microteaching Assessment Form, Microteaching Self-Assessment Form, and Self-Reflection Assignment.

3.4.1 Treatment Instruments regarding the cognitive tools for instructional planning

3.4.1.1 Instructional Planning Self-reflective Tool (IPSRT)

The IPSRT is one of the main treatment instruments of the first phase of the study. This tool was developed by Baylor, Kitsantas, and Chung (2001) on the basis of research on self-regulated learning (Zimmerman, 2000) and the Reiser and Dick (1996) instructional planning model. It was designed to facilitate *self-monitoring* and *self-evaluation* during instructional planning (Baylor & Kitsantas, 2005). It has the following parts, whose selection was based on the Reiser and Dick (1996) model: instructional goal, objectives, materials/preparation, learner characteristics, procedure and assessment. The IPSRT consists of multiple prompt questions under each subheading, as seen in Appendix B1.

3.4.1.2 Constructivist Planning Self-reflective Tool (CPSRT)

The CPSRT is the other main instrument of the first phase of the study. It was developed by Kitsantas, Baylor and Hu (2001), based on self-regulation research (Zimmerman, 2000) and constructivist theories of instruction (e.g., Jonassen, 1999; Mayer, 1999). It was designed to facilitate *self-monitoring*, *self-evaluation*, and *cognitive flexibility* (Baylor & Kitsantas, 2005) during instructional planning. It has three parts -before, during and after- with the consideration that implementing and assessing a constructivist plan involve looking into these phases. The before phase includes instructional purpose and definition of learning activities – both required and desirable characteristics of these activities. The “during” phase involves information about the role of the students and the role of the instructor throughout the learning activities. The after phase focuses on the specification of assessment. Similar to the IPSRT, the CPSRT asks multiple prompt questions under each subheading, as seen in Appendix B2.

In brief, these tools were designed to guide and improve the thinking processes of preservice teachers and to enhance self-regulation and metacognitive awareness during

instructional planning process, to help them in understanding the complexity and comprehensiveness of the instructional planning process (Baylor, Kitsantas & Chung, 2001; Kitsantas, Baylor & Hu, 2001; Kitsantas & Baylor, 2005). The authors' copyright to these tools is hereby acknowledged.

3.4.1.3 The Cases for In-class (group and individual) Activities and Quizzes

The first phase of the study focuses on improving instructional planning skills with the cognitive tools. Therefore, the cases were actually instructional goals for which one is supposed to plan a lesson using the related tool. All the cases, or instructional goals, used in introducing the IPSRT and CPSRT were selected from the computer education curriculum (MONE, 2006). More specifically, instructional goals particularly convenient to traditional (e.g. instructivist) planning were selected for planning with IPSRT and the goals appropriate for constructivist planning were selected for planning with CPSRT. The cases for the exemplar plans, in-class activities and quizzes were chosen in the same manner. These cases can be seen in Appendix D. The sections planned lessons for different cases for the quiz of each tool, because they could not take these quizzes synchronously.

3.4.1.4 The Sample Plans with IPSRT and CPSRT

In order to illustrate a model for the end product using IPSRT and CPSRT, the researcher developed two sample lesson plans, one with IPSRT and the other with CPSRT, which are given in Appendix C. These plans were delivered with the related cognitive tools during the interventions.

3.4.2 Treatment Instruments regarding the Microteaching activities

3.4.2.1 Microteaching Planning Guide (MPG)

This planning guide was developed by the researcher on the basis of the MONE lesson plan format for computer courses, which is proposed for the computer education curriculum for 1st-8th grades (MONE, 2006, p. 19). Rather than directly having students use IPSRT or CPSRT during their microteaching plans, this format was preferred and developed so that students could get used to planning within the format that they were expected to use when they teach at schools. It is more detailed than the format offered in that official curriculum document. The MPG has the following subheadings, as can be seen in Appendix G: directions (including what to consider in terms of methods, and what the role of IPSRT and CPSRT in the planning will be), preparation, entrance, core activities, assessment and closure, and references.

Three research assistants who were doctoral students and a faculty member who was an expert in instructional technology examined and made suggestions for the improvement of the MPG. After making necessary revisions, the expert examined and approved this planning guide before it was distributed to students.

3.4.2.2 Microteaching Assessment Form (MAF)

A microteaching assessment form was designed by the researcher considering the content of the IPSRT, CPSRT and the MPG as well as the environment and the conditions in which the microteaching would be performed. It was developed particularly for peers to help them formatively assess microteaching performance and give corrective feedback in written form. The researcher and the teaching assistants also used this form for feedback and assessment.

The MAF is shown in Appendix H. It has three main parts: a rating part and a comments part next to the ratings part on the front, and two open-ended questions on the back. The rating part, which has 18 Likert scaled items in total, is an evaluation tool in grid. It lists the criteria for teaching performance, and articulates gradations of quality for each criterion. It has four main parts: entrance to the course, the core activities, the closure and assessment, and general. A comments part is provided to the right of the rating part for comments, criticism and recommendations. On the back of the form there are two open-ended questions asking for the two strongest and the two weakest aspects of the microteaching performance with reasons for the choice of strongest aspects and explanations for how the weakest aspects can be improved. This open-ended part was adapted from the Microteaching Evaluation Form developed by Subramaniam (2006).

3.4.2.3 Microteaching Self-Assessment Form

A microteaching self-assessment form was developed by the researcher. It is actually a version of the MAF, in which the statements are transformed so that it can be used to evaluate one's own microteaching performance. It is shown in Appendix I.

3.4.2.4 Self-Reflection Assignment

A self-reflection assignment was developed by the researcher in order to guide students how to reflect on their microteaching planning process and experience of microteaching performance. Subramaniam's (2006) microteaching self-review essay format and Vidmar's (2006) questions for collaborative peer coaching were adapted in designing the microteaching self-reflection assignment used in the current study. The proposed criteria in these two studies were included in the self-reflection assignment of the present study. This

assignment provides reflection-on-action since it is done after the microteaching planning process and performance. The self-reflection assignment is shown in Appendix J.

The self-reflection assignment has three parts. The first part aims to make students think of the microteaching planning process with tutoring by the researcher in terms of the development of a microteaching plan and with the contributions of this process to their instructional planning knowledge and skills.

The second part was designed to guide students in how to reflect on their microteaching performance. It has two subparts. One is preparation for a self-reflection essay. The students were asked to observe their own microteaching performance and fill in the microteaching self-assessment form. Then, students were guided in how to analyze the ratings in the rating parts by means of a worksheet. They entered all the ratings in the rating part of the forms onto a worksheet designed by the researcher. The worksheet not only calculates an average score for each criterion and by each evaluator, but also automatically represents the results for all criteria on a graph. In this way, students see the strong and weak sides of their microteaching performances indicated by the ratings. Finally, students were guided in how to make a content analysis-based on frequency analysis- of the explanations in the comments part and of the open ended-questions on the back of the microteaching assessment forms. They were expected to write the analysis results regarding their strong and weak sides and the suggestions parts, in the template titled “Microteaching Feedbacks and Your Responses” (given in appendix 1 of the assessment). Then, students were asked to write their responses to all the feedback and suggestions, by observing their video again if necessary. The second subpart guided students in how to write a microteaching self-reflection essay. It was suggested that the students use the analysis of the assessment forms to decide on three strong and weak sides of their microteaching performances. The feedback on the assessment forms was aimed to enhance the content of the self-reflection essays. In the essay, they combine the strong and weak sides of their microteaching performance with the major theories of instruction. In appendix 2 of the assignment, they were provided with a theoretical framework, which had been developed in EDS 544 course. Additionally, in appendix 3, a list of major teaching and learning theories, which also includes hyperlinks to some resources on the Internet, was provided.

The final part consists of the three appendices mentioned above: “Microteaching Feedbacks and Your Responses”, a theoretical framework titled “Basic Features of Theories of Instruction”, and a list of major specific teaching and learning theories. As Subramaniam (2006) suggested, preservice teachers need analytic frameworks to make connections between theory and practice. Thus, the last two appendices were added to help students connect their practice with the major theories of instruction.

3.5 Data Collection/Measuring Instruments

Data collection or measuring instruments were used to collect data to answer the research questions. These instruments are questionnaires: a demographics questionnaire and questionnaires administered after using IPSRT and CPSRT, rubrics for assessing plans with IPSRT or CPSRT and a semi-structured interview guide. These instruments are explained in this section.

3.5.1 The Questionnaires

Three questionnaires were administered to students in the within-group design. One of them was administered at the beginning of the intervention and the others were administered after the intervention of each tool. The content of these questionnaires are described below, respectively.

3.5.1.1 Demographics Questionnaire

The demographics questionnaire has three main parts as seen in Appendix A. The first two parts were developed by the researcher. The first part measures students' demographic information, such as age, GPA, and type and department of high school attended. In the second part, there are questions regarding the students' attitudes toward the teaching profession and the department of CEIT program. They are asked why they chose to be a student in the department of CEIT at METU, what was their attitude towards teaching at the beginning of the program, whether it has changed positively or negatively, whether there are any teachers among their close relatives, and what they plan to do after graduation.

The last part aimed to measure the students' initial self-efficacy beliefs and perceived instrumentality regarding instructional planning, using some scales, as mentioned below.

Self-efficacy regarding instructional planning: Students' self-efficacy for instructional planning to be used in the classroom was measured with one item which asks students to rate "to what extent they are sure that they can write a lesson plan?" from 10 to 100; this is a question which was used by Kitsantas & Baylor (2001). They reported its test-retest reliability as $r=.71$ ($p<.01$).

The instrumentality of instructional planning: Students' perceived instrumentality of instructional planning to be used in the classroom was also asked with a multiple choice question, which asked "how important is it for you to write a lesson plan?". Its choices range from "not important at all" to "extremely important", and this item was developed by Kitsantas and Baylor (2001). They did not report its test-retest reliability. When the correlation between the perceived instrumentality scores that were measured after the

CPSRT treatment and IPSRT treatment are concerned in the current study, it was .46 ($p < .01$).

In this part, the disposition towards instructional planning was also measured with an item that was used by Kitsantas and Baylor (2001). This item requests students to write two adjectives that describe instructional planning according to them. But this data were not analyzed due to its misinterpretation by the students or due to a translation problem.

3.5.1.2 The Questionnaires Administered after the IPSRT and CPSRT

Each of these questionnaires was designed to collect data about perceived tool value and to measure any possible change in self-efficacy and perceived instrumentality regarding instructional planning at the end of that cognitive tool's intervention, as seen in Appendix E. In these questionnaires, the items were asked both in Turkish and in English due to the fact that the language of instruction is English at METU, and thus students are used to English terminology rather than Turkish. In addition, there were two international students in the sample. In this way, the items would be understood well by all the participants.

These questionnaires have two parts. The first part aims to measure to what extent the students appreciate the introduced tool. Students were expected to rate their feelings about the tool in terms of helpfulness, ease of use, interestingness, flexibility and recommendation of tool to a friend (from 1 to 5 for helpfulness, from 1 to 4 for the other value indicators). These items were taken from Baylor and Kitsantas (2005). Since the metacognitive merits of using these tools have been identified by Baylor and Kitsantas (2005) as self-monitoring, self-evaluation and cognitive flexibility, students were given these metacognitive merits and were asked to check whether they feel these merits when they use the related tool, as well. In addition, students were asked to list the benefits of using that tool during the lesson planning process.

The second part aimed to measure the students' self-efficacy and perceived instrumentality regarding instructional planning through items adapted from Kitsantas and Baylor (2001). These items are exactly the same with those in the last part of the demographics questionnaire.

3.5.2 Rubrics for Assessing Lesson Plans with IPSRT and CPSRT

The extent of preservice teachers' following tools during the lesson planning process was determined through analyzing quizzes (lesson plans which they developed with help of IPSRT or CPSRT at hand). Two rubrics were developed to analyze the quizzes, having items parallel to the prompted questions in the related tool, one for IPSRT and the other for CPSRT. Almost all the prompted questions in the tools were transformed into statements.

These statements were used to check whether that question was taken into consideration by the student in lesson planning or not.

The IPSRT rubric has 27 items, each of which has yes and no options. The CPSRT rubric has 39 items, each of which has yes, no and not applicable options. In analyzing plans developed with the CPSRT, if any of the items in the CPSRT rubric was not appropriate to the instructional goal, the learners, or the learning activities, then the researcher assigned “not applicable” to such items. These rubrics are seen in Appendix F.

3.5.3 Semi-Structured Interview Guide

Different dimensions of microteaching model such as tutoring (in preparing microteaching), performing microteaching, formatively assessing peers and being assessed by peers and instructor/research assistants, and the way of reflecting on their own microteaching performances, were investigated through semi-structured interviews. Students’ perceptions of the cognitive tools for instructional planning were also investigated during the interviews.

The semi-structured interview guide was used during the one-to-one interviews. It was developed throughout two pilot studies. In the first pilot study, two unstructured interviews about the dimensions of microteaching and the cognitive tools were conducted. Then, the first version of the semi-structured interview schedule, seen in Appendix K1 was developed, based on the research questions and the results of the first pilot study. The questions were amended considering the properties of a good interview question as suggested by Yıldırım and Şimşek (2000). The questions were specified and clarified as much as possible to increase their validity. The opinions of three experts -two of them being experts in instructional technology, two of them being experts in qualitative research methods, and all of them being experts on teacher education- were consulted to enhance the validity of the interview guide. They examined and approved the instrument. In the second pilot study, three students were interviewed with the first version of the semi-structured interview guide. The interview guide was then modified again based on these interviews and one expert’s comments. As a result, the second version of semi-structured interview guide to be used in the interviews was developed, seen in Appendix K2.

There are major differences between the first and the second version of the interview guides. Four questions were added to the second version. These are as follow: the fourth question concerning the positive and negative effects of forming groups; the eighth question about the selection of a microteaching subject from the computer course curriculum; the tenth question asking how the participant usually filled in the MAF; the twenty fourth question asking how the participant will prepare the field teaching- this question was asked

only if the participant mentioned that he/she would use the instruments or tools introduced in this course for his/her field teaching planning. The thirteenth question in the first version was added as a prompt to the seventh question in the second version. In addition, some changes were made in the prompts of the questions to make them clearer. Some of the prompts were moved and some of them were deleted. The changes can be tracked by examining the first version and the second version of the interview guide in Appendix K.

At the beginning of each interview, students were given some of their assignments in order to facilitate recollection of the processes they have gone through during the course. Regarding microteaching, it was decided to give the participants their self-reflection assignment before the interview, because, this assignment includes questions asking students to compare and contrast all the drafts of the microteaching plan. It also includes an analysis of feedback from peers and teaching staff, and the interviewee's responses to the positive and negative feedbacks. Furthermore, they could also reread their self-reflection essay. Thus, they could easily recall what they did and thought throughout the microteaching part of the course by examining the self-reflection assignment rather than dealing with too many hard copies of the same plan. On the other hand, in order to remind students of how they use the cognitive tools for instructional planning and how they felt about them, the interviewee students' lesson plans that they had designed with each tool as individual in-class activity, and both tools, were given before asking questions about them. This was also important because without seeing the tools and any product using those tools, it would have been hard for them to remember the contributions and challenges that the tools presented to the instructional planning process.

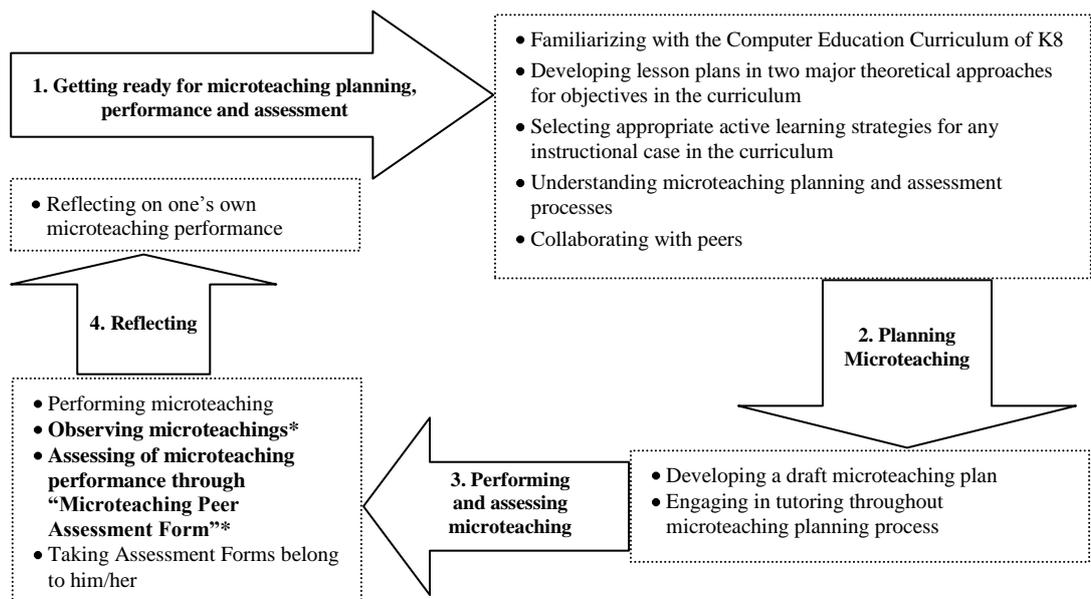
3.6 Course Design and Procedure

The overall course design was considered the Microteaching Model used throughout the course, as illustrated in Figure 3.1. This model was developed by the researcher. It consists of four phases: (1) getting ready for microteaching planning, performance and assessment, (2) planning microteaching, (3) performing or assessing microteaching, (4) reflecting on microteaching planning and performance. These phases of the microteaching model are given in Table 3.6 in more detail. The first phase, getting ready for microteaching planning, performance and assessment, aims to familiarize students with the curriculum, to improve lesson planning skills by means of practice with the cognitive tools with tutoring, to introduce them active learning strategies, to introduce microteaching planning and assessment processes, and to promote collaboration among students through grouping them. The second phase of the model, microteaching planning process involves developing a draft microteaching plan and improvement of it through tutoring provided by the researcher. The

third phase is performing microteaching in class hour and being observed and assessed by others. The final phase is comprises reflecting on one’s own microteaching performance. It should be noted that before this study was conducted, its design was approved by the Graduate School of Natural and Applied Sciences of METU.

3.6.1 Procedure of the Intervention of the Cognitive Tools

The first phase of the present study, that is, the intervention of IPSRT and CPSRT to the sections, was conducted within the first phase of the microteaching model. The data collection procedure for this phase of the study is given in Table 3.7. At the beginning of the semester, the students were informed about the research, its purpose and what to do during the interventions. Thus, they were aware that they were subjects of the current study. Since the sections used both tools and no control group existed, no ethical issue stemming from a control group aroused. Since the sections used both tools and no control group existed, no ethical issue stemming from a control group aroused. The tools were introduced to the sections in different orders, but the identical instructional materials were used in both sections for each tool (identical PowerPoint presentations, sample lesson plans, group and individual in-class activities), as given in Table 3.7. After the intervention of the tools, the groups took two quizzes, one for each tool, asking students to make a lesson plan with the help of specified tool. In order to increase participation in the quizzes, the students were told that they would be given extra three points in their term grades for each quiz.



* These tasks are done by peers who do not perform microteaching in that session.

Figure 3.1 Microteaching Model Used in the Current Study

Table 3.6 The Phases of the Microteaching Model in the Current Study

Phases	Objectives	Teaching and Learning Activities, and Assignments
Getting students ready for microteaching planning, performance and assessment	To familiarize with Computer Education Curriculum for K-8	<ul style="list-style-type: none"> • Reading the curriculum • Reflection on the curriculum by answering prompted questions • Discussion of curriculum in the class hour
	To develop lesson plans in two major theoretical approaches for objectives in the curriculum	<ul style="list-style-type: none"> • Modeling to plan instruction in instructivist and constructivist approach • Providing group and individual lesson planning practice • Using the cognitive tools for instructional planning during self-regulated practice • Tutoring throughout the planning process (oral and written feedbacks) • Quizzing students on planning instruction with both cognitive tools for self-regulation
	To select appropriate active learning strategies for any instructional case in the curriculum	<ul style="list-style-type: none"> • Skimming and scanning active learning strategies book • Giving instruction on active learning strategies in the classroom with PowerPoint slides • Selecting three appropriate active learning strategies for computer education and explaining the reasons why they are appropriate
	To understand microteaching planning and assessment processes	<ul style="list-style-type: none"> • Clarifying the goal of microteaching performances • Giving instruction on how to plan microteaching with the MPG • Explaining the tutoring process throughout microteaching planning • Giving instruction on how to assess their peers and to give corrective feedback through the MAF • Informing students on the self-reflection assignment regarding their own microteaching • Informing how the microteaching would be graded
	To promote collaboration among students through grouping them	<ul style="list-style-type: none"> • The students were grouped into (mostly) three to select a unit from the curriculum (17 groups in total). • Each group prepared a unit plan for that unit collaboratively. • Each member in a group selected an instructional goal for one's own microteaching from the same unit (except for two groups). • Members in a group tried to design their microteachings in a reasonable sequence
Planning microteaching process	Developing a draft microteaching plan	<ul style="list-style-type: none"> • Using the MPG • Collaborating with group members for lesson planning.
	One-to-one tutoring throughout microteaching planning process	<ul style="list-style-type: none"> • Establishing a dialogue between the instructor and each student on the microteaching plan. • Taking usually two written and one oral feedback on microteaching plans (amount and frequency of feedbacks were flexible according to students' needs).
Performing microteaching and assessment	Performing microteaching	<ul style="list-style-type: none"> • Performing a 20-minute microteaching by each member in one group during seven weeks in both sections. • Recording the microteaching performance.
	Observing microteaching	<ul style="list-style-type: none"> • Being observed by instructor, teaching assistants and peers in the same section • Being observed by peers in the other section through video in recitations
	Assessment of microteaching performance through the MAF	<ul style="list-style-type: none"> • Being assessed by the instructor and teaching assistants • Being assessed by one third of peers in the same section and those in the other section
	Giving the MAFs to performers	<ul style="list-style-type: none"> • Copying and giving all the MAFs to performers after having removed ID number of peers
Reflection	Reflecting on one's own microteaching performance	<ul style="list-style-type: none"> • Observing one's own microteaching video • Filling in a "Microteaching Self-Assessment Form" • Analyzing all the MAFs: rating part and corrective feedbacks, and responding to feedbacks • Selecting three strong and weak points in one's own microteaching performance and explaining them in relation to teaching and learning theories. • Reflecting on the lessons learned, gained insights from one's own microteaching experience.

Note: The last three phases colored in gray are called "microteaching activities".

Table 3.7 Introduction of IPSRT and CPSRT to the Sections

Week		Section 1	Section 2
1 st	C	First meeting: Introduction to the course, Qualities of a teacher	
2 nd	C	Discussion of the Computer Education Curriculum for 1 st -8 th Grades (MONE, 2006) Demographics questionnaire was administered.	
3 rd	C	TREATMENT OF THE CPSRT Introduction to the CPSRT PowerPoint presentation, the CPSRT, & sample plan with CPSRT (Appendix C2)	TREATMENT OF THE IPSRT Introduction to the IPSRT PowerPoint presentation, the IPSRT, & sample plan with IPSRT - Appendix C1)
	R	In-class activity- Developing lesson plan with CPSRT - group work. The instructor provided feedback when needed by students. (See all the cases used to introduce CPSRT in Appendix D2)	In-class activity- Developing lesson plan with IPSRT - group work. The instructor provided feedback when needed by students. (See all the cases used to introduce IPSRT in Appendix D1)
4 th	C	In-class activity- Developing a lesson plan with CPSRT- individual work. The instructor provided feedback when needed by students.	In-class activity- Developing a lesson plan with IPSRT- individual work. The instructor provided feedback when needed by students.
		Questionnaire after CPSRT (Appendix E2) Students' Perceptions of CPSRT and instructional planning	Questionnaire after IPSRT (Appendix E1) Students' Perceptions of IPSRT and instructional planning
	R	TREATMENT OF THE IPSRT Introduction to the IPSRT PowerPoint presentation, the IPSRT, & sample plan with IPSRT - Appendix C1)	TREATMENT OF THE CPSRT Introduction to the CPSRT PowerPoint presentation, the CPSRT, & sample plan with CPSRT (Appendix C2)
		In-class activity- Developing lesson plan with IPSRT - group work. The instructor provided feedback when needed by students. (See all the cases used to introduce IPSRT in Appendix D1)	In-class activity- Developing lesson plan with CPSRT - group work. The instructor provided feedback when needed by students. (See all the cases used to introduce CPSRT in Appendix D2)
5 th	C	In-class activity- Developing a lesson plan with IPSRT- individual work. The instructor provided feedback when needed by students.	In-class activity- Developing a lesson plan with CPSRT- individual work. The instructor provided feedback when needed by students.
		Questionnaire after IPSRT (Appendix E1) Students' Perceptions of IPSRT and instructional planning	Questionnaire after CPSRT (Appendix E2) Students' Perceptions of CPSRT and instructional planning
	R	IPSRT Quiz Developing lesson plan with IPSRT- individual work. The instructor provided no feedback.	CPSRT Quiz Developing lesson plan with CPSRT- individual work. The instructor provided no feedback.
6 th	R	CPSRT Quiz Developing lesson plan with CPSRT- individual work. The instructor provided no feedback.	IPSRT Quiz Developing lesson plan with IPSRT- individual work. The instructor provided no feedback.

C: Class hour, R: Recitation hour

The first phase of the study has a within-group design. Stevens mentions two advantages and two problems of within-group designs. Reducing error variance (within-group or cell) and requiring far fewer subjects are the advantages. Firstly, within-group variability stems from the individual differences among the subjects. Statistical ways of reduction of error variance are using analysis of covariance, and blocking subjects into more homogeneous groups than randomly assigning them to treatments. In within-group designs, blocking is carried to its extreme, since each subject is blocked uniquely. Therefore, the variability among the subjects due to individual differences is totally removed from the error term.

Secondly, this analysis requires far fewer subjects than between-subjects designs. On the other hand, when several treatments are involved, the order in which treatments are administered might make a difference to the subjects' performance. Thus, it is important to eliminate the order effect by counterbalancing the order of treatments. For two treatments, this would involve randomly assigning half of the subjects to receive the treatment A first, and the other half to receive treatment B first. Such a design is balanced because an equal number of subjects receive each treatment in each position. The second problem is that not allowing sufficient time before a treatment can lead to carryover effects (Stevens, 2002, pp. 492-493). In the present study, for the first problem, the order of tool presentation was counterbalanced. According to Stevens (2002), the second problem is not a serious threat in this study. Table 3.8 shows two-treatment counterbalanced designs for the variables investigated with quantitative methods in this phase. The treatment does not consist of only introducing the tool. Rather, it involves introducing the tool with two-hour instruction, giving the tool and a model plan developed with the related tool, group and individual in-class activities, and tutoring (written and/or oral feedback) by the instructor.

Table 3.8 Two-treatment Counterbalanced Design to Measure the Effects of Tools on Self-efficacy and Perceived Instrumentality regarding Instructional Planning

Self-efficacy &	Section 1	O	T ₁	O	T ₂	O
Perceived instrumentality	Section 2	O	T ₂	O	T ₁	O

O: Observation

T₁: Treatment of the CPSRT, including introduction of the CPSRT, giving a model plan developed with the CPSRT, group and individual in-class activities, and tutoring (written and/or oral feedback) by the instructor

T₂: Treatment of the IPSRT, including introduction of the IPSRT, giving a model plan developed with the IPSRT, group and individual in-class activities, and tutoring (written and/or oral feedback) by the instructor

3.6.2 Procedure of the Microteaching Activities

In the second phase, preservice teachers who had prepared for microteaching in the prior phase engaged in planning and performing microteaching, reflecting on their own performance and observing or assessing their peers' microteaching sessions. The phases of the microteaching model in the current study are already given in Table 3.6. The last three phases of the model are called "microteaching activities". A detailed description of microteaching activities whose implementation took eight weeks is described in Table 3.9. The model is explained in detail below.

For this phase of the study, the students were divided into 15 three-member groups – additionally there was one group with four members and another with two. The groups were formed according to the students' own preferences. The groups were asked to select a unit from the computer education curriculum (MONE, 2006). Then, each member selected a learning outcome to plan a 20-minute microteaching session from the selected unit. Except for two groups, all the groups agreed on a unit.

Each student could make only one 20-minute microteaching session, because of limited resources in terms of time, human resources and place, against a large number of students who took the course. However, over seven weeks, preservice teachers observed, assessed and gave feedback to their peers' microteaching performances. More specifically, each participant of this study experienced the role of microteaching performer (once), as illustrated in Figure 3.2, and he/she was in the role of assessor by using the MAF (16 times: assessing 8 peers in the same section in the class hour, and 8 peers in the other section from video in the recitation hour), and the role of observer without any assessment (32 times: observing 16 peers in the same section in the class hour, 16 peers in the other section from the video in the recitation hour), as shown in Figure 3.3. They prepared a self-reflection assignment about their microteaching by using assessment forms that were filled in by the instructor, teaching assistants and peers. In fact, one of the ultimate aims of this research was to propose an applicable microteaching model for the common situation in Turkish universities of insufficient number of teaching staff and large number of students at STEs.

The researcher believes that good teaching practice depends largely on good planning, both mentally and in written form. Therefore, what is unique in her model is that she gave particular importance to help preservice teachers in their microteaching planning process through tutoring. This approach was applied to help preservice teachers develop a 20-minute microteaching plan before the microteaching episode for the specified learning outcomes from the unit. According to the tutoring used in this study, each preservice teacher

Table 3.9 Description of the Microteaching Activities

Week	Both Sections
6-7th	Active learning strategies were presented.
8th	<p>Orientation to Microteaching Activities:</p> <ol style="list-style-type: none"> 1. The MPG (Appendix G) and the MAF (Appendix H) were introduced to the sections 2. Students were grouped in two to four (but mostly in three). 3. Each group selected a unit from the Computer Education Curriculum for 1-8th grades published by MONE so that they prepare microteaching plan within that unit.
	<p>Tutoring is conducted in microteaching planning process:</p> <ol style="list-style-type: none"> 4. In seven successive weeks, each student prepared a 20-minute microteaching plan before 1-2 weeks of microteaching to be performed based on the MPG. 5. The tutoring includes the researcher to provide at least one oral and two written feedback for each student. By doing so, she aimed to enhance preservice teachers' instructional planning skills.
9-15th	<p>During microteaching sessions:</p> <ol style="list-style-type: none"> 6. At presentation date, student became more self-confident since he/she had worked sufficiently on his/her plan. In the electronic classroom, each student performed microteaching individually for his/her four to six peers acting as pupils. 7. The researcher, teaching assistant of the section and some peers randomly selected by the researcher formatively evaluated the presenter via the MAF during or just after the microteaching episode. The microteaching sessions were recorded with one video camera. 8. The peers who did not assess that microteaching episode using the form just observed it silently. <p>After microteaching sessions:</p> <ol style="list-style-type: none"> 9. Students submitted their microteaching video CD within four days 10. In the recitation hour of the other section, student's microteaching video was observed. It was assessed by the teaching assistant of that section and some students (one third of the section) who were (generally) randomly selected. <p>Doing self-reflection assignment:</p> <ol style="list-style-type: none"> 11. The student get photocopies of all the MAFs for his/her microteaching performance (It should be noted that peers' ID numbers had been cut in these copies in order to provide anonymity in peer feedbacks) 12. The student was expected to do a self-reflection assignment (Appendix J) on his/her own microteaching performance considering teaching staff's and peers' feedbacks coming with the MAFs. At the beginning of this assignment, microteaching performer also filled a microteaching self-assessment form (Appendix I).

developed a microteaching plan based on the MPG (Appendix G). This guide was improved on the basis of the template suggested in the computer education curriculum (MONE, 2006, p. 19). In this guide, preservice teachers were also encouraged to apply either IPSRT or CPSRT by considering their instructional goal. The researcher then tried to give at least two written and one oral feedback for each preservice teacher's microteaching plan. The oral feedback sessions were in the form of planning conferences, that is, the preservice teachers' feelings, thoughts, and concerns become apparent and possible problems and challenges arising from the plan and microteaching were discussed in one-to-one sessions, in a nonthreatening environment. In this way, there occurred a dialog between the preservice teacher and the instructor (researcher) about how to make the plan more applicable and feasible in terms of instructional goals, learner characteristics, motivation and gaining attention, learning activities, teaching methods and techniques, active learning strategies, practice and feedback, assessment and closure of the lesson. The written feedback on the plans, including corrections, hints, and suggestive comments, was given in electronic form.

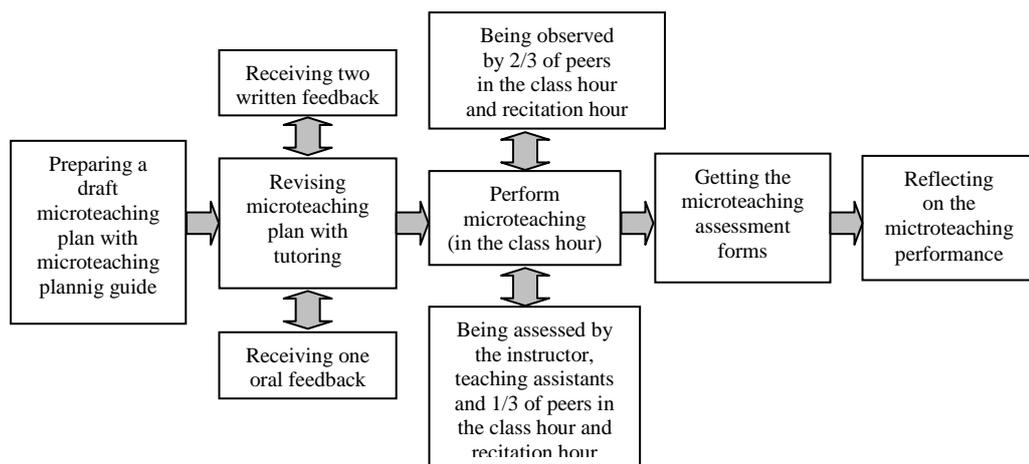


Figure 3.2 The Process that a Microteaching Performer Went through in the Microteaching Model

The instructor tried to enhance the preservice teachers' instructional planning skills and make them aware of how to master the components of planning through constructive dialogue established during tutoring. If the preservice teachers needed, the instructor provided additional written or oral feedback for the plans. The oral feedback was generally given in the instructor's office and the written feedback was given by using the reviewing facilities of the Microsoft Word program and sent via e-mail.

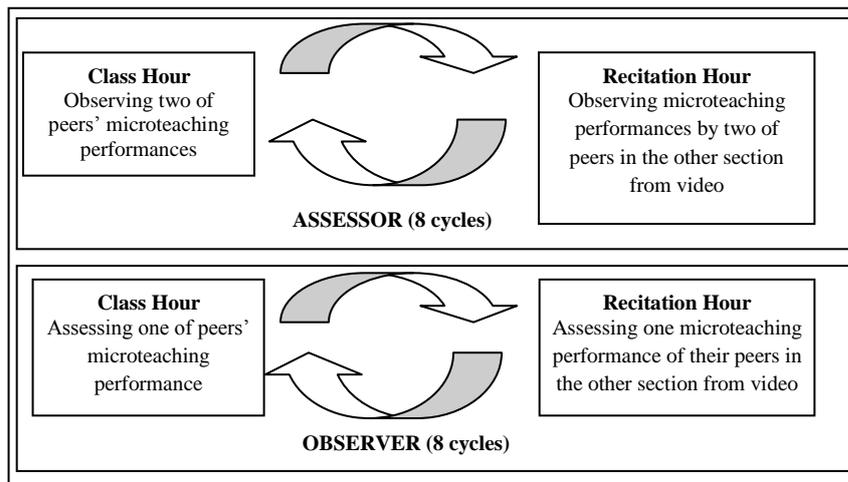


Figure 3.3 The Process that Students Went through in the Role of Observer and Assessor in the Microteaching Model

Within each section's class hour, each preservice teacher performed one individual 20-minute microteaching for his/her four to six peers in target pupil role, in an electronic classroom in the STEs. The layout of the microteaching environment in the electronic classroom is seen in Figure 3.4. The students in pupil role sit in front of the classroom, apart from the audience group. Before the microteaching episodes, the students in the role of pupils and the audience were divided into the number of microteaching performers that day, and each subgroup was randomly assigned to assess one of the presenters. That is, each student in the audience group or in the role of pupil assessed only one presenter. The aim of this was to prevent students from possible cognitive load and superficial assessments due to assessing all the presenters each session. The MAFs (seen in Appendix H) were delivered to audience and teaching staff, and then the microteaching episodes began. The instructor (researcher), teaching assistants and peers assessed the presenter via the MAF during or just after the microteaching presentation. The next microteaching episode begun only after assessors' had finished filling in the forms. All of the microteaching episodes were captured through one video camera, generally by a group member or a class-mate. Each section observed the microteaching video of the presenter group in the other section from the video recording in the recitation hours. Thus, each student could have chance to observe what the other section did in microteaching. Each student also assessed one of the presenters in the other section from video, using the MAF. In summary, students were subjected to the assessment of two of their peers, one in the class hour, the other in the recitation hour, using the MAF. This form was not intended to serve as a means of summative assessment, but

rather for formative assessment, and as a learning tool for both the students who assessed others and the students who were assessed (Topping, 2005), by means of giving and receiving corrective feedback, respectively.

In this way, alongside the researcher as instructor and independent observers as teaching assistants, each microteaching performance was evaluated by some peers in the same section, and by some peers in the other section, who observed that microteaching from video in their recitation hour. The assessment forms filled in by instructor, teaching assistants and peers were photocopied; peers' student id numbers were removed from the forms and these forms were given to the performer of that microteaching episode. Performers generally took 10-15 assessment forms filled in for their own microteaching in total. The microteaching performances lasted seven weeks.

The performers undertook a self-reflection assignment about their microteaching performance considering these evaluations of their performances. They were provided with a self-reflection assignment guide explaining how to analyze the assessments and feedback on the MAFs, and how to write the self-reflection essay. The students were asked to observe their own microteaching performances from video and to fill in a microteaching self-assessment form before responding to the feedback. After deciding on three strong and three weak sides to their performances, they were expected to write a self-reflection essay explaining their strengths and weaknesses by relating them to theories of instruction, and the insights they gained from the process of microteaching planning and performance.

It should be noted that in the current microteaching model, the microteaching episodes are framed as microteaching performance, because Bell (2007) recommends to teacher trainers to frame microteaching as "performance", accordingly, microteaching can help preservice teachers think what kind of teacher they would like to be and give the freedom of experimenting what it is like to be that kind of teacher and what such a teacher would experience.

Towards the end of the semester, the semi-structured interview guide was developed by the researcher. In the next semester, the students were invited for a one-hour individual interview via e-mail. It was encouraging for the researcher to see that almost forty students responded positively to this invitation. Five of them had been interviewed in the pilot studies. The thirty-three remaining interviews were conducted with the semi-structured interview guide. Fifteen interviews were selected to analyze among those 33 interviews.

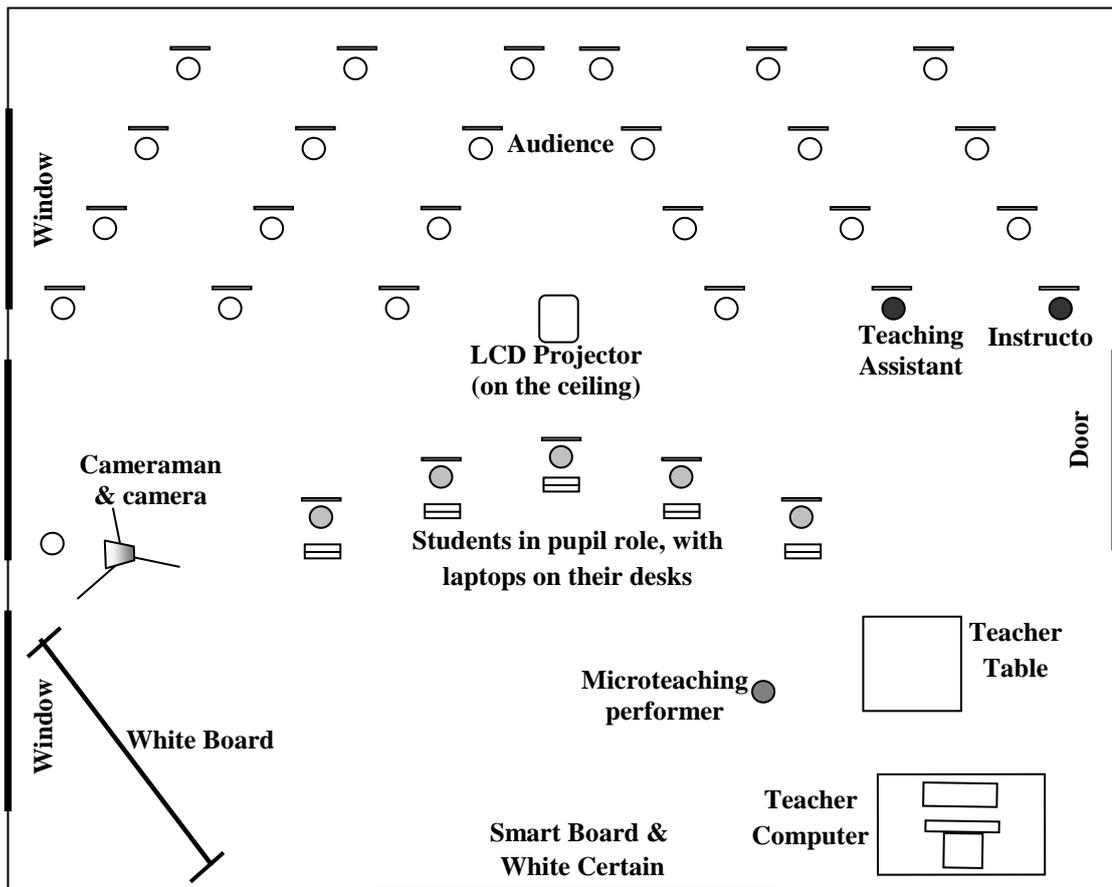


Figure 3.4 Layout of the Microteaching Environment in the Electronic Classroom

The volunteer students were interviewed to understand their opinions about the contributions and challenges of microteaching, including the microteaching planning process, performing microteaching, assessing peers' microteaching, being assessed by peers and reflecting on microteaching performance. The interviews were conducted in an office at the faculty of education. The interviewees were informed about the purpose of the interview, the confidentiality of their identity, and how long it would take. Each interviewee was also asked for permission to record the interview. At the beginning of the interview, the interviewee was provided with the IPSRT and CPSRT, one lesson plan that they developed for each of these tools, the MAF, and their microteaching self-reflection assignment. The interviewees were given 10-15 minutes to examine these documents and instruments so that they could refresh their minds regarding the contributions and challenges that they had identified concerning the lesson planning and microteaching activities.

3.6.3 Procedure for the follow-up part of the study

In order to detect the effects of the cognitive tools and the microteaching method, and to triangulate the data in the first two phases of the study, a follow-up part was designed as the third phase of the study. For this part, the data was collected in two ways. First one is that, the interviewees were asked, if any, to describe their planning and teaching experiences at schools where they attended for apprenticeship as a part of “Teaching Practice” course in the following semester. The second one is that, the interviewees’ field teaching performance in this Teaching Practice course was followed. For this purpose, their field teaching lesson plans were obtained from the teaching assistants of that course; and those assistants assessed the field teaching performances of the participants using the MAF. These data were content-analyzed.

3.7 Data Analyses

The type of data collected and the techniques of analyses are described in this section.

3.7.1 Demographic Data

At the beginning of the study, students’ demographic data was collected through a demographics questionnaire (See Appendix A). Descriptive statistics were conducted on the collected demographic data such as minimum, maximum, mean, frequencies and percentages.

3.7.2 The Degree of Following the Tools in Lesson Planning (Quiz)

In order to understand the extent to which the preservice teachers used the cognitive tools during instructional planning, the quizzes (which required them to write lesson plans with the tool at hand) were checked with the rubrics given in appendix F. After assessing each quiz with the related rubric, descriptive statistics like frequency analysis and percentages of students following each part of the tool were calculated and interpreted.

3.7.3 Self-efficacy regarding Instructional Planning

The sections’ initial self-efficacy scores were compared with the independent samples t-test. The change of self-efficacy throughout the treatments, and any possible order effect of the treatments on self-efficacy were tested with the mixed-design ANOVA. The within factor is the type of cognitive tool treatment (introduction of the tool, giving a model plan developed with the tool, group and individual in-class lesson planning activities, and tutoring by the instructor by giving written and oral feedback), the between factor is the section and the dependent variable is the scores indicating self-efficacy beliefs. Among the

analysis results, the within factor (treatments of tools) and interaction effect (to test the order effect) were interpreted, but the between factor was not of interest. The Bonferroni approach was used to control for Type I error across pairwise comparisons for self-efficacy scores. With the Bonferroni method, each comparison was tested at $.05/3=.0167$, by dividing alpha level into three, since three comparisons were done, (Green, Salkind & Akey, 2000).

3.7.4 Perceived Instrumentality of Instructional Planning

The sections' initial perceived instrumentality of lesson planning was compared with the independent samples t-test. The change of instrumentality throughout the treatments, and any possible order effect of the treatments were tested with mixed-design ANOVA. The within factor is the type of cognitive tool treatment (introduction of the tool, giving a model plan developed with the tool, group and individual in-class lesson planning activities, and tutoring by the instructor through written and/or oral feedback), the between factor is the section and the dependent variable is the perceived instrumentality of instructional planning. Among the analysis results, the within factor (treatments of tools) and interaction effect (to test the order effect) were interpreted, but the between factor was not of interest.

3.7.4.1 The Assumptions and interpretation of mixed-design ANOVA

Two mixed-design ANOVAs were run for testing whether there were any changes in self-efficacy and perceived instrumentality regarding planning instruction as the result of the treatments including the tool intervention with tutoring by the researcher, and possible order effect of the treatment. The assumptions of this analysis and how to interpret the effect size are briefly described below.

In assessing the assumptions of mixed-design ANOVA, assumptions of within-group ANOVA and t-test have to be considered. Stevens (2002) states that there are three assumptions in the within-subjects univariate ANOVA: (1) independence of observations, (2) multivariate normality, and (3) sphericity. Since, the violation of independence assumption is very serious, the questionnaires -before the tool intervention and after the implementation of each tool- were administered in the classroom. Students filled in these questionnaires on their own in a silent environment while the researcher and one research assistant were observing them, in this way ensuring independence as far as possible. Furthermore, the quizzes were done at the end of both treatments to ensure independence of observation. For multivariate normality, like ANOVA and MANOVA, repeated measures analyses are quite robust against violation of the multivariate assumption (Stevens, 2002). However, the sample size of the current study is not large. Therefore, the univariate normality of paired differences for self-efficacy and perceived instrumentality scores were checked through skewness and kurtosis and Stem-and-Leaf plots. Since the skewness and

almost all kurtosis values are between -2 and +2, as shown in Table 3.10 and 3.11, the univariate normality was assumed to be met for both variables.

Table 3.10 Descriptive Statistics for the Mean Differences of Self-Efficacy Score

	N	M	SD	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
SE after CPSRT– Initial SE	32	5.1719	11.32	.054	.414	-.138	.81
SE after IPSRT– Initial SE	32	6.7656	11.27	.371	.414	.597	.81
SE after IPSRT – SE after CPSRT	32	1.5938	9.47	1.431	.414	4.432	.81

Table 3.11 Descriptive Statistics for the Mean Differences of Perceived Instrumentality of Instructional Planning Score

	N	M	SD	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
PI after CPSRT-Initial PI	32	.1563	.72	.298	.41	.199	.81
PI after IPSRT – Initial PI	32	.1250	.83	.827	.41	.678	.81
PI after IPSRT – PI after CPSRT	32	-.0313	.59	.005	.41	.107	.81

The last one, the sphericity assumption, requires that the variances of the differences for all pairs of repeated measures be equal (Stevens, 2002). It would be necessary to consider this if the univariate within-subjects ANOVA results were interpreted for the mixed-design ANOVAs which were run for self-efficacy and perceived instrumentality. However, from the results of these analyses, the multivariate options were interpreted, instead of univariate ANOVA, because, sphericity is not an assumption of multivariate ANOVA as Stevens (2002) noticed, and multivariate options can be interpreted as alternative to the univariate results in order not to deal with the sphericity assumption (Green, Salkind & Akey, 2000). Although the sphericity assumption was not violated according to Mauchly's test of sphericity, for both the self-efficacy scores ($p=.123$) and perceived instrumentality scores ($p=.178$), the multivariate options in the results were interpreted in the current study.

For the between factor, that is the section, Box's M test was run to check the equality of covariance matrices of self-efficacy and perceived instrumentality scores of the sections, separately. The result showed that the sections have equal covariance for self-efficacy, Box's $M= 6.86$, $F(12, 2670) = .731$, $p=.722$. The sections have equal covariance also for perceived instrumentality, as well, Box's $M= 9.655$, $F(6, 6520.755) = 1.433$, $p=.198$.

Effect Size: Fraenkel and Wallen (2003) define effect size as a “technique for assessing the magnitude of a difference between the means of two groups” (p. 256). It can be considered as an indicator of the magnitude of the relationship(s)/difference(s) between two or more variables/groups, and it usually clarifies the proportion of explained variance on dependent variables, regardless of whether statistical significance exists or not (Cohen, Cohen, West & Aiken, 2003).

Although different classifications about effect size are suggested, the most prevalent and acceptable guideline on effect size for the social sciences is Cohen’s (1977). Therefore, his classification of effect size can be considered as standard for the social sciences. In accordance with common practices, he offers the frame of reference as follow: .01 is small, .09 is medium and .25 or greater is large. The effect size values of mixed-design ANOVAs were interpreted according to this classification.

3.7.5 The Degree of Valuing IPSRT and CPSRT

Descriptive statistics were used to understand which tool was more valued by the students. More specifically, means and standard deviations were reported and interpreted descriptively.

3.7.6 The Interviews and Open-ended Questions in the Questionnaires

The interview transcripts and open-ended questions are qualitative data, thus they were subjected to content analysis. In the content analysis, an integrated approach (inductive and deductive) was applied.

The recorded interviews were transcribed. The transcriptions were read several times by the researcher. The transcriptions were converted to table form in the Microsoft Word program. A new column was opened on the right of the table and open coding was conducted on the raw data in that table. Then, all the codes were put into a new table in the Word program so as to place each of the codes in one row. The rows are marked with consecutive numbers. Then data reduction was conducted by phrasing the codes and organizing them into a new table, moving the row numbers in the first table to the place where they were put in this new table. This led to obtain more manageable and meaningful data chunks. Then relevant phrases, sentences and labels in the second table were converted into patterns and major categories in a third table. Finally, the third table was printed out and axial coding was conducted to develop a coding system through examining the original data, major and sub categories and patterns. Axial coding is the act of relating categories to sub-categories along the lines of their properties and dimensions (Strauss & Corbin, 1998). In each coding level, predefined categories were considered in the approach of integrated coding. After producing a coding system, it was revised to check coding, to name codes and to describe codes

operationally. The coding system provided the researcher with information about what is expressed by whom, where it is expressed, and the frequency of expressions. In other words, the researcher could track anything that was made during the data analysis, even turning back to the original transcriptions when necessary. Open-ended items in the questionnaires were also content analyzed in the same way.

While creating the coding system, in order to generate, understand and interpret more meaningful patterns from the codes, selective coding processes were followed to integrate and refine the theory (Strauss & Corbin, 1998). That is, the researcher clustered some codes into broader categories and organized some sub codes logically according to relationships, explanations and patterns. By doing so, a central theme and idea was identified to make interpretations. The final code list obtained from the interview analysis is given in Appendix N.

3.7.7 Lesson Plans and Assessment Forms for Field Teaching

Lesson plans for field teaching and assessment forms for field teaching were considered as the data for a follow-up study. These data were subjected to content-analysis in order to investigate the effects of the cognitive tools and of the microteaching model on the preservice teachers' planning and teaching performance of field teaching in the succeeding semester.

The lesson plans used in field teaching were analyzed according to a framework in the form of rubric. This rubric was developed by the researcher parallel to the MPG and the MAF. The main components in this rubric are preparation, introduction, core, assessment and closure parts and references (as seen in Table 4.12 in the next chapter). The lesson plans were read and decided on whether each criterion in the rubric had been considered by students or not. Finally, the frequencies and percentages of students who considered the criteria in the rubric was calculated and interpreted.

As to field teaching performances, twelve participants' assessment forms for field teaching, filled in by teaching assistants of "Teaching Practice" course, were subjected to content-analysis to learn their strengths and weaknesses in their field teaching performances. Rather than the rating part, the corrective feedback was focused on, and it is given in Appendix N.

3.8 Validity and Reliability Issues

Concerning threats to the internal validity of action research, Fraenkel and Wallen (2003) state that these studies have generally problems with the possibility of data collector bias, implementation, and attitudinal threats, while most of the other threads can be

controlled. The researcher collected most of the data herself, but the participants' field teaching assessments were assessed by the teaching assistants of CEIT 410 course. It should be noted that differences in their attitudes towards the study and in their academic work may have affected their way of filling in the forms. Because of this, the researcher did not analyze the quantitative assessments (the ratings part) in the MAFs they filled in, but rather, analyzed the qualitative assessments, that is, their feedbacks and comments. As to the researcher, in order to provide external validity, she selected the maximized variation for purposive sampling (Patton, 1990) method in selecting interviewees and follow-up participants. By doing so, possible data collector bias was prevented.

As for the implementation and attitudes threats, the teaching assistants have a crucial role in impeding these threats. The implementation of the study, except for the follow-up part, was under the control of the researcher. Nonetheless, the teaching assistants of the course almost always participated in the class and recitation hours in the role of observer. In fact, they were independent observers of the implementation. The existence of the teaching assistants as independent observers could be accepted a control over the researcher, forcing her to implement the treatments fairly or to give an equal effort to each treatment.

As for the external validity, as Fraenkel and Wallen (2003) stressed, action research studies are weak in external validity, that is, their results cannot be directly generalized to other situations. Thus, replication of such studies is essential for obtaining more externally valid results. However, action research studies may stimulate others to replicate such studies or they may generate some ideas for further studies (Fraenkel & Wallen, 2003). The current study has similar limitations in terms of external validity, but it is open to replicate by other researchers and practitioners. Its procedure and its suggested action plan in the implications of the study could be repeated in similar contexts in further studies.

For enhancing the reliability of the results, some precautions were taken. Since the formal language of instruction in METU is English, the students are more familiar with English terminology in the field of education rather than Turkish terminology. Therefore, the questionnaires and instructional materials were designed so as to prompt questions both in English and in Turkish, as far as possible. Furthermore, in order to eliminate the effect of "grade" anxiety on students' comments in the interviews, in other words, to increase honesty, the interviews were conducted in the middle of the next semester. Besides, for reliability of quantitative data collection instruments, test-re-test reliabilities were reported from previous studies for self-efficacy, and calculated from the available data for perceived instrumentality scores, as mentioned before.

Comparing data from various resources makes the study more valid and reliable (Yıldırım and Şimşek, 2000). Therefore, the findings from various data collection methods

comparatively presented and interpreted. Yıldırım and Şimşek (2000) state that document analysis can provide to triangulate the data or to ensure variety in data, and ultimately increase validity of qualitative studies. In this sense, document analysis was also used as data analysis method besides content analyses of interview transcripts and open-ended items in questionnaires. The follow-up phase also made a crucial contribution to the validity and reliability of the interview data through triangulation. In addition, to increase the reliability of the study, the researcher tried to explain precisely the purpose, how she designed the instruments, how she collected the data, and how she analyzed the data, in detail and throughout, in the manuscript and in appendices. In this sense, once the method explained in this chapter is strictly followed, this study can be exactly replicated.

3.9 Limitations of the Study

First of all, it should be noted that the sections comprising the participants in the study were intact groups formed by one of the teaching assistants of the course. In other words, they were not randomly assigned to the sections. The students are senior and they are accustomed to break into sections in this way. Thus, there are social dynamics and they generally work in groups enthusiastically and productively with the same peers.

Secondly, though the sample was divided into two sections of 24 and 26 students, the first section had to have 29 and the second section had to have 22 students in order for them all to participate in class hours, due to the five irregular students. This situation resulted in subject loss (mortality) in the first phase of the study, due to counterbalancing procedures.

Thirdly, the quizzes for both self-reflection tools were administered at the end of the first phase of the study. Although this contributed to assumption of independence of observation in mixed-design ANOVA, this situation should be taken into consideration in interpreting the results regarding the quizzes which were analyzed to investigate the extend of preservice teachers' use of the tools during instructional planning.

Finally, the self-efficacy regarding instructional planning was measured with a one-item scale as some of the researchers did in the previous studies (e.g. Kitsantas & Baylor, 2001; Baylor & Kitsantas, 2005), whereas using a more detailed instrument covering all instructional planning skills would be more appropriate to measure this construct. Indeed, as Parajes (1996) noted, self-efficacy is primarily a domain-specific construct (as cited in Schunk, 2000), it refers to perceptions of specific capabilities (e.g. drawing inferences from text, solving fraction problems, planning lessons in traditional approach), not the same as self-concept, which is one's general self-perception that includes efficacy in different areas (Schunk, 2000). The results regarding self-efficacy for instructional planning should be interpreted considering this situation.

3.10 Summary of the Methodology

The present study has an action research design utilizing multimethod techniques in data collection and interpretation. The first three phase of action research are described in this chapter. The research questions (first step of action research), data collection instruments (second step of action research), and obtained data and data analysis methods (third step of action research) are summarized in Table 3.12.

Table 3.12 Summary of Research Questions, Data Collection Instruments, Obtained Data and Data Analysis Methods

	Step 1 of action research	Step 2 of action research		Step 3 of action research	
	Research Questions	Data Collection Instruments		Measures	Data Analyses
		Section 1	Section 2		
1. What are the contributions and challenges of the cognitive tools in improving preservice teachers' instructional planning knowledge, skills and attitudes in the field of computer education?	1.1 To what extent do the preservice teachers follow IPSRT and CPSRT during instructional planning?	IPSRT Quiz Developing lesson plan with IPSRT- individual work. The instructor provided no feedback.	CPSRT Quiz Developing lesson plan with CPSRT- individual work. The instructor provided no feedback.	Lesson plans developed with IPSRT and CPSRT were analyzed with the assessment rubrics for the plans with IPSRT and CPSRT, respectively.	Document analysis (frequencies and percentages of students who met and did not meet the items in the rubrics)
	1.2 Does either IPSRT or CPSRT better enhance preservice teachers' self-efficacy?	Demographics Questionnaire (Appendix A)		Self-efficacy (pre and post after IPSRT and after CPSRT)	Mixed-design ANOVA
	1.3 Does either the IPSRT or CPSRT better enhance perceived instrumentality of preservice teachers?	Questionnaire after CPSRT (Appendix E)	Questionnaire after IPSRT	Instrumentality (pre and post after IPSRT and after CPSRT)	Mixed-design ANOVA
	1.4 What are the preservice teachers' perceptions of contributions and challenges in using the cognitive tools for instructional planning?	Questionnaire after CPSRT	Questionnaire after IPSRT	<ul style="list-style-type: none"> • Helpfulness • Easy to use • Usefulness • Interesting • Flexible • Recommend to friend 	Descriptive analysis
		Questionnaire after IPSRT	Questionnaire after CPSRT	Open-ended questions in the questionnaire after IPSRT and after CPSRT	Benefits of the tools
		Semi-structured interview guide (Appendix K)		Contributions and challenges of using these tools	
2. According to the preservice teachers, what are the contributions and challenges of the microteaching model used in the Teaching Method II course in the field of computer education, as a method to improve instructional planning and teaching skills?		Semi-structured interview guide		<ul style="list-style-type: none"> • Microteaching planning process with tutoring • Microteaching activities • Assessing peers • Being assessed • Self-reflection assignment 	Content Analysis
3. What are the effects of cognitive tools and the microteaching method used in the Teaching Method II in computer education course, on preservice teachers' field teaching planning and performances?		Field teaching plans of the participants of the interviews (12 students). Field teaching assessment forms for these 12 students' performance (the MAF was used for assessment)		The field teaching plans were examined with assessment rubrics (Appendix F). The assessment forms were content analyzed.	Document analysis

CHAPTER 4

RESULTS

In this chapter, the results of the data analyses are reported under the related research questions. The major findings of the first phase of the study regarding the cognitive tools for instructional planning are presented. Then, the results of the second phase of the study about microteaching are given. Finally, the follow-up results are described. It should be noted that the original, Turkish form of long quotations from the participants are given in Appendix L. Most of the quotations from the participants presented in this chapter were tried to translate word-by-word, sometimes by ignoring grammatical rules.

4.1 Contributions and Challenges presented by the Cognitive Tools for Instructional Planning in Improving Instructional Planning Skills

4.1.1 Answer to Research Question 1.1

RQ 1.1: To what extent do the preservice teachers follow the IPSRT and CPSRT during instructional planning?

In order to understand to which extent the preservice teachers used the cognitive tools during instructional planning, each plan written in the quizzes was analyzed via the related rubrics which are parallel to the questions in the tools. The IPSRT rubric has 27 items, each of which has yes and no options. The CPSRT rubric has 39 items, each of which has yes, no and not applicable options. If any of the items in the CPSRT is not appropriate to the instructional purpose, learning activity or pupils, then the researcher assigned “not applicable” to such items. The frequencies and percentages of preservice teachers who followed or did not follow each question in the tools are given in Table 4.1 for IPSRT and in Table 4.2 for CPSRT. In the quizzes, different cases were given to the sections for each tool due to time constraints, thus the results of each section are given separately below.

4.1.1.1 Section 1

As regards to the IPSRT quiz, the subjects in Section 1 (N=19) wrote a 40-minute lesson plan for sixth grade pupils by using IPSRT, with the following instructional purpose: “Pupil explains the types of software in respect of user rights”.

The results revealed that all the preservice teachers in Section 1 took into consideration almost half of the items in the IPSRT in their plans. They all were able to write an “*instructional goal*” according to the directions implied by the questions in the tool.

For the “objectives” part, they also could write objectives that “*derive directly and logically from the instructional goal*”. Furthermore, almost all of them could “*state what the LEARNER will do*” and “*use ONE active verb*”. On the other hand, the results showed that they were most challenged when writing objectives in using IPSRT. It seems that they did not consider the remaining items related to writing objectives. Almost no one specified “*how well/to what extent the learner will do*”, “*contextual conditions under which the performance will be conducted*”, and no one stated behavior “*specifically and explicitly*”. Furthermore, two more characteristics of the objectives were not met by a considerable number of subjects: many of them (63%) did not specify “*measurable/observable behaviors*” in the objectives, and several of them (42%) did not state “*what the learner will do at the end of the lesson*”.

Subjects could all select “*appropriate materials for learners*” and “*list them*”. Besides, almost all of them could describe “*level and learner characteristics*”. Furthermore, they all could design a “*procedure*” that was appropriate “*to objectives*”, “*content*” and “*the learners*”. More specifically, they could all “*present necessary information*”, “*provide examples*” and “*try to teach all the objectives*”. They also planned to “*summarize the major points*” of the lesson. For the remaining items of “*procedure*”, and the “*assessment*”, almost all of them fulfilled what the IPSRT prompts. As a result, the subjects in Section 1 seem to follow the IPSRT. Yet, they have certain deficiencies in writing behavioral objectives with respect to the tool.

As to the CPSRT quiz, the subjects in Section 1 (N=19) wrote a 40-minute lesson plan for second grade pupils, using the CPSRT for the following instructional purpose: “Pupil recognizes that the words in text can be in different font, size and colors”.

All the subjects could address all the requirements for specifying “*instructional purpose*” and “*assessment*” according to the CPSRT. Yet, they have some deficiencies in meeting the prompts under other subheadings, as described below.

Regarding the “*required characteristics*” of the learning activities part, they could all design “*relevant*”, “*meaningful*” and “*authentic*” learning activities. More specifically, they were able to “*fulfill the instructional purpose*”, “*promote personal interests of students*”, and “*focus on learning process rather than specific knowledge*”. However, a minority of the subjects (42%) did not describe one of the required characteristics, “*integrating information with prior knowledge of students*”.

Table 4.1 Descriptive Statistics on Students' Degree of Following the IPSRT

	Components of the IPSRT	Section 1				Section 2			
		f		%		f		%	
		1	0	1	0	1	0	1	0
Goal	General and broad	19		100	0	17	0	100	0
	States what the learner will do, not how the teacher does it	19		100	0	16	1	94	6
Objective(s)	Drives directly and logically from instructional goal	19		100	0	17		100	0
	States what the LEARNER will do	18	1	95	5	17		100	0
	States behavior specifically and explicitly	1	18	5	95	3	14	18	82
	Includes measurable and/or observable behavior	7	12	37	63	6	11	35	65
	States what the learner will do at the END of the lesson	11	8	58	42	16	1	94	6
Materials Prepara.	Uses ONE active verb	18	1	95	5	17		100	0
	Specifies contextual conditions under which the performance will be conducted		19	0	100	2	15	12	88
	States how well/to what extent the learner will do		19	0	100	1	16	6	94
	Lists all instructional materials to be used	19		100	0	15	2	88	12
Learner charac.	Appropriateness to learners	19		100	0	16	1	94	6
	Includes relevant characteristics of learners	18	1	95	5	16	1	94	6
Procedure	Uses effective motivating strategies/ methods/ tactics	17	2	89	11	15	2	88	12
	Gains learners' attention	17	2	89	11	16	1	94	6
	Gives information about objectives	17	2	89	11	15	2	88	12
	Helps students recall prior/ prerequisite knowledge	18	1	95	5	16	1	94	6
	Provides students with necessary information	19		100	0	17		100	0
	Provides students with examples	19		100	0	16	1	94	6
Assessment	Provides practice (knowledge, skills and attitudes) for students	19		100	0	17		100	0
	Provides feedback to student practice	18	1	95	5	17		100	0
	Summarizes the major points for closure	19		100	0	14	3	82	18
	Tries to teach all the objectives	19		100	0	17		100	0
	The procedure (strategy, method, tactics) is appropriate with:								
	Objectives	19		100	0	17		100	0
	Content	19		100	0	17		100	0
	Learner characteristics	19		100	0	17		100	0
	Assesses all the objectives	18	1	95	5	14	3	82	18

1: Yes, the plan indicates that the student considered the item in IPSRT
0: No, the plan does not indicate that the student considered the item in IPSRT

Table 4.2 Descriptive Statistics on Students' Degree of Following the CPSRT

Purpose	Section 1			Section 2			
	f	NA	%	f	NA	%	
Components of the CPSRT Describes one or more of the following learning outcomes: reasoning skills, critical thinking, retention, understanding of multiple perspectives, cognitive flexibility, self-regulation, reflection and/or self-awareness, application Directed towards usable personal knowledge Fulfill the instructional purpose Cognitively activates the students Focus on learning process rather than specific knowledge Promote personal interests of students Integrate information with prior knowledge of students are relevant are meaningful are authentic are ill-structured tasks are complex are multi-disciplinary Include "what-if" questions Encourage multiple perspectives Involve cognitive conflict are defined in part by the learner Include discussion and/or collaboration Involve social negotiation and communication Involve the sharing of information and/or culture Engages and cognitively active Takes responsibility for learning Selects appropriate strategy/ies during the activity/ies Monitors his/her learning progress Evaluates himself/herself Reflects on his/her performance/s Helps students recall necessary prior knowledge Facilitates learning rather than directly teaching Guides the students to achieve the task independently Helps the students develop connections between principles, theory and real life Encourages student ownership of the learning process Challenges the students' ideas when appropriate Encourages students to monitor their thinking Facilitates students' learning through the learning process If students are working in collaborative groups, then the instructor facilitates the group work and encourages interaction If students are working independently, then the instructor provides access to the information needed to complete the activity Directly link to the instructional purpose Involves some sort of performance by the learner Evaluates one or more of the following learning outcomes: reasoning skills, critical thinking, retention, understanding of multiple perspectives, cognitive flexibility, self-regulation, reflection and/or self-awareness, application	19	100	0	19	100	0	
	19	100	0	19	100	0	
	17	2	89	0	11	15	1
	14	4	74	5	21	15	1
	19	1	100	0	16	1	1
	18	1	95	0	5	13	1
	10	1	53	42	5	16	1
	19	100	0	16	1	94	0
	19	100	0	15	2	88	0
	19	100	0	13	4	76	0
	1	19	0	100	1	2	14
	1	18	5	0	95	2	13
	19	19	0	100	3	2	12
	1	19	0	100	1	3	13
	1	18	5	0	95	3	2
	9	10	47	0	55	8	1
	12	7	63	37	0	11	5
	5	14	26	74	0	11	5
	6	13	32	68	0	11	5
6	13	32	68	0	12	5	
14	1	4	74	5	21	15	
19	17	11	0	89	17	0	
5	14	26	0	74	2	15	
5	14	26	0	74	5	12	
18	1	95	5	0	17	100	
11	8	58	42	0	13	4	
18	1	95	5	0	17	100	
15	3	1	79	16	5	16	
6	12	1	32	63	5	11	
16	2	1	84	11	5	17	
1	1	17	5	5	89	1	
1	1	17	5	5	89	1	
16	1	2	84	5	11	16	
1	3	15	5	16	79	3	
16	2	1	84	11	5	17	
19	100	0	15	2	88	0	
19	100	0	16	1	94	0	
19	100	0	16	1	94	0	

1 : Yes, the plan indicates that the student considered the item in CPSRT
 0 : No, the plan does not indicate that the student considered the item in CPSRT
 NA: Not Applicable

It could be said that all the items in this part were appropriate to the learning outcome, learner characteristics and designed learning activities since the not applicable choice was marked for a few plans. Indeed, these items represent the required characteristics of the learning activities.

In the “*desirable characteristics*” of the learning activities part, many of the subjects seemed to fail to design some characteristics regarding social interaction. Seventy four per cent of them failed to meet the criterion for “*including discussion and/or collaboration*”, 68% of them failed to meet “*involving social negotiation and communication*”, and 68% of them failed to meet “*involving the sharing of information and/or culture*”. Most of the plans were marked as not applicable for some of the desired characteristics of learning activities (“*are ill-structured tasks*”, “*are complex*”, “*are multi-disciplinary*”, “*Include “what-if” questions*”, “*Encourage multiple perspectives*”, “*Involve cognitive conflict*”) since these are not applicable to the instructional purpose, learner characteristics or designed learning activities.

In Section 1, most of the subjects described almost half of the “*role of instructor*” items (“*If students are working independently, then the instructor provides access to the information needed to complete the activity*”, “*Facilitates students’ learning through the learning process*”, “*Encourages student ownership of the learning process*”, “*Facilitates learning rather than directly teaching*”). However, a considerable number of the subjects seemed not to consider two roles of the instructor: “*helps students develop connections between principles, theory and real life*” (63%) and “*Helps students recall necessary prior knowledge*” (42%). On the other hand, some roles of the instructor (“*Challenges the students’ ideas when appropriate*”, “*Encourages students to monitor their thinking*”, “*If students are working in collaborative groups, then the instructor facilitates the group work and encourages interaction*”) were considered as not applicable.

Most of the subjects described one of “*role of student*” item (“*Reflects on his/her performance/s*”). However, some of roles of the student (“*Selects appropriate strategy/ies during the activity/ies*”, “*Monitors his/her learning progress*”, and “*Evaluates himself/herself*”) were considered as not applicable for almost all of the plans.

In summary, the results revealed that almost all the subjects in Section 1 could fulfill the prompted items under the parts of “*instructional purpose*”, “*required characteristics*” of learning activities and “*assessment*” in the CPSRT. Furthermore, some parts of the CPSRT under the title of “*desirable characteristics*” of learning activities, “*role of student*”, and “*role of instructor*” were mastered by the majority of subjects, while almost half of the items under these titles did not work or were considered inappropriate in terms of instructional purpose, learning activities, or learner characteristics.

4.1.1.2 Section 2

As for the IPSRT quiz, the subjects in Section 2 (N=17) wrote a 40-minute lesson plan for third grade pupils, using the IPSRT for the following instructional goal: “Pupil gives examples for hardware and software that are used for different purposes”.

The entire section (Section 2) seemed to meet 41% of the items in the IPSRT. They were able to write a general and broad “*instructional goal*”, respecting the directions of the IPSRT.

Regarding “*objectives*”, they could all write objectives that “*derive directly and logically from instructional goal*”; they were all able to state “*what the learners do with ONE active verb*” as well. Yet the results revealed that the subjects were most challenged when writing objectives. They appeared not to consider the remaining items which indicated the components of good objectives in the IPSRT. More specifically, most of the subjects failed to specify “*how well/to what extent the learner will do*” (94%), and “*contextual conditions under which the performance will be conducted*” (88%), and they failed to state behavior “*specifically and explicitly*” (82%). In addition, many of them (65%) did not include “*measurable and/or observable behavior*” in their objectives.

Most of the subjects could fulfill what the tool requires in parts of “*materials/preparation*” (88% and 94% for each item) and “*learner characteristics*” (94%). Furthermore, all of them were able to meet more than half of the items in the “*procedure*” part. They could all design a procedure appropriate to “*objectives*”, “*content*” and “*the learners*”; they could “*present necessary information*” and “*provide feedback to student practice*”, they also “*tried to teach all the objectives*”. Moreover, most of them could take the remaining items into consideration in the “*procedure*” and all the items in “*assessment*” parts.

In brief, almost all the subjects in Section 2 fulfilled most of the prompts in the IPSRT during instructional planning in a traditional approach. They only seemed to be challenged in writing behavioral objectives according to this tool.

As for the CPSRT quiz, the subjects in the Section 2 wrote a 40-minute lesson plan for third grade pupils, using the CPSRT for the following instructional purpose: “Pupil uses e-mail in order to share information”.

According to the analysis via the rubric for the CPSRT, all the subjects in Section 2 successfully satisfied all the requirements in the CPSRT for specifying “*instructional purpose*” and “*assessment*”, if applicable. Furthermore, almost all of the subjects seemed to focus on the “*required characteristics*” of learning activities. It was seen that all the items in this part worked, since not applicable was marked for only a few plans.

When the part pertaining to the “*desirable characteristics*” of the learning activities is concerned, many of the subjects (71%) could include half of these items in their activities, if applicable: “*are defined in part by the learner*”, “*Include discussion and/or collaboration*”, “*Involve social negotiation and communication*”, “*Involve the sharing of information and/or culture*”. On the other hand, most of the plans were marked as not applicable for the remaining half of the items, as follow: “*are ill-structured tasks*” (82%), “*are complex*” (76%), “*are multi-disciplinary*” (71%), “*Include ‘what-if’ questions*” (76%), and “*Encourage multiple perspectives*” (71%). Furthermore, “*involve cognitive conflict*” was marked as not applicable for almost half of the plans (47%).

For “*role of student*”, all of the subjects in this section described the following items, if applicable: “*Reflects on his/her performances*”, “*Takes responsibility for learning*” and “*Engages and cognitively active*”. However, the following items were marked as not applicable for most of the plans, “*Selects appropriate strategy/ies during the activity/ies*” (100%), “*Monitors his/her learning progress*” (88%), “*Evaluates himself/herself*” (71%), thus these ones did not seem to work.

With regard to “*role of instructor*”, almost all of them described half of the roles of the instructor, if applicable: “*Facilitates learning rather than directly teaching*”, “*if students are working independently, then the instructor provides access to the information needed to complete the activity*”, “*Encourages student ownership of the learning process*”, “*Facilitates students’ learning through the learning process*”, and “*Guides the students to achieve the task independently*”. A majority of the subjects could describe how the teacher “*Helps students recall necessary prior knowledge*” (76%) and “*Helps the students develop connections between principles, theory and real life*” (65%). However, the following roles of the instructor were marked as not applicable for a considerable amount of plans: “*If students are working in collaborative groups, then the instructor facilitates the group work and encourages interaction*” (82%), “*Encourages students to monitor their thinking*” (71%), “*Challenges the students’ ideas when appropriate*” (53%).

It is seen that the subjects in Section 2 managed to fulfill the requirements prompted by the CPSRT under the titles of “*instructional purpose*”, “*required characteristics*” of learning activities and “*assessment*”. On the other hand, the results revealed that some items of the CPSRT under the titles of “*desirable characteristics*” of learning activities, “*role of student*”, and “*role of instructor*” did not work.

To sum up the results for both sections, the subjects appeared to have mastered all parts of the IPSRT, except for the objectives part. In fact, most of them failed to specify “*how well/to what extent the learner will do*”, “*contextual conditions under which the performance will be conducted*”, and to state behavior “*specifically and explicitly*”. In

addition, a majority of them did not include “*measurable and/or observable behavior*” in their objectives. Nonetheless, almost all of them could write objectives that “*derive directly from instructional goal*” and state “*what the learners do*” with “*ONE active verb*”. As to the CPSRT, they could meet the requirements of “*instructional purpose*”, “*required characteristics*” of learning activities and “*assessment*”. Yet, they did not consider some items of the CPSRT under the titles of “*desirable characteristics*” of learning activities, “*role of student*”, and “*role of instructor*” or these items were considered as inapplicable due to instructional purpose, learner characteristics or learning activity.

4.1.2 Answer to Research Question 1.2

RQ 1.2: Does either the IPSRT or the CPSRT better enhance preservice teachers’ self-efficacy regarding planning instruction?

In order to detect the influence of the cognitive tools on self-efficacy regarding lesson planning, the subjects’ self-efficacy was measured before and after using each tool with one item. The question was “How sure are you that you can write a lesson plan?”. The subjects were expected to rate their self-efficacy ranging from a 10 (not at all sure) to a 100 (very sure) score.

Table 4.3 Means and Standard Deviations of Self-efficacy Scores of the Sections, by Tool Treatment vs. Sections

	SECTION 1	SECTION 2
Initial SE for lesson planning		
N	16	16
M	80.6	79.9
SD	11.5	10.5
SE after use of the first tool		
	CPSRT	IPSRT
N	16	16
M	81.3	86.3
SD	11.9	7.4
SE after use of the second tool		
	IPSRT	CPSRT
N	16	16
M	87.8	89.6
SD	7.9	8.0

SE: Self-efficacy score

At the beginning of the intervention, the two sections were homogeneous in self-efficacy score for instructional planning, but Section 2 had a slightly higher mean score, as seen in Table 4.3. Initial self-efficacy scores of the sections were compared with independent

samples t-test. The means of the two sections were not significantly different from each other, $t(30) = .18, p = .85$, mean difference = .719. Therefore, the sections were statistically homogeneous in self-efficacy for instructional planning at the beginning of the intervention.

Mixed-design ANOVA was conducted to investigate which tool treatment better enhances self-efficacy related to instructional planning and to evaluate whether there is an order effect of tool treatment on self-efficacy scores or not. The type of cognitive tool treatment (introduction of the tool, giving a model plan developed with the tool, group and individual in-class lesson planning activities, and tutoring by the instructor through written and oral feedback), the between factor is the section (to measure possible order effect), and the dependent variable is the self-efficacy score for instructional planning. This analysis was run on the data of 32 subjects who responded to all three self-efficacy measures. The means and standard deviations of the self-efficacy scores used in mixed-design ANOVA are presented in Table 4.4. In order not to deal with the sphericity assumption, the multivariate options in the ANOVA results were interpreted. These results indicated a significant tool treatment effect, Wilk's $\lambda = .72, F(2, 29) = 5.53, p = .009$, partial $\eta^2 = .28$.

Table 4.4 Means and Standard Deviations of Self-efficacy Scores in ANOVA, by Tool Treatment

Measured time	<i>M</i>	<i>SD</i>	<i>N</i>
Initial SE	80.23	10.85	32
SE after CPSRT	85.41	10.82	
SE after IPSRT	87.00	7.55	

SE: Self-efficacy score

The follow-up paired samples t-tests revealed a significant difference between self-efficacy mean scores measured initially and after each tool intervention, while they revealed a nonsignificant difference between self-efficacy scores measured after the intervention of the tools (level of significance was reduced to .0166 using the Bonferroni adjustment for the follow-up tests), as seen Table 4.5. According to these results, subjects' self-efficacy scores for lesson planning increased once they received one of the tool treatment (use of either IPSRT or CPSRT with tutoring by the instructor) and this did not significantly change after using the second one. This means that the tools with tutoring by the instructor have a homogenous and significant impact on the subjects' initial self-efficacy scores.

Table 4.5 Paired Samples t-test Results as Follow-up to ANOVA for Self-efficacy Scores

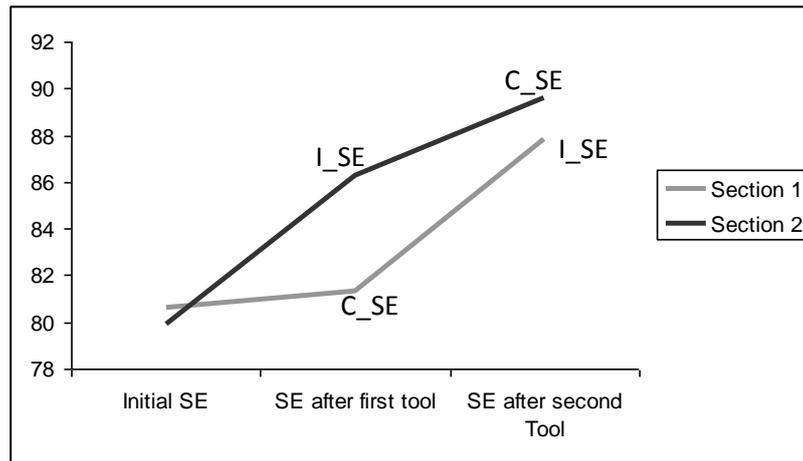
Pair	Mean difference	SD	SE	t	df	p (2 tailed)
Initial SE – SE after CPSRT	-5.17	11.32	2.00	-2.56	31	.015
Initial SE – SE after IPSRT	-6.77	11.27	1.99	-3.40	31	.002
SE after CPSRT – SE after IPSRT	-1.59	9.47	1.67	-.95	31	.349

SE: Self-efficacy score

Remember that the sections took the tool treatment in different orders and thus, order effect was also checked. The multivariate results of mixed-ANOVA revealed an order effect by the tools on self-efficacy scores. There was a significant interaction effect between the tools and sections, Wilk's $\lambda = .68$, $F(2, 29) = 6.74$, $p = .004$, partial $\eta^2 = .32$. Table 4.3 shows the means and standard deviations of subjects' self-efficacy scores according to the sections initially and after using the first and second tool. When the mean scores were examined, it was observed that the initial mean of self-efficacy scores increased after using the first tool, but the mean of Section 2 increased more, who received the IPSRT treatment, compared to that of Section 1, who received the CPSRT. When the change in this increased mean scores at the end of the second tool treatment is examined, the means of Section 1, who received the IPSRT treatment as the second treatment, increased more than the increase in the mean of Section 2, who used the CPSRT as the second tool. The order effect could be explained as follows: the treatment of IPSRT increases the self-efficacy scores more than the CPSRT, but the effect of CPSRT on the self-efficacy score is greater when the treatment of tool is introduced the group after the IPSRT. Parallel to this, the effect of IPSRT treatment on self-efficacy is greater when it was implemented as the first tool. Figure 4.1 shows the change in self-efficacy means of the sections as they received the tool treatments.

In the interviews, the participants were asked for the reasons for changes in their self-efficacy beliefs for instructional planning. Three of them clearly explained the reason for changes in their self-efficacy regarding instructional planning. One of the participants talked about a small change in his self-efficacy in instructional planning:

[Initial self-efficacy score: 90, self-efficacy score after CPSRT: 90, self-efficacy score after IPSRT: 95] I felt more comfortable, I mean, if I can implement [plan] in lesson, prepare, I thought that I can always prepare [plan]. If I had not made [plans], my self-efficacy score would have decreased 85 or even 80 per cent, I mean, I would have less self-confidence. However, as I made [plan], get used to [planning], I was less afraid. I think we made enough number of plans and this gives you confidence. You feel self-confident. Now and then, I can do, I make lesson plan, present it, give lesson, and overcome any problem in case of occurrence. You learn everything gradually. (S10) [1]



C_SE: self-efficacy measured after the CPSRT treatment I_SE: self-efficacy measured after the IPSRT treatment

Figure 4.1 The Change in Self-efficacy Scores throughout the Tool Treatments

Another participant also discussed the reason of fluctuations in his self-efficacy score in this way:

[Initial self-efficacy score: 35, self-efficacy score after IPSRT: 95, self-efficacy score after CPSRT: 85] now, we have a tool, including certain parts. By examining these part, making several practice [planning], after preparing several plans, I said ‘aha, plan was prepared in this way; actually it is not so difficult’. When using the IPSRT, since everything is clear, based on instruction, you easily make plan clear in accordance with lesson and topic, you do not have any problem. For that reason, my self-confidence increased. It was really so easy. Why my self-efficacy score decreased? Since the CPSRT is based on activity, you can not write plan suddenly. After considering, thinking and deciding on the activity and its productivity or unproductively, you can write plan. You should also have this skill. Therefore, I realized that I can not make plan one hundred percent [surely]. However, once deciding on activity, I thought that I can prepare [plan]. Compared to the CPSRT, plans based on the IPSRT can be prepared more easily, since it [IPSRT] is close to direct instruction. That’s why my self-confidence point decreased after using the CPSRT (S48) [2]

In addition to those, another participant touched on the same issue stating, that his self-efficacy regarding instructional planning also increased in microteaching activities:

[Initial self-efficacy score: 70, self-efficacy score after CPSRT: 75, self-efficacy score after IPSRT: 75] Now, if you asked [how sure are you that you can write a lesson plan? 10 (not at all sure) to 100 (very sure)], I would write 90. Why? Because I made applications, some things were just in the theory, but now I filled its behind and also, if you gave me the first questionnaire [initial self-efficacy], I would not write it as 70; I would write such things as 55-60. Since that time, so to say, I was ignorant in these fields, you know, ignorant is brave, I did not know to what extent I knew, for that reason I wrote 70 ... I did not get aware of how much I learned lesson planning, either. Now I see to what extent I know. I am saying such a thing as ‘aha, actually I learned well’. If it [the self-efficacy measurement] was asked now, I would write 60 [at the beginning of the tool intervention] and 90 [after tool treatments], since I was very ignorant in planning instruction at that time ... before, I did not learn the planning. That is to say, something that I wrote 70 also was stemmed from ignorance ... now I see well. (S12) [3]

4.1.3 Answer to Research Question 1.3

RQ 1.3: Does either the IPSRT or the CPSRT better enhance preservice teachers' perceived instrumentality of instructional planning?

Perceived instrumentality of instructional planning, i.e. level of giving importance to planning was measured through a one-item test before the tool intervention and after intervention of each tool, via questionnaires. The item was “How important is writing a lesson plan to you as a future professional?”. It was a five Likert-type scale ranging from 1 (not at all important) to 5 (extremely important). Table 4.6 shows means and standard deviations of perceived instrumentality scores of the sections throughout the intervention. It was observed that it stayed above four out of five and it did not considerably increase or decrease.

The means of initial perceived instrumentality of instructional planning of the sections were compared with an independent samples t-test. The means of reported level of instrumentality across two groups were equal. Thus, the sections were homogenous in perceived instrumentality at the beginning of the intervention.

A mixed-design ANOVA was conducted to investigate which tool treatment better enhances the subjects' perceived instrumentality of lesson planning. The within-factor is the type of cognitive tool treatment (introduction of the tool, giving a model plan developed with the tool, group and individual in-class lesson planning activities, and tutoring by the instructor through written and/or oral feedback), the between factor is the section and the dependent variable is the perceived instrumentality. This analysis was run on the data of 32 subjects who filled in the perceived instrumentality measures in the questionnaires at the initial stage, and after each tool intervention. The means and standard deviations of perceived instrumentality scores, in this analysis, by treatment are presented in Table 4.7.

Among the results of mixed-design ANOVA, the multivariate options indicated that there was no significant tool treatment effect on the perceived instrumentality of lesson planning, Wilk's $\lambda = .95$, $F(2, 29) = .73$, $p = .49$, partial $\eta^2 = .05$. This means that neither of the tools have an effect on subjects' perceived instrumentality of instructional planning. The multivariate options also indicated no significant interaction effect between tool treatment and section, Wilk's $\lambda = .91$, $F(2, 29) = 1.49$, $p = .24$, partial $\eta^2 = .09$. This reveals that there was no order effect of the treatment of the tools on students' perceived instrumentality of the tools. It should be noted that the sections' initial instrumentality score was already above four out of five, before and after the intervention of the tools.

Table 4.6 Means and Standard Deviations of Perceived Instrumentality of Instructional Planning Scores

	SECTION 1	SECTION 2
	Initial PI	
N	16	16
M	4.38	4.38
SD	0.62	0.89
	PI after use of the first tool	
	CPSRT	IPSRT
N	16	16
M	4.38	4.69
SD	0.50	0.48
	PI after use of the second tool	
	IPSRT	CPSRT
N	16	16
M	4.25	4.75
SD	0.68	0.45

PI: Perceived Instrumentality Score of Lesson Planning

Table 4.7 Means and Standard Deviations of Perceived Instrumentality Scores in ANOVA

	M	SD	N
Initial PI	4.38	.75	
PI after use of CPSRT	4.53	.51	32
PI after use of IPSRT	4.50	.62	

PI: perceived Instrumentality of lesson planning

4.1.4 Answer to Research Question 1.4

RQ 1.4: What are the preservice teachers' perceptions of the contributions and challenges involved in using these tools for instructional planning?

In order to investigate the participants' perceptions of the contributions and challenges encountered in using the tools, the data were collected through questionnaires and semi-structured interviews.

After the intervention of each tool, the subjects were asked to rate the intervened tool for the following characteristics via questionnaires: helpfulness (1: not helpful at all to 5: extremely helpful), easy to use (1: not at all easy to 4: extremely easy), interesting (1: not at all interesting to 4: extremely interesting), flexible (1: not at all flexible to 4: extremely flexible), and recommendation of tool to a friend (1: not at all recommend to 4: highly recommend). The means and standard deviations of these characteristics rated for each tool are given in Table 4.8.

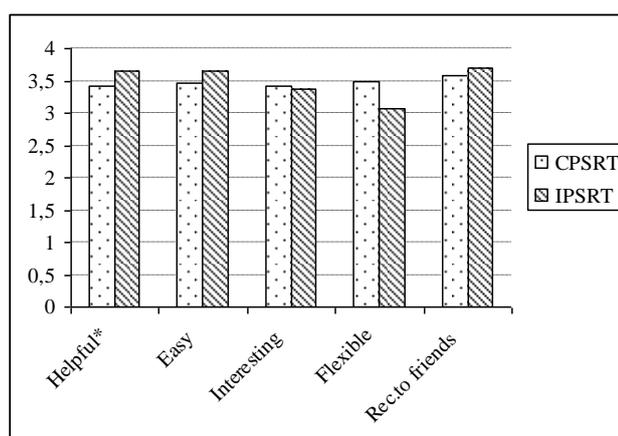
Table 4.8 Means and Standard Deviations of Dependent Variables for Each Tool

	Tool	M	SD	N
Helpful*	CPSRT	4.28	.46	32
	IPSRT	4.55	.50	
Easy	CPSRT	3.47	.62	
	IPSRT	3.66	.55	
Interesting	CPSRT	3.41	.76	
	IPSRT	3.38	.61	
Flexible	CPSRT	3.48	.64	
	IPSRT	3.06	.84	
Recommend to friends	CPSRT	3.59	.50	
	IPSRT	3.69	.47	

* It should be noted that helpful was rated out of five while the others were rated out of four.

The subjects seem to give value to both tools as the means of all the ratings for characteristics of both tools are already above three out of four, as seen in Figure 4.2. IPSRT was found as more helpful than CPSRT, while CPSRT was found more flexible than IPSRT. The means for the other characteristics of both tools were very close to each other, thus they gave similar value to the tools in terms of easiness, interestingness and worthiness to recommend others.

As for interviews, 15 participants' (interviewees') opinions about the contributions and challenges of using the tools were obtained through semi-structured interviews after the tool interventions and microteaching sessions were finished. The data was subjected to content-analysis. The results of the analysis of an open-ended item in the questionnaires and interviews were presented below.



• In order to provide comparability, helpful means were converted to scores out of four.

Figure 4.2 Means of Dependent Variables for Each Tool

In the interviews, the participants mentioned some contributions of these tools in general. These are usefulness in learning to develop lesson planning, benefits for enhancing self-regulatory strategies in planning and other benefits. Almost two-thirds of the participants stated that the tools were honestly useful and helpful in learning to develop lesson plans (S2, 10, 12, 24, 28, 40, 44, 46, 48). Five of the participants emphasized that they learned the lesson planning retentively (S9, 12, 28, 44, 46). Two participants emphasized that by means of these tools they transferred what they learned about the components of planning to the other courses in the following semester, even though the terminology changes in those courses (S9, 46). Another participant explained that engaging in details in these tools leads –at least– to bearing in mind the main template (S12). Two participants also indicated mastering how to plan lessons in two different theoretical approaches as benefits of the tools (S12, S44). One of them explained how these tools helped them plan in a specific theoretical approach, as follows:

... I have known what direct instruction and constructivist learning are; but, for example, I did not know the difference in preparing a plan with them [direct instruction and constructivist learning] ... actually, seeing two sample plans [with the cognitive tools] served to me in my view ... I mean, actually as I said, I have known the definitions, but we did not see any implementations of them [the tools], which helped very much as for me. (S44). [4]

More than half of the participants underlined that these tools are very efficient in terms of lesson planning practice (S10, 21, 24, 28, 40, 43, 44, 48). One of them stated that the tools explain well how the learning activities should be (S40). One third of participants mentioned some self-regulatory benefits of the tools as well (S2, 24, 43, 47, 48). One stressed the necessity of tools providing scaffolding for novice teachers,

They [cognitive tools] give clear ideas at least, [in planning] you can know what is existence or nonexistence and accordingly you can design your plan in a more systematic way, you know ... as far as I see, everything is clearly written [in the cognitive tools], since there is no part [in them], involving you to think or have difficulty and they are systematic in format, planning is very easy ... since you have [the tools on hand], you can write plan by directly considering [the tools], otherwise planning from mind requires experience. (S48) [5]

Two participants mentioned that the tools helped them detect deficiencies and revise their written plans (S2, 47). These are related to enabling self-monitoring during planning. Furthermore, another two participants stressed that the tools helped them develop organized and studious plans (S24, 48). These could be seen as the benefits for organization. Moreover, one participant stated that the tools provided her to assess the plan (S43), which is an indicator of providing self-evaluation after planning according to the criteria in the tool.

The participants also mentioned other benefits of the tools. Four participants implied that they give more importance to planning and they feel more motivated to engage in

planning process once they used the tools (S12, 24, 28, 44). One of them articulated this as follows:

[as template for planning] I have never seen such detailed [tools]. For all the time, the idea of 'what I write' was always in my mind. Since there are exceedingly details in the IPSRT, you are very at ease. Now, we are writing report and so on, in instructional goal, all right we solved it anymore, afterwards the followings were in the difficulty: what I do, where I go and how I do ... by now, I most importantly and seriously did these [lesson plans] and I learned much things. At the moment, I can make [lesson plan] very easily. (S28) [6]

Another three participants particularly stressed that their self-confidence in planning increased after using these tools (S10, 28, 48). Enabling one to think about learner characteristics (S43), speeding up the planning process (S44), and making the planning process easier (S48) were other appreciated contributions of the tools. On the other hand, regarding both tools, one participant stated that creating a learning activity is more difficult than using these tools (S10).

It should be noted that the tools were introduced to the participants with modeling, coaching and tutoring by the instructor. A two-hour instruction was given for each of the tools. Participants were provided with the tools and a sample lesson plan was developed as a model for each tool by the researcher. Throughout in-class activities for planning with the tools, the researcher observed participants and made tutoring for their planning, through oral communication. Furthermore, she gave written feedback to their first plans with each tool (group work), and to most of their second plans (individual work). Two participants emphasized that providing a sample plan developed on the basis of each tool made the tools clearer (S9, 44). One of them said, "At first, you have written the learning outcome of the lesson and a sample purpose under it, and so forth, existence of those samples was very good. For example, there is a sample plan prepared with IPSRT and also with CPSRT." (S44). Besides, she called attention to the contribution of tutoring, especially feedback for their initial plans by using each tool as follows:

You had already given feedback to the other plans [planning with the cognitive tools] that we had written. That feedback was helpful, too. Here, we were examining [planning] steps, even you were examining. Perhaps, we did not know very much the steps when we made [planning]. You said 'You can specify this very well by this means', 'You can specify that very well by that means' and our written plans were completely amended. It [tutoring process, especially feedback] covered everything. For example, we used to avoid many things in writing plan before. But by means of tutoring, we considered what would students make therein?, We make our plans by thinking and controlling the following: Did I make it? Was everything included or presented? Were these appropriate in there? These were very inclusive. (S44) [7]

In the questionnaires, the subjects also answered the open-ended question, asking for a list of the benefits of using the tool, after intervention for the related tool. The results of this question and the subjects' opinions of the IPSRT and CPSRT are given below.

4.1.4.1 Contributions and Challenges of IPSRT

In the questionnaires, the IPSRT was described as a “guide” (S8, 9, 24, 25), “not boring” (S45) and “linear” (S10). The subjects who firstly used the CPSRT compared the IPSRT with that tool as well. They reported that the IPSRT is more detailed (S3, 14), more well-prepared (S3), easier (S6, 28), more comprehensible and better applicable (S6) than the CPSRT.

With regard to the contributions of the IPSRT stated in the questionnaire after IPSRT, a detailed code list was drawn from the frequency analysis and integrative coding, as seen in Table 4.9. Basically, IPSRT seems to be beneficial for promoting self-regulatory strategies, planning in the traditional approach, mastering the components of planning in the traditional approach, and facilitating effective planning by shortening planning time and making the planning process easy. When the subjects' responses are analyzed, they imply that the IPSRT helped them in self-monitoring (60%), self-evaluation (30%), and organization (53%), which are the self-regulatory strategies that the tool was intended to provide. Acquiring planning skills in the traditional approach (37%) and self-confidence (5%) were the other benefits of IPSRT. When the reported benefits gathered under these categories were examined, it could be said that the tool worked best for self-monitoring, organization and acquiring planning skills in the traditional approach.

However, one participant implied that the IPSRT made no significant contribution to their planning process: “Instead of IPSRT, a small piece of paper which informs the titles that has to be in a lesson plan would be enough” (S24). In order to improve the tool, one of them (S5) suggested that some ready information regarding student characteristics should be added to the tools, to facilitate learner analysis.

The interview results included participants' perceptions of contributions and challenges about using the IPSRT in instructional planning. Several participants stated some properties of the IPSRT: it yields more teacher-centered plans (S12, 47), it is usable when the learning outcomes are measurable behaviors (S41), it enables more detailed planning (S21, 43), and it has a handy nature (S24, 27). As to its contributions, one third of the interviewees underlined its systematic, structured and familiar format to make planning step by step (S2, 21, 24, 28, 47). One of them mentioned this as:

As for me, the IPSRT is better ... how to make everything [in planning], everything already comes out when we write the procedure step by step, while considering goals with objectives in here, everything already comes out when the

Table 4.9 Benefits of the IPSRT Reported in the Questionnaire after the Treatment of IPSRT

	The subjects (N=43)	f	%
Self-monitoring		26	60
enabled me to plan each component one by one because of its step by step nature	S1, 3, 9, 18, 19, 20, 23, 28, 33, 48, 49	11	26
promoted self-monitoring in terms of realizing or checking deficiencies, mistakes as well as strengths	S6, 17, 31, 33, 34, 35, 40, 42	8	19
helped me understand what the content of the plan is supposed to include	S15, 16, 19, 29, 40	5	12
enabled me not to forget important things	S31, 35, 36, 47	4	9
helped me visualize the class beforehand and so make appropriate preparation, thus helped seeing the big picture	S5, 47	2	5
prevented me from being distracted away from the objectives and the topic	S41, 44	2	5
Self-evaluation		12	30
provided self-evaluation (evaluation of the plan according to the criteria in the tool)	S6, 10, 16, 18, 20, 29	6	14
helped me to plan the lesson effectively	S5, 8, 11, 15, 25, 48	6	14
Organization		23	53
helped me develop organized plans	S2, 10, 15, 23, 33, 41, 42	7	16
made preparing a plan easy	S6, 9, 11, 28, 44, 45, 46, 47	8	19
accelerated the planning process (decreased time necessary for lesson planning)	S11, 32, 33, 40	4	9
taught me to write a more detailed lesson plan	S13, 38	2	5
was a guide	S8, 9, 24, 25	4	9
Planning in traditional approach		16	37
helped me learn how to write lesson plans in traditional (systematic) approach	S21, 22, 23, 25	4	9
provided effective time allocation for phases of lesson	S30, 44, 48	3	7
helped me learn how to write goals and objectives	S12, 13, 14	3	7
helped me develop teaching and learning activities appropriate to learner level and needs	S6, 17, 32, 34, 44	5	12
helped me specify assessment strategy	S6, 10, 30	3	7
helped me become aware of necessity of relating to the previous lesson	S12	1	2
guided me to increase motivation	S44	1	2
helped me decide the instructional materials	S30	1	2
Self-confidence		2	5
gave me confidence in what I prepared (lesson plan) and belief that it is likely to work out	S28, 47	2	5

S: Student

procedure is started to write. Eventually, everything already comes into existence: lesson gets started in such a way, goes on to in this way, children are these, we do these activities, and lesson is closed like this. IPSRT works quite well. As for me, IPSRT is definitely better. (S27) [8]

Another one also explained why she liked IPSRT in this way:

IPSRT is the most beneficial, absolutely. Since it provides to see everything, namely what I can do, step by step. You would at easier if you knew to which steps to be followed ahead, when you were in [real] lesson. In the IPSRT, everything is already given, particularly given. There also exists in the CPSRT, but not this much detailed; [we] can see everything as a whole. Therefore, I think that the IPSRT is more beneficial. (S28) [9]

Four participants stressed that it makes the planning easier (S21, 24, 27, 28). On the other hand, a few participants reported some challenges posed by IPSRT. These are a feeling that one is making a plan for another person, not one's own use (S43), feeling that one is preparing a file for a shelf, but not for real life use (S21), and feeling that one is creativity is limited due to the linearity of giving information and then practicing it (S41).

4.1.4.2 Contributions and Challenges of CPSRT

In the questionnaires, the subjects described the CPSRT as “useful” (S14, 33), “student-centered” (S38), “well-prepared” (S3), “including every detail” (S3), and “having clear and meaningful parts” (S16). One of them, having used the IPSRT at first, stated that she found the CPSRT more beneficial than the IPSRT. For the contributions of this tool, subjects' responses were gathered under self-regulation strategies (self-evaluation, self-monitoring, organization, cognitive flexibility), planning skills in constructivist approach, and self-confidence, as seen in Table 4.10. When the reported benefits coded under each category are examined, the subjects implied that the CPSRT is beneficial for self-monitoring (50%), self-evaluation (40%), organization (30%) and acquiring planning skills (30%) in the constructivist approach.

In the questionnaires, few the subjects also mentioned some challenges of using the CPSRT. Two of them pointed to problems related to the “role of the instructor” and the “role of the student” parts. One implied that it is not necessary to write these parts if the plan will be used by the planner (S24), and the other stated that he felt writing the same things under these titles (S14). Other challenges were difficulties in controlling the plan with the CPSRT due to its length (S43), and in creating learning activities (S14). Another subject also pointed out a potential problem of using CPSRT in lesson planning as follow: “Since it is too flexible, it could be difficult to focus on the instructional purpose and the focus could digress from the instructional purpose. Thus, it should be used more carefully, compared to the IPSRT” (S41).

Table 4.10 Benefits of the CPSRT Reported in the Questionnaire after the Intervention of CPSRT

	The subjects (N=43)	f	%
Self-evaluation		17	40
provided self-evaluation	S1, 5, 7, 8, 10, 15, 18, 30, 33, 34, 36, 42, 43, 45	14	35
helped me plan more effective and efficient lessons	S26, 29, 36, 45, 47	5	12
Self-monitoring		20	50
enabled self-monitoring throughout lesson planning	S1, 6, 7, 17, 35	5	12
helped me realize what are done during lesson planning	S1, 2, 8, 9, 18, 20, 30, 33, 43, 46	10	23
reminded me what important things that I may have forgotten for a complete lesson plan	S3, 8, 13, 20, 35, 47	6	14
helped me add the things that can not come to my mind	S12, 13	2	5
enabled me to realize what challenges I will face with during instructional planning	S30	1	2
helped me improve the quality of the lesson plan	S5, 15	2	5
Organization		13	30
helped me organize lesson plans	S13, 19, 27, 35, 42	5	12
made planning process easy	S14, 16, 27, 28, 40	5	12
accelerated the planning (shortened the planning time)	S29, 32, 33	3	7
helped me make detailed and comprehensible lesson plans	S28	1	2
allowed me to understand and form easy transitions among phases in lesson	S47	1	2
Cognitive flexibility		4	9
helped me think from multifaceted-perspectives (flexible thinking)	S6, 15, 38, 41	4	9
Planning Skills in Constructivist Approach		13	30
enabled me to learn lesson planning in constructivist approach	S12, 36	2	5
helped me create interesting and real life-related learning activities by myself	S9, 20, 21, 24, 37, 43, 41	7	16
helped me create more learner-centered activities	S6, 26, 37, 38, 44	5	12
Self-confidence		1	2
increased self-confidence in planning since I planned it consciously	S46	1	2

S: Student

As for the interview results regarding using the CPSRT in lesson planning, four participants claimed that it has a task-oriented structure which involves explaining activity (S12, 21, 24, 47). It was described as more flexible (S41), practical and user-friendly (S21). Some participants stressed that the CPSRT is more appropriate for them to plan instruction (S21, 40, 41). One of them claimed this in the following way:

...but, after having familiarized with the constructivist one [CPSRT], I mean, I understood that the CPSRT is easier ... that parts [material list, objectives etc.] are not paid much attention. Actually, your learning activity starts, role of students, role of teachers continue in that way. Eventually, there is an assessment. The CPSRT is more logical and task-oriented, but the IPSRT is more focused on a certain structure. The IPSRT was as if intended to take and place on the file, but the CPSRT was as if for designing activity. (S21) [10]

Several participants touched upon contributions of the CPSRT to lesson planning. Two participants stated that the CPSRT can help promote creativity in the students (S21, 43). One participant stated that she learned how to put knowledge of constructivist theories into practice through planning with the CPSRT (S44). Another one claimed that it provided self-evaluation (S2).

As to the challenges of the CPSRT, one fifth of the participants articulated that this tool is very different from what they are accustomed to apply (S21, 27, 48). One of them, who firstly used IPSRT said,

...having difficulty is thing, the constructivist one [CPSRT] is alien to me, I mean, at first. Since we all the time get used to this IPSRT, you know, [you] write instructional goal, then [you] write objective, material, characteristics, afterwards since we write procedure and assessment, the IPSRT is familiar to us. It is easy to make plan with it. Actually, being novelty of the CPSRT was a little difficult at first. Namely, we always asked you such questions as ‘Does an activity start directly?’, ‘Do we write directly an activity?’. Yes, [we] write directly an activity, there is nothing else. (S21) [11]

Three participants also claimed that they could not understand several concepts under the subheadings of CPSRT (S27, 28, 48). One participant called attention to the fact that some items in CPSRT did not work due to the instructional purpose (S24) and another participant stated that the “role of instructor” and “role of student” parts are not necessary since the activity has already described them (S27). The necessity of thinking of an activity before using the CPSRT (S48) and difficulty in assessment of learning outcomes at critical thinking level (S47) were the other stated challenges of lesson planning with the CPSRT. One of the participants expressed his thoughts about CPSRT as follow:

CPSRT seemed to me as if it has no ground. The role of student, the role of teacher ... when we also did these assignments [plans], I said ‘what is this?’ ... actually it seemed as if these [role of student and teacher] were not necessary. ‘What is the role of student?’ ‘What is the role of teacher?’ these are some, that is to say, I do not know whether they are necessary or not ... After considering objectives and goals, I think, only necessary thing is learner characteristics. After

you know 'learner characteristics' completely, it seems to me like that we can easily write this procedure [learning activity part in CPSRT]. (S27) [12]

Regarding the use of tools in the field of computer education, only one participant stated that the IPSRT is the more appropriate tool for planning lessons in computer education (S46); on the other hand, three participants stressed that the CPSRT is more appropriate for this field (S12, 40, 47). One of them explained how they could be used in the field as follows:

The same tool should not be used all the time. However, as far as I understand, the CPSRT is more applicable for our department, since computer is activity-based, the CPSRT is always activity-based, but IPSRT is teacher-centered. ... For example, if we teach any topic for the first time, such as me, the excel formula [in Microsoft Excel], it is essential that I should use the IPSRT. Actually, I have to use it at least where at introduction, core part of the unit, but not throughout it ... I always teach them, okay sometimes I asked, got an answer, but I have to teach them to a certain extent. In other words, if they [students] did not know swimming, and put them into the sea, they were drowned. After teaching something, we can expect from them to discover different techniques by themselves. The activity of next week will be activity-based, hereafter since students have learned the formulas, I have students do exercise. The CPSRT should be used, computer is already very appropriate field, ours. There is such a difference. The IPSRT is complementary for the CPSRT, they should be together. The IPSRT should be used initially, which is very natural. Later, we can enrich [instructional method] by using the CPSRT in our activities. (S12) [13]

4.2 Contributions and Challenges of the Microteaching Activities to Improve Instructional Planning and Teaching Skills

In this section, the findings of the interview analysis are presented under the related research questions regarding microteaching. Parallel to the research questions, the findings are categorized into the following categories: microteaching planning process with tutoring, microteaching performance, assessing peers, being assessed by peers, and self-reflection assignment.

4.2.1 Answer to Research Question 2.1

RQ 2.1: What are the contributions and challenges presented by the tutoring used throughout microteaching planning process, for preservice teachers' instructional planning and teaching skills?

The microteaching planning process with tutoring, as a theme, has the following sub-categories: contributions of, challenges to and suggestions for the microteaching planning process with tutoring. These are given below.

4.2.1.1 Contributions of Microteaching Planning Process with Tutoring

Analysis of the qualitative data revealed that all the participants found the microteaching planning process with tutoring useful, and a majority of them focused on the

various contributions provided by this process. First of all, they seem to have learned how to design a do-able plan, because four of them said that they had not exactly known the process of lesson planning in order to design “an applicable plan” before this one-to-one tutoring. One of them confessed that, “Before receiving feedback, we considered the preparation of lesson planning for microteaching as thinking of a scenario without taking anything into consideration” (S12). Another one articulated, “We were disorderly, thinking of what to do for planning, one thing from the end, and one thing from the beginning [of the planning process] whereas there is an order in making a plan” (S44).

Secondly, twelve participants emphasized the contributions of this process to mastering the components of an instructional plan, which leads to drastic changes in their microteaching plans. They regarded components such as pupil characteristics, introduction to the lesson, activities, assessment, and plan B. Three participants emphasized that they had learned to consider and specify pupil characteristics such as their psychological development level, SES, readiness level, and age. Parallel to this, two participants attached great importance to introducing the lesson due to the characteristics of pupils, especially in low grade levels. According to one of them:

Before, we as a group have given a lesson, but this microteaching, requiring everybody to plan and teach individually, was for the first time in your course among the others. Accordingly, we did not actually know where to start, how to go on this planning process. ... For example, we were planning the end of the lesson before planning the introduction part, whereas, you should make presentation at first, you should design your activities, afterwards you should think ‘how should an assessment be appropriate for that activities?’ We had not known considering this order before. For example, instead of having students to add a picture in a routine Microsoft Word document, we had better give students a concept: ‘we are going to prepare an invitation card for celebration of 23 April National Sovereignty and Children's Feast’, ‘let’s add a picture!’ At that time, the children really engage in doing [adding a picture]. We did not know this difference. Aforetime, we used to give a lecture without using a concept or case: “open, add a picture from the menu”. (S44) [14]

Regarding designing teaching and learning activities, participants commented on the usefulness of the feedback from the instructor on selection and correct use of strategies, methods, techniques (S9, 12, 21, 43, 28), questions (S12), examples (S12, 24), instructional materials (S28), narrowing plan to a 20-minute period (S47), and making the topic concrete (S24, 47). One of them stressed, “rather, we got the feedback and corrections in connection with selecting topic, instructional materials, teaching procedure –how to start and stop, more specifically which strategy should be where” (S28). Another participant explained how the process helped them as follows:

The existence of continuous feedback in the planning process was already very good. Up to this semester, actually we did something, prepared lesson plans, but they were very structured. As planning template, there was a table ...there were

objectives, [learning] outcomes, in the table ... like a mathematical thing: you must write one outcome, you cannot provide another skill; they [learning outcomes] should be in accordance with subject matter. Afterwards, the activity, but there was no answer of 'what points should we consider in this activity?' Namely, we have never done so much detailed thing [planning] (S41) [15]

Besides, two participants stressed the contribution of receiving feedback for the assessment part of the microteaching plan (S10, 41). Both of them mentioned overcoming some difficulties in assessment after going through the microteaching planning process with tutoring. One of them expressed this in the following way:

Tutoring contributed to overcome the difficulties that I had in assessment part. In the phase of how can I make an assessment in the microteaching planning, I compulsorily tended to some concrete things, because I was anxious about how I could demonstrate that I made assessment in microteaching. However, afterward, I felt more relieved when you expressed me as, 'you can use Socratic method for that assessment in the planning'. Afterwards, I did it in that way. (S41) [16]

Thirdly, nine participants noted that the microteaching planning process with tutoring made critical contributions to their instructional planning skills: gaining know-how in lesson planning (S12, 21,28), retention of instructional planning skills (S9, 43), transferability of planning skills (S9, 41, 43, 44, 46) and transforming theory into practice (S21). More specifically, one-third of the participants underlined that they could transfer some skills in planning lessons to other courses, even if those courses use different terminology for planning components. Two of them related the gaining of retention of their lesson planning skills to focusing frequently on the lesson planning process. One participant illustrated this effect as follows:

Since we have learned the planning process, actually no matter you give me a day or 10 minutes, again I go through the same process by thinking in my mind. That is to say, again I think about attracting students' attention, motivating them, whether the samples given by me are appropriate for their level or not. To tell the truth, all of them stuck in my mind. In order to use them, I make something up. (S43) [17]

Fourthly, one-third of the participants said that after getting feedback, they made more structured, organized, clearer and detailed microteaching plans. Two of them stated that besides tutoring, the MPG also contributed to the microteaching planning process. One of them explained the difference between his first draft of a microteaching plan and the final microteaching plan as follows:

Generally speaking, there was a great difference; its length has become several pages. As far as I remember, the plan we brought at first was very limited. Namely, it was ambiguous in such way that what we would do and use at where such and such. In the final plan [revised through tutoring] included which sentences to be said to pupils, what to be told, how to begin and close were all written. 'How long does what [it] take?' was written, such and such. (S27). [18]

This elaboration made a contribution, yes, I am not good at being a teacher, but for example, when you do not have any template in your hand at first, ‘what you will do’ is not certain. Once you have a template [the MPG], ‘what you will do’ exist in it. While you are writing the plan, it [what to write] comes to your mind. Furthermore, as you receive feedback, you amend your plan further; then it gets better. In this way, everything is planned blow-by-blow before the lesson. (S27) [19]

Similarly, another one stated, “After getting feedback, we carefully consider all things –the sentences to be used, the children’s learning styles, their psychologies, questions to be asked, and examples” (S12).

Fifthly, two participants underlined the positive effect of tutoring in this process on their systematic preparation for microteaching, and attitudes towards the course. One participant talked about this process, “We were beginning to plan microteaching one-two weeks before the presentation day and we were getting ready for teaching. Starting from one or two weeks before, we made microteaching plans easily by dividing the lesson plan into parts. I like this implementation [tutoring]” (S27). The other one expressed how his attitudes towards the course were affected positively by means of tutoring and course design as:

After seeing your study, I took this course to my heart. Since [the course was] really systematic, you made tools, you checked weekly, legions of students. You tried to give feedback of above 50 students out. After I see this much endeavor of you, I could not dare to disregard this course. I carry on for one-man business; you carry on forty-man business. Namely, in this respect, I took serious ... since [course design and implementations] are not systematic; we usually experience time management problems in some other courses. However, since this course is taught systematically, business is divided, [business] time gradually for doing easily and being productive, you can learn further things. For these reasons ... you performed a successful job. I have never seen such a study in my student life. (S48) [20]

Finally, three participants stressed the positive effects of tutoring on their self-confidence regarding teaching. One of them stated, “This process increased our self-confidence in microteaching” (S10), and another said, “Since we made microteaching plans by receiving this much feedback, I believe that I will be much more self-confident in teaching practice in the next semester” (S41). Another one expressed her feelings as follow:

Tutoring absolutely contributed. Rather than written feedback, your direct oral feedback comes to my mind. As you remember, I was afraid of the topic that I had chosen for my activity, whether I could do it or not. You explained very well what and how I had to do, like ‘it would be better if it is in this way’. Frankly speaking, I felt know-how about performing it [microteaching] after getting your confirmation. Therefore, I consider it [oral feedback] as very beneficial for me. (S43) [21]

For the feedback given in this process, one participant emphasized that the feedback they received in this process was important, corrective and constructive (S21). Another one called attention to the benefits of feedbacks in learning the expectations of the instructor

regarding microteaching as well, “When we get feedback, we can be aware of instructor’s expectations and we also notice our mistakes at that point, since the instructor is a more knowledgeable person” (S41). Consequently, they all valued this process because of the six main reasons stated above.

4.2.1.2 Challenges of Microteaching Planning Process with Tutoring

One-third of the participants pointed out four types of issues in this process, whereas another third of the participants claimed that they experienced no problems with it (S2, 9, 28, 40, 46). Two of the issues reported are related to requiring both instructor and preservice teachers to spend too much time and effort in the preparation of microteaching (S2, 40, 43). One of the preservice teachers touched upon this issue:

I did not experience [any challenge], but you can experience them [laughing]. Giving feedback was taking long for you. You made a great effort for everybody. It [microteaching planning process with tutoring] required too much time and effort. Actually, we tried to write [a microteaching plan] in a very detailed way. ... In order to identify learner characteristics, we excessively conducted a literature review. In order to perform more different and more effective microteaching, I labouredly searched samples for practices of my microteaching topic. I mean, we also made an effort. For example, I remember that I read that book twice [Active Learning: 101 Strategies to Teach Any Subject] in order to decide which strategy was the most appropriate for my microteaching. (S43) [22]

The remaining challenges are related to feedback: delay in giving written feedback (S21) and scheduling problems in oral feedback (S12). One of the participants said, “Perhaps, we were a little late, but you were very busy, there was no problem, except for a delay in getting feedback” (S21). In brief, the challenges articulated were the microteaching planning process’s intensive time and effort demanding nature, delay in written feedback and a scheduling problem for oral feedback.

4.2.1.3 Suggestions for Microteaching Planning Process with Tutoring

The majority of participants made some suggestions concerning the challenges above and also concerning the other difficulties that should be overcome to improve the process of microteaching planning with tutoring. These suggestions could be categorized into two broad groups: feedback (written, oral and mixed -written and oral- feedback) and the MPG.

Firstly, two participants were in favor of written feedback due to being retentive and its necessity for static documents like reports (S21, 46). However, some participants were in favor of oral feedback, while being aware of its advantages and disadvantages. Seven participants explained that oral feedback is necessary particularly at initial stage of planning and should be frequently used since it is more responsive to their needs in selecting topic, activities, and active learning strategies from the textbook and (S9, 21, 28, 40, 43, 47, 48).

One of them said, “Before making a plan, oral feedback should be given in the phase of selecting a topic, strategy and activity” (S43). Furthermore, four participants specified the positive sides of oral feedback as taking less time, being easily-remembered and appropriate for dynamic tasks like lesson plans; and the negative sides as being forgettable and taking too much time for the instructor, considering the number of students (S21, 43, 46, 47).

As to mixed feedback, eight participants mentioned it. They generally talked about order, necessity and frequency of feedback, and customized feedback. One of them stressed the necessity of oral feedback in the early stages of planning and written feedback for written things:

As for me, both of them [written and oral feedback] should be given. I still remember that I was coming here, we discussed the activity. Actually you could not do this without talking, or you will communicate over the MSN. Actually, this [planning] requires mutual conversation about related topic. When I gave a report to you, okay, you can give written feedback to me for correction of something, but actually, if I spoke for more dynamic tasks, it is more logical to talk about this mutually, like ‘mm be it so’, ‘look, this can be possible, too’. Actually, new ideas can emerge. Getting together for talking about some dynamic topics [oral feedback] is better, but it [written feedback] is better for things like report or lesson plan via e-mail. Written feedback given for written things is better; actually written things are permanent. (S46) [23]

However, four of the participants touched on the order of mixed feedback that should be at first written and then oral (S10, 12, 21, 27). More specifically three of them advised that giving two written and one oral feedback should not be changed, considering the number of students taking this course (S10, 12, 27).

Secondly, one participant underlined the necessity of a plan B, in case of any possible difficulty in implementing the plan. According to the participant, there should be guidelines to making a plan B in the MPG (S41).

4.2.2 Answer to Research Question 2.2

RQ 2.2: What are the contributions and challenges presented by microteaching performance for preservice teachers’ instructional planning and teaching skills?

Microteaching performance includes the following sub-categories: lessons learned, becoming aware of aspects in instructional planning and teaching skills, contributions, challenges, and suggestions. These are discussed below.

4.2.2.1 Lessons Learned in Microteaching Performance for Instructional Planning and Teaching Skills

The qualitative data revealed that some lessons about instructional planning and teaching skills were learned by the participants during their own microteaching performance. Six participants called attention to the importance of carefully designing teaching and learning activities, examples, controlling instructional materials and considering time-

limitations on activities before the lesson due to the time restriction of microteaching. For example, two participants mentioned their own, regrettable, experiences in the introduction part of their microteaching. Here, in order to gain attention, they added some examples at their last minute to microteaching plan, and this led them to present a model of undesired behavior to the pupils (S21, 41), such as mentioning a difficulty of the principal, and doing an important task at the last minute. In addition, three of them complained about both technical problems and their regrets that they did not check the instructional materials and equipment before microteaching (S2, 24, 43). Two of them remembered bad experiences in these words: “A friend in my group was in trouble with an activity due to the nonexistence of software in the computer” (S43) and “There was a sound problem with the computer, no sound. I should have checked it” (S2).

4.2.2.2 Becoming Aware of Aspects in Instructional Planning and Teaching Skills

Most of the participants experienced many things that created a greater awareness about instructional planning and teaching skills. Thereby, they become aware of the processes of instructional planning and teaching. In this regard, they recognized the necessity for a lesson plan, the characteristics of a lesson plan, the originality and multifaceted nature of a real classroom, time management, and the characteristics of a teacher.

Four participants directed attention to the importance and usefulness of lesson planning in teaching (S10, 27, 47, 48). One of them stated, “I understood the importance of a lesson plan, as a life-belt... I understood the function of a lesson plan” (S10). Another one focused on the importance of dividing learning outcomes into teachable parts, giving real-life examples and explaining the assessment process in lesson planning, as follows:

I discovered many things in that 20-minute period. At first, I discerned thing so-called time flying by very quickly since my learning outcome [for microteaching] was a very broad one. I tried to teach the learning outcome within that 20-minute, maybe if there were 40 minutes, I could still not finish it all. For that reason, I learned the need to divide the outcome into [parts]. Secondly, I learned the necessity of eye contact with students since their interest [attention] can be easily lost due to being in the computer laboratory. Suddenly [students] can be drawn to the computer. They could not listen to me since that monitor is a tool hypnotizing the student. I learned it. Thirdly, I learned to be very critical of my assessment strategy since the answer to the following question ‘Did you understand?’ is ‘We got it’ with one voice. It is possible that they did not really understand. Or, how much did they understand? We finished [the assessment] in one go or with just one sentence. Accordingly, I learned the prime importance of assessment. Fourthly, examples to be given should absolutely be from [everyday] life. Last but not least, it is very difficult to teach everything planned in my mind. People can forget many things incubated in mind. I have heard from my friends that most of them forget ‘ah we forget, we could not perform what we wanted’. I prepared small mnemonic cards for me to use and I did not have any difficulty in using them. (S12) [24]

Seven participants discussed the complexity and multifaceted nature of the real classroom environment (S2, 9, 12, 21, 28, 41, 43), and five of them came to the conclusion that exactly implementing a lesson plan is not possible (S9, 12, 21, 28, 43). One of them gave an example for an unexpected thing in the classroom from his microteaching:

Actually, it was completely an impromptu thing, for example, the illness of Sevgi. I mean, I always kept that in my mind. That was a very great experience for me, she became ill under my eyes, her eyes grew pink, not able to cough, maybe in order not to disturb me ... I wanted her to go out and wash her face, yes it is possible, this could be easily taken normally in real life. That was a very great experience. The biggest contribution was that. Impromptu should be in coaching and teacher ship. That is to say, however much you prepare yourself, no matter how excellent a plan you make, the impromptu exists, which I learned. (S21) [25]

Three of them also stressed the originality of the classroom environment makes it difficult to exact implementing a lesson plan (S9, 12, 43). Consequently, three participants reached the decision that there must be a plan B, even if one has a lesson plan (S2, 41, 43). One of them expressed it in this way:

I would consider the possibility of several, perhaps, B choices oriented to planning. Since we made collusion with our friends, we played there, but children can say very different things. In computer lessons, children sometimes can get very bored, in particularly doing an activity, and an extra plan B should definitely exist; there should be extra assignments to give them. New activities, such and such should exist. I think these [above mentioned] should be further considered in the phase of putting planning into practice. (S41) [26]

On the other hand, the necessity of time management issue was also discerned by the five participants (S9, 10, 12, 28, 46). Three of them felt the necessity of using or balancing time more effectively as stipulated in instructional plan, but they knew that there could be an inconsistency between the actual (complexity and multifaceted) and the planned (artificial) environments, as mentioned before (S10, 12, 28).

The other sub-category that six participants focused on was that of the characteristics and roles of teachers. According to them, a teacher should be calm, not nervous, gentle, self-confident, continuously active, problem solver, empathetic, a monitor and a controller. Furthermore, a teacher should have a good diction, communication (eye contact, mimics, and gestures) and discussion skills (S10, 12, 21, 28, 41, 47).

4.2.2.3 Contributions of Microteaching Performance to Instructional Planning and Teaching Skills

All participants recognized the contributions of performing a microteaching performance. Five of them perceived experiencing the microteaching planning and implementing process as useful, even though their pupils were not authentic (S2, 12, 24, 47, 48). Three participants declared that preparing an instructional plan for microteaching and

implementing it were very different and effective (S2, 44, 48). One of them expressed this situation as follows: “We have written many plans so far, but we did not know what would happen when we would implement them..... implementing and experiencing this were very different” (S44). Another one added, “Practicing to write lesson plans was useful, but implementing the plan that we prepared was much more useful” (S48). Another five participants found that performing microteaching was useful in transforming theory into practice (S2, 10, 21, 44, 47). One of them thought, “I do not know that each topic transforms theory into practice, but I thought my implementation provided this” (S47). One of them emphasized the positive influence of their experience of planning with the cognitive tools for instructional planning on transforming theory to practice:

You make a plan and make it feasible. I can definitely describe it [microteaching] as the practice of theory. Further, that is already it. We already prepared plans with the help of tools [IPSRT and CPSRT], too. We absolutely had to catch that theory base anyway. (S2) [27]

However, another one emphasized that psychological developmental theories and learning theories could not be put into practice because of the inauthentic pupils in the microteaching sessions:

Since [microteaching] is like just a presentation [due to inauthentic pupils], when I taught twice, they understood. However, even when I taught three times, my real 10-year old pupil can say ‘teacher, I could not understand!’ We read the theory about them, how they learn at that level. We read also how they can not learn. In fact, they start to think abstractly at 10-11, but developmental and learning theories can not be put into practice since the pupils were unreal. Namely, our friends are all adults. They were playing roles; both I and they knew this. (S12) [28]

One fifth of the participants considered planning and performing microteaching as an advantage due to the fact that the pupils were their class-mates. Therefore, they underwent less anxiety and taught their micro lessons in a nonthreatening environment. One of them interpreted this as,

Actually, it [performing microteaching] was not negative, but its effects were positive. This is because I could get nervous in front of a real class, maybe for the first time, but here there were familiar faces, familiar names. Eventually, I easily started to teach since I do not think that they [pupils] do not stir up trouble or make difficulty, which turns into an advantage ... frankly, I do not have stage fright, but it is likely to be better for somebody who has stage fright to give lesson to friends at first (S48) [29]

Another one stated why she preferred to teach her friends at first as follows:

In microteaching, there is not real age group in front of us, just our friends. It is easier with them, as if one pretended to make a presentation. In other words, when you ask a question, you know that you will get its answer, not like with a normal student ... frankly speaking; it [performing microteaching with friends] was easier. If we were directly in front of the [real] students, we would get much

more nervous in our first teaching experience. You do not know the children, their characteristics ... namely; there is a positive transference of microteaching. As for me, not having a first experience in a real classroom is a very positive thing, as well. Our first teaching experience with our friends ... in a real environment, I could be more nervous, in a panic. (S44) [30]

Some of the participants become aware of the following during their microteaching performances: their strength and weaknesses and the importance of teaching procedure and activities (S12, 41, 46, 47). Two participants underlined the influence of “learning instructional planning components” on teaching performance. According to them, learning instructional plan components led to the formation a concept (template) in their minds regarding teaching (S41, 46). Besides, another two participants focused on meeting, implementing and learning the active learning strategies that they used during their microteaching. They also claimed that, since they learned how to use active learning strategies by doing, they could imagine how to use them in their professional life (S10, 21). One of them mentioned this as follows:

There was an Active Learning book, it mentioned 101 strategies. Actually, they partially have no basis, that is to say, seeing that not to put them into practice. Yet, I practiced ‘guest speaker’ in my microteaching. Its state of putting into practice was more beneficial. I mean, I did not just read and pass over it, I also practiced it in the lesson ... namely, it was more beneficial, I found the opportunity to experience it, not just read and pass on ... putting it into practice, adapting it into real life was very different for me. I can say that at least I have imagined or thought about how to use it [guest expert] throughout my schoolteaching in the next years. (S10) [31]

Considering the content that they have to teach in microteaching, almost all of the participants (except for S24) found it meaningful, appropriate and useful to teach learning outcomes from the Computer Education Curriculum for 1st-8th grade (MONE, 2006) in their microteaching episodes. As a contribution of microteaching with its content, several of them stressed its forward-looking contribution to professional experience (S12, 21, 28, 40, 44), and some of them stated that this content enabled them to prepare for the expectations of the curriculum (S10, 12, 41, 46, 47). One of them, who did not believe that her microteaching performance contributed anything to her teaching skills, emphasized its contribution to how to make lesson plans for the curriculum as follows:

Especially preparing a lesson plan... Before your course, when we were asked to prepare lesson plan, this happened in several times: we have our way, one learning outcome, absolutely no curriculum or so, according to our way... This is the learning outcome, this is my purpose, and these are my objectives. Actually, we were completely working according to our way, but now I know how I can prepare a lesson plan when I open the curriculum. In fact, even tough I do not write exactly these headings [in the tools], I know these should be in a lesson plan. I mean, this is also an important thing as for me. (S46) [32]

Another one emphasized the authenticity of microteaching activities in terms of usability of microteaching plans in their future professional work: “For instance, I can use that introductory lesson on the databases topic in the school where I will work, when I teach databases.” (S44).

On the other hand, some alternative suggestions for the content of microteaching were proposed by two participants. These are the use of other subjects, rather than the computer curriculum for 1st-8th grade, in order to release an authentic teacher performance (S48), and an authentic teaching and learning environment (S24). One of them explained their reason in this way:

Since most of the computer lessons are based on application [practice on the computer], we can hardly see an exposition in the recent times, similarly in the field teaching. Namely, we can not see a lot expository teaching. Only, ‘this and that one will be done’ and then started directly to application. That is to say, since this is a little bit an adverse condition for microteaching, the topic [inside of computer curriculum] can be emancipated. Let’s say, if someone did not find an appropriate topic, s/he could also select another topic [out of computer curriculum] showing one’s ability. Since we are going to observe a teaching performance in the end, ‘which topic will be presented’ is no matter for us. (S48) [33]

It should be noted that only one participant claimed that it would be better to teach something unfamiliar with their peers in order to create an authentic learning environment (S24).

4.2.2.4 Challenges of Microteaching Performance

Although almost all of the participants touched upon different dimensions of the challenges in microteaching performance, they can be gathered into the following major challenges: inauthentic pupils, anxiety and nervousness, problems with instructional materials, and being assessed. Even though four participants put up an argument that inauthentic pupils in microteaching had no negative effect on microteaching performance (S21, 41, 47, 48), eight participants claimed that inauthentic pupils negatively affected their microteaching performance (S10, 12, 24, 27, 28, 43, 44, 46). Most of the latter contended that inauthentic pupils impeded the presentation of a real and authentic teaching performance, and led to just a presentation; therefore, microteaching was perceived as an artificial task due to the inauthentic pupils (S10, 12, 24, 27, 28, 44, 46). Five participants maintained their claim in such a way that the inauthentic pupils made it impossible to provide motivation, to give more examples and clues, to display actual teaching skills, to consider the characteristics of pupils and to put theories into practice (S12, 24, 27, 28, 44). Two of them tried to justify their claim with comments such as:

The existence of inauthentic students was a little problematic in the beginning. Regarding examples...you can understand whether students understood or not,

by looking at their faces. Namely, accordingly you can go on to the lesson, show new example. However, since friends at that place [in microteaching] were there as a matter of course, you can not understand whether they understood the lesson or not from my point of view. The friends have already known the topic. You see, I would not know! You can not think that it is better whether you give an example or not. (S24) [34]

Since the students are completely inauthentic, I do not feel the need to scale the level down for their level in some places. Now, I gave a lesson in my apprenticeship last week. My mentor teacher was inside. For example, s/he was observing me, I could not give completely everything I want since I wanted to be alone with my students in my classroom, I wanted to be alone together with my students. I expect so, s/he noticed that s/he went out for a moment. S/he told me 'be alone for a while'. Everything, I could give examples I want, I could speak childishly, I spoke the language that they understand, they told me on the way out 'you are better than our teacher'. I felt very anxious, I was very ashamed, but ... you see, when you teach real students, this is something else, which revealed your real performance. But, if the students were inauthentic, some things would also be naturally unauthentic. Namely, I had such a problem, which affected my performance. (S12) [35]

Furthermore, two participants defined the small number of peers acting as pupils in the front of the other class-mates as a challenge, since they could not behave naturally (S21, 27). One of them said,

I have a problem in this [microteaching environment]. When I saw four persons, I could not treat them as children. I regarded them as my class-mates, and then I question the thing in my mind 'they have already known Photoshop, why have I been giving it?' Thereafter, I could not make the introduction part of the lesson, and the closure part. There was a video recording... I got very confused about it ... a course [taken by all students acting as pupils], since the environment crowded, everybody could act as children. They got spoiled... However, since there were four persons here, everything you did was being observed. Accordingly, because everybody behaved as quite official, I was not able to adapt. I could not do anything I think. Insomuch that, a friend has written in the assessment form that I said to a pupil 'come and do', I remembered that I said. I should not have said ... but I do not say normally. (S27) [36]

Another participant articulated her concerns about the possible challenges of teaching authentic students which they did not encounter in microteaching:

After all, we can not know how students will react to the activities that we prepared. Such as me, when I ask anything, I expect from them to draw a conclusion. You know, they can not find that answer in one way or another. You know, maybe, since they are our friends in microteaching, of course they are going to find it, but in real life perhaps when you do this, for example at that moment what can I do? What kind of clues [can I give] to get them to find reality? How should I guide them to receive the answer that I completely expected? I, for example, do not know these. (S44) [37]

Mostly due to the inauthentic pupils, three of the participants said that they did feel they had learned new about their teaching skills, or they did not learn anything in terms of teaching skills during their own microteaching (S40, 46, 48). One of them explained this situation by comparing it with her experience in field teaching:

That place was a very virtual environment, I mean, you know, I can not say that I learned this or that. But, now I do my apprenticeship, I learn in that place, which is quite different. You know, the environment is quite different in that place [in microteaching], everything depends on the role playing by the student. You know, I could not do something about my teaching skills in that place. You know, I was already very nervous. It [microteaching] is very different. As a result, as I said, since there is no real student, it was a very virtual environment. Such a thing [learning regarding teaching] did not come to my mind. However, for example, now in my apprenticeship, it is quite different ... I learn there, I really learn, but microteaching is a very virtual environment, in this respect I do not believe in acquiring anything about teaching skills in microteaching. (S46) [38]

Nevertheless, one participant confessed that although he thought of microteaching as illogical during the sessions, he has now realized its usefulness, after starting field teaching:

After the first presentation, I did not consider performing [microteaching] with inauthentic students as very effective. We started the apprenticeship in this semester and we have to give lessons; furthermore I gave a lesson this morning. While I was planning the lesson, I felt that the previous experience [in microteaching] was beneficial, even though it was not real. If this activity [performing microteaching] was not done owing to inauthentic performance, it would be worse for us. If [microteaching] was performed with real students, it would be better for us, but it was better than nothing at all. It was very successful for me in terms of resources at that moment. As I said, since the first semester, in the beginning, I had considered it unnecessary, but now I consider my experience in the microteaching when I give a real lesson. You know, but for [the microteaching experience], you have no experience, you have nothing to do. From this point of view, I think it is quite good, now. (S24) [39]

Anxiety and nervousness were the second most frequently mentioned challenges. Two thirds of the participants mentioned these problems (S9, 10, 12, 21, 27, 41, 43, 44, 46, 48). They put forward the following reasons for anxiety: existence of a recording video camera, existence of friends in the role of pupils and audience, existence of an instructor and teaching assistants, being assessed for grading and/or feedback, and time management. Being recorded on video, the student audience and time management issues were particularly touched upon. One participant revealed his feelings as: "It crosses your mind unavoidably. I wonder, how was it [his microteaching] captured on the video, did I say anything wrong?" (S27). Concerning the video camera, however, seven participants stated contrary opinions (S10, 27, 28, 40, 41, 44, 47). Four of them asserted that camera anxiety was diminished as time passed. Furthermore, two participants reproved their class-mates who were acting as audience (either just as observers or as assessors) for sometimes making a noise or conversing with each other (S28, 41), which negatively effected their performance. Moreover, according to four participants, being assessed increased their anxiety during microteaching (S10, 12, 43, 46). In addition, time was another factor increasing anxiety. Most of participants stated that time issues increased their anxiety and noted the following specific time-related problems: time management, duration of microteaching, the behavior of

the cameraman who reminded them of the time left, dependency of learning outcome and teaching activity on time. Four of them explained the time management difficulty as caused by a strict time restriction (20 minutes), and they stated that keeping time limitation in their minds negatively affected their microteaching performance (S9, 12, 21, 48). One of them explained this in this way:

Affecting my [microteaching] performance was that keeping time continuously in my mind. Actually, this, whether it is finished in time or not, made me feel uncomfortable. Getting cameramen's warning about time was affecting my performance. Maybe, I had to give some things instantly, instead of gradually. I gave them under stress, which completely affected. (S12) [40]

However, eight participants insisted on that a 20 minute-period was sufficient for microteaching due to the restricted learning outcomes. Furthermore, one of them stated that the time was sufficient because of the inauthentic pupils (S24). One participant, whose microteaching lasted 13 minutes, emphasized that the duration of microteaching depends on the scope of the learning outcome and on the teaching activity as follows:

[Duration of microteaching] is closely related with [learning] outcome and strategy applied. That is to say, there are strategies oriented to application of knowledge instructed. They take necessarily a certain time. For example, creating any table in Excel [Microsoft] in this way, something like that. You help students, monitor them thereat. Automatically, it is already allocated a-four-minute or similar time for this in plan. In mine, there was not any thing requiring such an application. I do not think so that time [duration of microteaching] can be prolonged. (S41) [41]

In addition to reasons for anxiety, four participants made some explanations about the negative effects of anxiety and nervousness they lived: forgetting to do some planned things and losing concentration even in a small problem (S24, 41, 46, 48). Among these, two of them were from the groups who performed microteaching firstly (S24, 46). Thus, they seemed to be much more negatively affected by anxiety, as one of them expressed:

Class-mates standing at the back, four or five persons on the front are actually located as pupils, camera shooting at the same time, you are lecturing. In actuality, I could not concentrate on the teaching since it was a quite virtual environment ... as I said, a quite virtual environment ... but, I mean, my nervousness was a personal thing [characteristic] at the least ... I was very nervous ... and also there was an effect of being the first group. (S46) [42]

With regard to instructional materials, five participants declared that they experienced no problems (S10, 27, 44, 46, 47), but three of them mentioned some problems with instructional materials, have been mentioned above under the lessons learned part (S2, 24, 43).

Being assessed in microteaching performance was seen as one of the challenges posed by microteaching. Two participants alleged that being assessed in microteaching

caused them to act in conformity with the assessment form and to act pleasantly (S12, 24). One of them expressed it in this way:

There can be a negative in feelings. It [being assessed] slightly decreases sincerity. For example, I could do some things in that place [microteaching] owing to feelings of being assessed. Maybe, a teacher sometimes should knit his/her eyebrows, maybe sometimes should speak harshly to provide classroom management. But, being assessed in that place hindered my some feelings. I mean, you tried to have a good point, which was from the point of my instructors. In my other friends' viewpoint, they will give my good sides plus, bad sides minus that I know. Also, there was not point anxiety. My all friends, loving or not loving me, will objectively assess, which I know. I was in this comforting. However, being assessed by instructors hindered some things not so much, but a little, but this should have been. (S12) [43]

On the other hand, seven participants said that there was no negative effect from being assessed on their microteaching performance (S2, 9, 21, 27, 28, 47, 48) due to the fact that they were self-confident since they had rehearsed before the microteaching (S48), and they disregarded the situation of being assessed (S28).

4.2.2.5 Suggestions to Improve the Microteaching Environment

Regarding the microteaching environment, i.e. the electronic classroom where microteaching episodes were performed, more than half of the participants stated that it provided necessary, sufficient and appropriate conditions (S2, 9, 10, 12, 40, 41, 47, 44). Three participants stated that it was an ideal environment under the given conditions (S12, 21, 24), though one-third of participants explained that the place did not provide an authentic or real environment for microteaching (S21, 24, 27, 28, 46).

In order to improve the microteaching environment, twelve participants made some suggestions for the challenges mentioned above and others. Eight of them said that giving a lesson to authentic pupils would lead to a real performance (S10, 12, 24, 27, 28, 40, 46, 47). In the case of not finding real students, some of the participants also made the following recommendations on how to make the environment more authentic: increasing the number of peers acting as pupils, getting all peers to act as pupils, assigning certain peers talented in role playing to act as pupils in all sessions, and specifying the roles of peers acting as pupils before the microteaching sessions (S21, 27, 28, 44). Furthermore, three participants proposed that the audience just observing or assessing microteaching should be removed from the microteaching environment to eliminate their negative effect (S21, 28, 41). Moreover, two participants proposed implementing microteaching in a computer laboratory environment in order to make the microteaching environment more real (S2, 21). Additionally, three participants recommended that the duration of microteaching should not be so strictly restricted (S40, 41, 46). One of them also advised that a consecutive course could be put in the CEIT curriculum (S24).

Besides these, there were some other suggestions for orientation prior to microteaching sessions, prescribed by two participants. One of them, who was in the first group to perform microteaching, suggested that a sample (model) microteaching and its assessment should be demonstrated before the microteaching activities:

A person firstly presenting did not know what s/he will do, came directly and performed it [microteaching]. If there was a sample presentation under your control, for example, if any of our friends tried to present any topic, if three of them were in the role of students. This is not a normal presentation, but you explicate how the presentation should be. For example, while the presenter was performing introduction part, you interrupted and said 'here, it is better to do so', instead of questions in questioning part, let's suppose that 'it is better to make assessment in written format' in this manner. Meanwhile presentation, if you had made evaluations, it could be more effective. For first presenter, everything was in ambiguity ... in this sense; there could be a trial presentation within an orientation process. There could be a thing, like how presentation will be?, how do students behave? ... in order to get through this process in the beginning, if there was an orientation, it would be better. (S24) [44]

The other participant indicated further needs, namely to watch sample microteaching videos, to listen to an experienced teacher and to provide a theory-related supplementary course book in addition to the textbook for active learning strategies (S12).

4.2.3 Answer to Research Question 2.3

RQ 2.3: What are the contributions and challenges presented by assessing peers' microteaching performance through the microteaching assessment form, for preservice teachers' instructional planning and teaching skills?

Assessing peers' microteaching performance includes the following sub-categories: the peer assessment form, strategies of assessing peers with the MAF, contributions of assessing peers with the MAF, issues in assessing peers' microteaching with the MAF, and suggestions. Each sub-category may also have sub-categories. These are given below.

4.2.3.1 Microteaching Assessment Form

Majority of the participants commented on the MAF, its strengths and weaknesses, and they made some suggestions for it and its use. Five participants emphasized some characteristics of the assessment form as strengths; those were that it is understandable, user-friendly, structured, and appropriate in terms of the criteria in the form (S2, 10, 12, 24, 40). Furthermore, two of them remarked that simply having an assessment form is better than assessing with a blank piece paper (S2, 40). They said:

This [assessment form] is in a quality that can give general framework. Namely, if it consisted of 100 items –my god! Is everything fit? or not?– absolutely it would not serve a purpose. If you gave a blank paper, there was possibility of not covering information [expected] in the general framework that you want. Student commented on introduction, but not commented on closure. That is to say, it should have been necessary to have some things that require writing about this [closure]. This was in it [assessment form], as a result I mean, in respect to

introduction, core and closure, writing these, writing at least these, something like that, is important. (S2) [45]

When we are observing [microteaching] without using [assessment] form, certainly some things come to our minds in a way that ‘aha! Look, [he or she] did not do that’ or ‘here was good, there was bad’. But, since we did not use it [form], actually observing [microteaching] was easier ... using form should be obligatory. Afterwards, [what they observe] do not come to our minds. Namely, in such a way that, ‘All right! Assess your friends in last ten minutes’ in the end of lesson. It can be such a thing in that place that, I mean, forgettable. Actually, even as we are observing any lesson, we take notes, in some way we should take notes, otherwise everything can be forgotten. Therefore, in order to take notes on good sides, bad sides of my friend in given lesson, actually [assessment form] is a necessary thing, a paper, a pencil for me in some way. Thence, being [assessment] form is certainly better than a blank paper and a pencil. (S40) [46]

Almost all participants made some prescriptive suggestions to improve the quality of the MAF and to amend it. These suggestions were about the back and front of the form. For the back, three of them proposed to reduce the number of the performance’s strongest and weakest points from two to one on the back page of the form (S2, 24, 44). One of them said, “The number of strongest and the weakest points to be stated should not be two. It could be the strongest and the weakest point” (S2). Another one stated that she had difficulty in finding a second strongest point:

[in the assessment form] the part of ‘two strongest sides and two weakest sides [of the microteaching]’ should have not specified as two, as for me. Inasmuch as, actually, I could not find second strongest side in some of them [microteachings]. You know, I had to add something else anymore. I mean, well, sometimes there can be four or five in that place, sometimes there can be one strongest side, as well. Actually, it is very changeable. When you lay ‘two’ down as a condition, I tried to find more than something as a strongest side. They can be more flexible. (S44) [47]

Furthermore, canceling the back page (to impede the repetition of comments on both the comments part and the back) (S28), and canceling the weakest points on the back page (S2) were also suggested. Regarding the weakest points, one of the interviewees commented as follows:

Now, frankly I could not write this [two weakest sides]. In the course of events, [s/he] wrote this, yes it is useful for her/his, but I could not feel that self-confidence [in writing two weakest sides]. In fact, you get an answer of two weakest sides therein [comments part on front page of form] for me, namely I could not answer the question of two weakest sides, but I exceedingly gave the answer to this question [two weakest sides] in comments part. I think such a way that it is necessary to include two weakest sides on the front page of form. You can write the strongest sides of student, since there can be many strongest sides, but, as to the weakest sides, any naming [specifying the weakest sides] is not formed, but you can not name completely herein [comments part] indirectly, you can make criticism. (S2) [48]

Regarding the front of the form, three participants recommended that it should include a space in which to write the general properties of the microteaching episodes such

as grade level and learning outcome (S12, 43, 48). Furthermore, two participants advised making the items (statements) detailed so as to explain exactly what they mean (S12, 46) and changing the order of items (S41). In addition, four participants were in favor of inserting additional items on individual differences, on the educational technology used, and a part asking for “anything else that you want to add” (S2, 27, 43, 44). What is more, for the structure of the rating part, three participants gave some advice on the form, such as making the rating part more accurate by decreasing the intervals, adding an option to leave the point blank, needing to focus on the teacher’s behavior and strategies rather than on that of the students, and adding “leading questions” to facilitate filling in the comments part in more detail (S10, 12, 46).

4.2.3.2 Strategies of Assessing Peers with the Microteaching Assessment Form

Nearly all the interviewees talked about the procedure of assessing their peers through the MAF. Thirteen of them discussed the rating part in the assessment form and its filling. Nine participants declared that they generally filled in the rating part simultaneously while observing the microteaching (S9, 10, 21, 24, 40, 44, 45, 47, 48). There were different strategies developed by the interviewees to fill in the rating part. As explained by the participants, four of them also took notes during the microteaching and then assessed the performance in the light of these notes (S2, 9, 28, 40). One of them stated that she generally marked the items successively and if she missed something, then she asked a friend (S40). Two participants clarified his/her filling strategy as filling in the outward appearance at first, and filling in the time last (S21, 46). The other participants who gave information on how they filled it in followed the following strategies: firstly, marking the first two options, and then marking the closure part, finally filling in the other parts when the microteaching was finished (S41), just watching for the first 10 minutes, then filling in the form (S12), filling in simultaneously the introduction for the first 3 minutes, then marking some specific things during the microteaching, and finally assessing the performance at the end (S27), and filling in the unfinished parts in 2-3 minutes (S44).

Along with the rating part, twelve participants mentioned the comments part, and the two open-ended questions at the back of the assessment form and their filling. Similar to rating part, participants followed different strategies in completing this part. They settled the following strategies: filling the back page at the end (S9, 27, 28, 41, 48), trying to write reasons for their scores in the comment part for rated items (S41, 44, 47), writing prescriptive comments in the comments part (S27, 46, 48), and writing the important behavior and developments as comments after the microteaching (S9, 12, 21). One of the participants said:

I used the comments part in almost all of them [the assessment forms he filled in], I wrote, for instance, 'these materials using was good', 'instead of these materials, if you used this, it would be better'. When everything was nice, I was writing 'everything is nice'. At least, I wrote one sentence. (S27) [49]

Three of them also emphasized that they tried to be as objective as possible during the filling in (S41, 43, 48), and focused on teaching procedure and behaviors rather than content (S48) and performer's individual characteristics (S41).

4.2.3.3 Contributions of Assessing Peers with Microteaching Assessment Form

Most of the participants believed that the assessing process made a contribution to their knowledge and skills about instructional planning and teaching. Eleven participants perceived the process of assessing peers through the MAF as useful (S9, 10, 24, 27, 28, 40, 41, 44, 46, 47, 48). Three participants claimed that this process gave them critical thinking skills (S12, 43, 46). One of them said, "All right, for example, I was nervous in my microteaching performance, nothing [no contribution] happened, but while we were observing microteaching performances of other people, since we thought so critically that 'mm it would be better if s/he had done in this way, it could be like this' [microteaching] contributed in this way" (S46). Two of the participants stressed a point that frequently using the microteaching assessment form taught them the lesson planning process (S43, 48). Most of the participants emphasized the benefits of comparatively observing other people's microteachings from their own point of view. A majority of participants declared that observing others in such a way encouraged them to model and internalize the strong points and to draw lesson from the weak points in the others' microteaching (S10, 12, 27, 28, 40, 41, 43, 44, 46, 48). One of them said, "It [assessing peers] is a really useful thing. People see mistakes or the good sides of others, take the good sides and avoid the mistakes, namely it is a really good thing" (S27). Four participants underlined the empathetic approach in putting oneself in the performers' position in the assessing process, and its positive effect on one's own microteaching (S9, 21, 41, 43). One of them articulated this as:

Observing as assessor is certainly more useful. Understanding expectations, developing empathy, testing what we do by ourselves... We can also develop new things 'I taught this in such way'. Also, we can develop new alternatives 'it would be better if s/he had done this, if s/he had done that'. These are plus values added into things that we can remember and do in our potential future teaching experiences. (S41) [50]

Furthermore, nine participants emphasized the importance of the MAF for fixing their attention on the microteaching, thus in enabling them to follow the microteaching episodes (S9, 10, 21, 28, 40, 41, 44, 47, 48). In this regard, assessing peers with the MAF enabled the assessors to become cognitively active observers (S9, 28, 40), to be motivated to observe others' microteaching (extrinsic motivation) (S21, 44, 47), and to observe even

uninteresting microteaching episodes (S21, 44). One of them emphasized the role of this form in focusing attention as follows:

In other way [without assessment], to tell the truth, it is really boring, nobody observes presenters. Assessment is great factor. That is, I will observe this, regarding assessment as necessary; making an assessment by concentrating is a different thing ... the truth is that, you observe more carefully when you assess. (S44) [51]

Moreover, two-thirds of the participants asserted that assessing peers with the MAF provided a more detailed and cautious assessment (S10, 21, 24, 28, 40, 41, 43, 44, 47, 48). One of them said, “when we filled in the form, we assessed more carefully, I mean, [we] took heavy responsibility and we tried to observe all the phases of it [microteaching]” (S41). Another one put it into words as, [when filling in the assessment form] you feel your participation in the lesson, which is a nice thing in the end. Since we are still students, we have the psychology of students. You know, the form is given to us and you will assess your friend, you are also an integral part of the lesson.” (S44). One of them emphasized the form’s contribution to this process as follows:

When observing without the form, we can completely follow the lesson, but there is a such an advantage of observing the lesson with form that I can benefit from the form in a way that since everything, almost all components are included in detail in the from; I discern any detail or any thing [in the assessment form] that for example, I paid no attention or not to came my mind, ‘s/he really did it’ or ‘s/he did not this’. This [assessing from] is a good thing for both my friend [being assessed] and for me. That is to say, I could catch escaping from the attention of something. (S40) [52]

Two participants called attention to the more objective assessment resulting from using the MAF (S27, 48). Two other participants accentuated the understanding of teacher qualifications expected from them (S10, 41). Furthermore, one participant stressed that assessing peers with the assessment form gave them a chance to examine the whole teaching process in all its details (S28).

Two participants, who were almost always in the pupil role, touched on an aspect of assessing peers in the role of a pupil. One stated that when they were in the role of pupils, they did not get bored (S44) and they took responsibility for the performer and contributed to a microteaching episode (S44, 46). Yet, they explained two negative effects of being in the role of pupil while assessing the performer. First, they could not be fair in assessment since they were an integral part of the microteaching performance (S44). Second, since peers in the role of pupils could not simultaneously assess the performer, they had a difficulty in delayed assessment, and thus they forgot some parts of the microteaching (S46). One of them said that they are integral part of the performance and thus cannot assess objectively:

When you are in the position of student, maybe you are not able to evaluate objectively the lesson that you are in. I mean, I am thinking, [the microteaching] goes stoddily, thereupon I ask any thing at least, s/he make an explanation, you know, I was asking any thing to have s/he speak with students. This was happened owing to necessity. As you know, you think that the presenter is going to get low mark by reason of no interaction with students. In order to compensate this deficiency, you feel the need of intervention, I mean, I frankly felt. (S44) [53]

In addition to being in pupil roles, nine of the participants drew attention to the procedure of observing microteaching performers without filling in a MAF (S12, 21, 27, 40, 43, 44, 46, 47, 48). Each week, they were supposed to assess only one of three microteaching episodes and to just observe the other two without filling in any assessment form. They were also observing and assessing the microteaching videos of the other section in recitation hours, in the same way. Four of them indicated some positive aspects of just observing microteaching without assessment. They regarded this kind of observation as useful due to seeing how to apply different teaching procedures, including strategies, methods, techniques and tactics (S48). Three of them also found this kind of observation beneficial due to focusing on just the activities and content without the interruption of form filling (S40, 46, 48). However, six of the participants considered just observing microteaching as a problem (S12, 21, 27, 43, 44, 47). In this case, peers were in the role of an audience, but did not make an assessment with the form. Five of them discussed that just observing a microteaching episode led to general and superficial, not insightful observations (S12, 27, 43, 44, 47), and this gave rise to missing some parts of the microteaching. This issue engendered the following: focusing only on discourse and communication skills (S47), not observing carefully, getting very bored (S44) and paying attention only to the successful microteaching sessions (S21, 44).

4.2.3.4 Issues of Assessing Peers with the Microteaching Assessment Form

Seven participants focused on problematic issues in assessing peers with the assessment form. Five of them mentioned not being able to assess friends fairly (S2, 9, 21, 41, 43). They said that they tended to give rate the performer higher than s/he deserves since they are their friends, they consider the performer's anxiety, and they try not to discourage the performer. In this way, one of them explained that he aimed to construct good self-esteem in the performer's mind as follows:

I filled them in [assessment forms], but the answer to the question of 'was I very honest?' 'Yes, I was honest', but sometimes I got bored, and did not mark objectively. For example, I did not mark 'good' at all in these part. I always marked 'very good'. I wrote my all discourses in those places [comments part]. I mean, this would be a bad thing, I have never reflected this [comments part] on these parts [rating parts] since value judgment is developed by student that judges her/himself by firstly looking at this part [the rating] and I want to

develop a good value judgment. If student considered more meaningfully, s/he have already focused on this [comments part]. I think that student understands herein what I want to say. At first, I mean, if required thing for her/him was a mark, there was such a motivation if any, s/he would see all marks as “very good” on rating part, being motivated, but [I think that] s/he pays attention to my humble comments herein. (S2) [54]

Another one explained the influence of friendship and empathetic approach on assessment:

At first, there is such a feeling [being assessed] that s/he is my friend. All right, although some friends give such marks as incompetent, not at all, [s/he is] my friend. I do not mark as below three or two for her/him. I have always given the best mark to them [friends] that performed very well. Actually, I gave good marks to them that performed averagely and insufficiently. For example, my assessment affects her/him. Among friends, there could be perfectionist. I mean, [they] can be an objective in the assessment, but I can not be an objective, s/he is my friend. How much realistic, which is different, actually it [assessments] get human feel very nice if it was good. (S21) [55]

On the other hand, one of them called attention to the difficulty of removing the influence of communication skills though empathetic approach in assessment:

Actually, it [relativity in assessment] is possible in most of the people, the concept of ‘very good’ in minds of most people is generally for presenters having strong communication skills, ‘hmm, [s/he] superbly teach’. Actually other one can not be very effective in communication skills, although s/he implements [teaching] method in a very clear way. Nonetheless, not very good, but good is written by reason of communication skills. Maybe, there could be a little problem in this issue ... when we are assessing our friends, actually we do not depend largely on a thing that s/he implemented method very well, actually we are further affected from her/his communication skills in filling this form ... some of our friends could study very hard, for example although they implemented method very well, it seems that we did them a little bit injustice....A little, we put ourselves in one's place in many instances, as a matter of fact that for example; there were many things that I wrote as average, I transformed into good. I frequently tried to make [assessment] free from personal characteristics [communication skills]. In my opinion, I tried to give weight to method. But, reducing the impression of it [communication skills] in that process, and actually it is not easy to be isolated from its effect. (S41) [56]

Some other problematic issues uttered by three participants were as follow: not completely understanding whether students in the role of pupils did the activities or not (S10), getting bored if the activity parts were unvoiced and too long (S44), and having difficulty in finding the two strongest and two weakest points for all microteaching sessions (S2, 24, 40, 44), since they perceive the microteaching performances as average (S40). Furthermore, one participant mentioned as a matter of priority that internalization of the template of rating in the assessment form confined their creativity (S41).

The last issue regarding assessing microteaching with the assessment form is the corruption of observation due to form filling (S2, S40). One of the interviewees stated both

the reason and the possible solution as being not familiar with the assessment form and knowing it too well, respectively, in his following comment:

Since you always follow the form, there are some places that you lose some course of events, you miss [some things] with a good or bad grace. Say the least; I experienced so, since I am not acquainted with this form. I mean, if I knew it, I would fill [it] without looking through, by concentrating on presentation, but I use it twice a week. Now, I am reading [from assessment form], did s/he do this? Such an anxiety was created. Maybe, any way of minimizing this [anxiety] is to become familiar with this form. No need to read it [assessment form], there is a need to pass it without missing the [microteaching] presentation by knowing general framework of the form and rating [simultaneously items in] it ... sometimes, when I could not concentrate on presentation very well, I read here and mark, does it [microteaching] really fit this flow [in the assessment form]. Maybe I assessed this. The flow changed from content into context. Does it flow or to what extent does it flow? I mean, [I was able to assess] merely the general framework [of the form]. (S2) [57]

The other one stressed that writing comments on the form resulted in a corruption of the observation, she also gave her solution to this, as follows:

While we are filling the form, frankly our attention was distracted. 'Look, s/he did this part'; just at that moment I was writing related to this part, there was another part missed. However, there is such a thing that afterward since actually keeping in mind is difficult, you have to fill simultaneously. But, of course, sometimes I could miss the lesson [microteaching] when intending to write some points, assuming that 'look, it was like this in that place', 'I add a suggestion'. In reality, while we are writing it, thereat we can be missing what presenting. And also, there could be disconnection, I mean, obviously as far as I remembered. Namely, on the one hand, when we are filling it, on the other hand, sometimes focusing on what the presenter presents could give cause for disconnections. We compensated these disconnections from each other. For example, 'Ece, I missed here, did you catch this? Did you do this?' in this way. (S40) [58]

4.2.3.5 Suggestions for Assessing Peers with the Microteaching Assessment Form

Most of the participants insisted that the MAF should continue to be used in this course, as it is necessary (S2, 10, 12, 21, 24, 27, 28, 40, 41, 44, 47, 48). Some of their comments are given below:

As for me, this assessment type [assessment form] should be certainly implemented since we can regard it as a factor increasing motivation for both the presenter and assessor who started to observe a bit more carefully, clear. I mean when you consider it [assessment form] in every respect, it is a beneficial in any case. [This is] a technique and strategy that I hang up, as well. (S48) [59]

[Assessment form] should continue, should certainly continue. I mean, we observe all for nothing in that time [without assessment form]. Even, lesson [microteaching] would not be observed, everything would not be paid attention. I mean, herein of necessity, even other friends [assessors] do not want to make assessment; I bet that unawares they acquire many things. Since, when you present, you consider this form. Since, in the form, we take notes and write explanations related to what presenters do, they [notes and explanations] come to our minds, consider them. In this regard, [assessment with form] is very beneficial. In short, these help us unawares. (S24) [60]

[Assessment form] should continue. Although still there is anyone, marking average, good and best as far as possible, like me; there are those who really mark objectively ... At first, although it [filling assessment form] appears to be grinding [work], reading these is nice. Since you get aware of what is going on. Even if looking at with the eye of friend, assessment is assessment. Because, if you asked your any friend to make assessment [for your presentation], s/he would say 'forget about it'. However, this is not findable thing, as for me this should certainly exist. (S21) [61]

One-third of the participants made some suggestions concerning assessing peers' microteaching with the assessment form. Three of them proposed that all participants should assess only one performer in each session in future microteaching implementations in this course (S2, 21, 47). In such a case, microteaching practice, including the format of presenting, observing and assessing should be followed and remain in full force and effect with motivation. On the other hand, in order to keep attention focused on the microteaching sessions, two participants proposed that all participants should assess all microteachings with the assessment form (S9, 28). Another participant advised that peers should not give offensive feedback to performers (S21). One participant recommended that the instructor and teaching assistants should behave empathetically and give slightly higher scores than the microteaching performers deserved, considering the students' anxiety and nervousness (S9).

4.2.4 Answer to Research Question 2.4

RQ 2.4: What are the contributions and challenges presented by being assessed through the microteaching assessment form, for preservice teachers' instructional planning and microteaching skills?

Being assessed has the following sub-categories: the contributions of being assessed with the MAF, feedback from the instructor and teaching assistants, feedback from peers, comparing feedbacks from the instructor, teaching assistants and peers, issues in being assessed with the MAF, preferences for written or oral feedback to microteaching, suggestions for assessment. Each sub-category may also have its own sub-categories. These are given respectively below.

4.2.4.1 Contributions of Being Assessed with Microteaching Assessment Form

Approximately all of the participants pointed out that being assessed with a microteaching assessment form ultimately improved their teaching skills and performance. Four participants affirmed that being assessed with the form provided fair assessments, to the ratio of around ninety percent (S9, 44, 47, 48). Two participants attracted attention to the provision of analytic or detailed feedback by the assessment form (S12, 43). One of them articulated this as:

I attach great importance to such things. Frankly speaking, I want positive or negative criticisms ... what are my weak sides, what are my really strong sides? Or, is there any fault in any place when I present. In as much as you spend this

much effort that I will also spend this much effort for another job tomorrow. If I did not know my fault herein, I would always continue with my fault, or if I did not get aware of my good behavior that is really effective, I would also do so in the other [next] one, because it [my behavior] is effective for me, but maybe it is not for so many people. Thence, I read these assessments again and again ... [They] wrote very good things. I think they are very important. (S43) [62]

Seven of them said that negative feedback gave them an opportunity to recognize weak points, which were important lessons, learned or experienced (S2, 10, 12, 27, 41, 43, 47). Three participants emphasized the importance of positive feedback that encouraged them and increased their self-confidence (S10, 12, 21). One of them said,

I get feedback from my friends. I took further courage for my good points [sides], gained strength. I got an opportunity of learning my deficient points, maybe I will never learn if not [assessed]. Roughly speaking, it would be called as, 'this lesson was presented well, nine out of ten', but maybe, I will not learn 'why a point is absent' ... I felt some things that were true or false. They were proved. Namely, I see them. (S12) [63]

Another two participants declared how feedback on the assessment forms made them aware of their mistakes:

Maybe, I would ignore, disregard mistakes that I made at first, but getting same thing [feedback] from many people led me to understand something that really needs to be corrected ... although I did not get very much negative feedback, received negative ones [feedbacks] were very consistent. Namely, they [negative feedback] were in all [feedback]. Therefore, they were very decisive for me. (S41) [64]

Rather than teaching the theme of 'Chastity and 1980', if you taught something peculiar to children, it could be.... Actually, this almost existed in all comments, including you. Maybe, this is a reality that I do not want to accept ... these assessments provided me with anything that I should not have blinded to insist on anything. Consequently, assessments provide me with the necessity of selecting very well the theme. In order to select the theme, you should know the class that you participate in ... namely, what do they [target audience] enjoy much more? (S2) [65]

Two participants recognized the great importance of facing up to one's own or self-evaluation (S12, 46). Furthermore, one participant claimed to learn how she was perceived by others and about how projected her own personality (S41). Moreover, three participants mentioned the contribution of considering the rating part in the assessment form in preparing a microteaching session microteaching session (S10, 12, 24) and one participant expressed that the assessing process also motivated the performer, due to knowing that s/he was being assessed (S48). One of them said, "once some things are set, I mean, I think in advance that I will teach a good lesson, now I will teach a good lesson by considering this, this, this item, since I will be assessed ... I should pay attention to all these items" (S12). Another participant stressed that by means of being assessed she learned that others could have different viewpoints, from the assessments:

At least, I can undoubtedly say that it [being assessed] was useful. There were already very few criticisms in my assessment forms. While you are reading them, you started to defend yourself, then when you think that they can be right, when you watch [your microteaching episode] in this respect, you think that they can be right. (S43) [66]

4.2.4.2 Feedback from Instructor and Teaching Assistants

Eleven participants dealt with feedback from the instructor and teaching assistants. Nine of them noted that they got professional, correct, useful, and detailed feedback from the instructor as an expert (S2, 10, 12, 21, 40, 41, 44, 46, 48). Furthermore, three participants expressed that more corrective, guiding, realistic and effective feedback was also given by the instructor and teaching assistants (S12, 27, 41). Moreover, five participants specified that the most objective assessment was done by the instructor and teaching assistants (S9, 12, 21, 27, 44). In addition, four participants regarded feedback given by the instructor and teaching assistants as more important than that of peers (S2, 21, 44, 46). One of them explained the reasons for this as follows:

In respect to quality, there was an incredible gap between [peers and academic staff]. Eventually, there were more professional ones, who do not use their emotions in one side, [they are] academic [instructor] and research assistants [academic staff]. Namely, they do not need to use their emotions in this field because of being sufficiently professional. That is, they know what should be assessed. In other side, there are ones who think that should I use my emotions, to what extent should I use my emotions, what I do. However, there is an audience [academic staff] completely isolated from these in one side ... I assessed my microteaching in two dimensions. First, what experts think about me, I mean, was it okay? Did I generally meet the expectation? Second, could I appeal to them [friends]. Actually, the quality of assessment [feedback] was incredibly different ... even making a sentence is very important, I mean, even this sentence that you made. Formulating a critical sentence in positive way is a success, which requires professionalism. This is a thing that instead of writing very bad, needs to be amended. I can say that I received further constructive criticisms from you ... our friends are not very professional in this regard, they have to use their emotions ... namely, being isolated from these, an objective assessment is provided with professionalism, which was given by academic staff ... high quality of feedbacks given by instructor is eminently normal, thereby they [feedbacks of instructor] were much more important for me. I can say that they made greater contribution. There was a huge difference in my approaches to comments given by students and instructor. (S2) [67]

4.2.4.3 Feedback from Peers

Six participants interpreted the feedback given by their peers. One participant stressed that peers brought different viewpoints in their feedbacks about the microteaching performance (S12). Three of them called attention to their friends' assessments of the microteaching performance; in this sense, feedback from the microteaching created an opportunity to understand the strengths and weaknesses of the microteaching performance (S21, 28, 43). Furthermore, most of them stated that there were few assessment forms filled in carelessly or with inadequate feedback. One participant also praised the studious and

careful explanations given in the feedback from the majority of peers (S44). Another participant claimed that fellow students who were not personal friends filled in the assessment forms more fairly; therefore, their feedback was more important than feedback from close friends (S24).

4.2.4.4 Comparing Feedback from the Instructor, Teaching Assistants and Peers

Twelve participants compared the feedback given by the instructor, the teaching assistants and their peers. Seven of them asserted that feedback from the instructor, teaching assistants and peers was consistent and parallel (S10, 21, 40, 41, 43, 44, 47). More specifically, two participants noted that the individual feedbacks of peers, the instructor, and teaching assistants overlapped if they were given by peers who think critically and filled the form studiously (S24, 41). Furthermore, another three participants noted that overlapping feedbacks were about salient and certain other parts of the microteaching performance (S9, 28, 48). However, one participant said that in spite of discrepancies in the corrective feedback rates of the academic staff and peers, they were complementary in terms of indicating deficiencies (S12).

4.2.4.5 Problems in Being Assessed with the Microteaching Assessment Form

Thirteen participants gave voice to problematic issues arising from being assessed with the MAF, such as contradictions in feedback, problematic form-filling habits, and unfair assessment. Three of them talked about getting contradictory feedback on the same topic from peers, which was surprising and originated from different viewpoints of the peers (S9, 21, 48). Two participants also specified that sometimes there could be a contradiction between assessments made through differences in observing from the real class or from the video (S12, 48). Another participant explained this by claiming that sometimes the assessor could not understand or follow the microteaching (S47).

There were also some objections to the problematic form-filling habits of the peers. Three of the participants stated that their peers left the right-hand side of the assessment form -the comments part- blank or they filled this part only superficially (S9, 10, 48). Three participants emphasized that their peers did not explain the reasons for their ratings in the comments part (S9, 10, 44). Another participant stated that peers did not clearly specify the missing points in microteaching (S28), but generally specified superficial points and striking things (S10). This could be because they perceived this part as optional (S9). One of them said the following about this issue and about the comments on the back of the form:

You ask [us] to fill in the part of praise, criticisms and suggestions [comments part], most of us do not fill it in which indicates that 'by filling in this part [rating part], I escape [from assessment form]'. Actually, filling in this part [comments part] is also important. This sentence is important [comments part] for the reader,

but not for the writer. Thence, you lay emphasis on why [students do not write reasons]. Why the best, why the worst for these [in ratings], they should write the reasons. This part [comments part] seems as if it was optional and most of us really did not fill it. I mean, okay, I drew a chart [average graphic of rating part] by looking at here, merely reading this [graph] is remained, but there is no reason [in comments part]. S/he said that ‘the weakest side is that not giving a proper example’. Well then, ‘what is the improper side of my example?’ For example, at this place, some time [is needed]. I mean, maybe there could not be three microteaching episodes, but two in a week. By giving some more time, you give five minutes, [they can] fill these [comments part]. (S9) [68]

Problems regarding filling in the rating part were also mentioned. Two participants created that peers did not use the “not applicable” choice at all (S46, 47). Furthermore, according to some participants, peers expected a performer to explicitly display and verbalize or emphasize items in the assessment form (S41, 43, 47). Two of them explained that peers always expected a microteaching performer to employ a “formal” assessment part in the microteaching session, and they did not regard “informal” techniques as assessment (S41, 43). One of these participants also stated that peers expected the performer to recall pupils’ prior knowledge at the beginning of the microteaching session because the assessment form template (S41). One of them said, “I found giving homework acceptable for making a connection to the next lesson, but my friends waited for an explicit sentence of this” (S47). One of them discussed that the structure of the form could result in an expectation for a certain sequence in instructional events:

‘Did not establish a connection with the previous lesson’ exists in all feedbacks. I did it somewhere, but not the beginning of the lesson. In this issue, I felt very limited by myself. While I was reading feedback, actually I think that I was hard done by. Because I have a certain strategy and I want the students to be motivated. I did want to begin with ‘what did we do last week?’ I mean, later on I said it, which most probably passed unnoticed since it [making a connection with the previous lesson] is very structurally done. I think that I taught definitely what was done in the last lesson by using the Socratic method... maybe a template was created in our minds, first this is done, then this is done. However, it [the template] destroys the creativity. Maybe, I can say that I have a difficulty in planning because everyone but I did not do something of the kind or because we got used to that [firstly make connection with the previous lesson] ‘s/he did not do that part, not mention that part’. The same thing happened in the assessment part, as well. If I gave a quiz, ‘mm yes, [s/he] made an assessment’ would be written, but when I tried to provide this [assessment], this was not understood. Maybe, the facts that people [students] could not listen for long and there is a possibility of getting bored during a long time are possible reasons. Probably, the structure of the [assessment] form conducted to such a result. (S41) [69]

Regarding unfair assessment, the participants generally explained the reasons why they could not be objective in assessment. Seven participants focused on the issue of unfairness in being assessed with the MAF. Three participants thought that friends did not know how to assess and that they behaved emotionally. Therefore, they did not assess fairly (S2, 41, 46). Another participant complained about being criticized as if he was teaching

authentic pupils in the microteaching session (S24). Three participants claimed that close friends always wrote positive and excellent things in the assessment form (S10, 21, 24), rating them higher than they deserved. Another one mentioned her belief that the probability of a negative effect of low ratings in the rating part led to a more positive approach to the rating part, and thereby peers could not behave objectively in the assessments (S28). Moreover, one of the participants warned that assessing microteaching much too optimistically would be harmful in the future (S48). In addition to these, one participant commented that the assessment forms were filled in under the influence of the communication skills and individual characteristics of the performers (S41).

4.2.4.6 Preferences for Giving Written or Oral Feedback to Microteaching

More than half of the participants made it known that written feedback was a must due its importance and excellence, so written feedback was preferred for their microteaching performance (S10, 21, 28, 41, 43, 44, 47, 48). Furthermore, four participants specified that written feedback was retentive and contributed to the written self-reflection assignment (S10, 21, 41, 44). Moreover, two participants claimed that written feedback is more objective, anonymous, and allow for the expression of unspeakable things (S21, 48). One of them stated it in this way:

If [we] wanted factuality, the requisite form is written [feedback]. Written feedback has a strange side; many things beyond expression can be articulated. The written ones were treated more confidently and more objectively, actually somebody smiles in your face, everybody smiles in your face, I mean, this is like life, you know if s/he smiles on your face, but in writing, that smiling would not exist. Namely, writing is a very interesting thing. If [we] wanted factuality, if wanted an objective thing, it should be written, not oral. Oral feedback already exists. ‘mm, good, bravo, well done, you succeed’ for your friend, even if s/he is not successful. (S21) [70]

Additionally, two participants explained that giving written feedback provides comprehensive and precise information (S47), and is the most effective for a big audience/group (S40, 47). One of them explained the advantages of written feedback as:

Written [feedback] is more beneficial, because you write some things if some things were happened simultaneously, I mean, when you see, you write it instantly or you rate it. However, if this was retrospective, some things could be forgotten, or the weight of some things could not be completely remembered. If you are going to give oral feedback, [you should] give an oral feedback when you observe once again, but this takes a lot of time. Written [feedback] is better. (S47) [71].

On the other hand, eight participants talked about the needs and drawbacks of oral feedback. Three of them proposed that, after each microteaching performance and its assessment with the form, a 5-10 minute discussion or comments session could be made by decreasing the number of microteaching presentations from three to two in each section for

each week (S9, 41, 48). Two participants made some further suggestions for oral feedback. One of them advised recording oral feedback (S47) and the other one recommended, that after completing all assessment forms, the critical points in the assessments be discussed in the next class (S28, 47).

Seven participants mentioned possible limitations to oral feedback, as well. Three of them argued that oral feedback could not be as detailed as in written format, it could be more general (S21, 28, 47). Two participants were afraid of oral feedback that would engage students in long discussions (S10, 28). There were some anxieties that oral feedback might make peers speak unfairly (S28, 48), about the possibility of a defensive mood or reaction from the presenter (S28), and about offensive words and negative comments (S47, 48), which might lead to an unsolvable atmosphere (S28). One of them explained these concerns about oral feedback as:

I say that if the form was not used, neither should the other [oral form of feedback, discussion]. Saying 'you did this', 'you did that' to the face of somebody who has experienced that anxiety is not nice at all. If you always attempted to praise in order not to hurt, consequently it was not done so. Or, when bad things are said, s/he defends her/himself 'but, I was going to do so' and so forth ... or, [it is] dragged on, and the solution is not very clear. Besides, maybe we can not get such detailed feedback ... not everyone criticizes themselves, self-criticism is quite different, [s/he] does not respond, is timid, that is, is not able to defend her/himself, or [these] go against the grain. I mean, a quarrel is provoked, which is bad. Written feedback [should] goes on ... maybe, if there was time, maybe after filling in [the form], is it possible to have session of reassessment of the performance? (S28) [72]

Another one expressed why he did not prefer oral feedback, as follows:

After microteaching, discussing [it] was nice for those who performed well, but it was unkind for those who performed badly. Also, there were some material problems, for example, the electricity was cut off during the microteaching of one friend. That friend could be demoralized. So, if a discussion was opened just after microteaching, it would not be very good. (S47) [73]

4.2.4.7 Suggestions for Being Assessed

Two-thirds of the participants made suggestions to improve of the quality of the peer assessments. Four of them laid stress on the necessity to emphasize fair assessment (S27, 28, 46, 48). One of them said, "Absolutely, [being assessed] should continue. The forms, these are really useful, not null. People assess themselves. Of course, if friends wrote more realistically, it would be better." (S27). Furthermore, another participant advised that selecting the peers who assess his microteaching could lead to a fairer assessment (S24). As to feedback, three participants claimed that it is necessary for peers to explain the reasons behind their ratings in the assessment form (S9, 10, 44). Moreover, one participant mentioned that the importance of assessment and the necessity for corrective feedback with explanations should be frequently explained to students, as follows:

The importance of these assessments should be clearly explained to the assessors. They should also be acquainted with making explanations at length or giving feedback as properly. For example, a sentence in [the comments part], was the most interesting one, ‘S/he motivated students by saying in this way’, for example [s/he] can write this, actually it is more specific. Namely, it would be best if these were specified, while such assessment was being made. (S44) [74]

Exclusion of peer assessments in grading policy was highly appreciated by several participants, since it was felt to increase the fairness and truth of both the assessment and the feedback (S12, 27, 44, 47). This grading policy was found as plausible because peers were not experts (S12), and it provided more realistic and fair assessments (S27, 47). One participant said that participants should be clearly informed about the exclusion of the peer assessment ratings in the grading policy, so that they could behave more honestly and objectively in their assessments (S28).

4.2.5 Answer to Research question 2.5

RQ 2.5 What are the contributions and challenges presented by doing a self-reflection assignment, which involves analyzing feedback given by the instructor, teaching assistants and peers?

The contributions and challenges of writing the self-reflection assignment with a provided theoretical framework has two sub-categories. One is contributions and challenges, having the following sub-categories: Watching One’s own Microteaching Performance from Video, Analyzing Assessments and Feedbacks and Responding to them, Writing Self-reflection Essay. The other sub-category is suggestions. These are given below.

4.2.5.1 Contributions and Challenges of Doing the Self-reflection Assignment

The participants pointed out two major contributions made by the self-reflection assignment and its guide. Firstly, five participants said that, in order to recap and come to a conclusion, the self-reflection assignment was necessary to complete the microteaching process (S2, 10, 41, 43, 47). One of them said,

If we omitted this recapitulation [self-reflection assignment], some things would be baseless [groundless]. This many people said this, that many people said that, but generally recapping is eventually needed, ‘my lesson [microteaching] was nice, my lesson has deficiencies’; thence, self-reflection is an important thing. Because, my writings should have meaning for me, but just a number [rating number in the form] does not make sense to me. If you asked [us] to write just a self-reflection without this format [self-reflection assignment guide], [it] would not be, I think that we would ask you a thousand-question. Because, there was too much information and we as a class experienced such a thing for the first time. For example, I entered my information, all my points [into Microsoft Excel], I produced statistics in accordance with the [guideline] that you gave, I drew a graphic according to those [the points]. Actually, I did not know to recap these at all. Namely, if you did not give that guideline, I would not have done it. (S43) [75]

Another student explained the self-reflection assignment as expressing oneself like a self-review:

I think that this self-review [self-reflection] should be a must for every task. What I did, what I learned, what should I learn, where I have inadequacies, and soon. This [self-reflection assignment] has such a dimension. Here it is, there is a summary in a consequence of a process [lesson planning and performing microteaching], namely, what I acquired, what I lost, what I should acquire, what I should focus on. I think that this [self-reflection assignment] serves [these] purpose[s]. This is a necessity ... conditioning this within this course, that is, giving it as an assignment is cut out for me, ultimately I have already written such a reflection, but I have written more professionally. In this regard, I appreciated it. I feel the need for writing. After a process, you express your feelings. (S2) [76]

Furthermore, two participants claimed that the self-reflection assignment enabled them to internalize and retain what they learned about instructional planning and teaching skills (S10, 41). One of them verbalized this as:

If you gave the forms, [and you did] not make explanations, ‘mm this told this, that told that’, we just thought of ‘but, I could have done that one’ the moment and this would be therein. It would not be a permanent thing for us, but seriously doing analyses of these [required in self-assessment form], converting them into table in the end led us to consider it as more seriously. While we were assessing them [given feedbacks for us] in the process, we noticed seriousness of them [our mistakes]. While we were analyzing them, we said ‘I am really wrong herein’. And, ‘verba volant scripta manent’ is occurred. Doing this [self-reflection assignment] further increased the level of awareness. As may be required, we accepted, we were wrong herein, we should not have done this, we should have done that one. Huh, [all these] caused to develop an alternative, as well; it was also very useful in this regard. If not [If self-reflection assignment did not exist], we would not think that okay I was not good in this, but how would I improve. if not, there would be awareness of mistake, but now [If self-reflection assignment existed], there would be awareness of mistake [and], correction... according to me, if we did not do this assignment, that awareness would be very low level. (S41) [77]

Moreover, one participant underlined that the self-reflection assignment made them aware of the meaning of the feedback they had received in the microteaching planning process (S47). He expressed his thoughts on this as,

It [self-reflection assignment] was necessary, because I was about to [revise] the microteaching that I did [performed], which was good ... for example, as to compare and contrast, I observe once more and I compare and contrast [drafts of my microteaching plans]. You gave feedback, accordingly I changed it. But, actually I did not think how much what I changed [amendments] contributed. However, I consider in accordance with a question, I wonder if, hmm it means that an amendment [amelioration] was really occurred. Thence, actually this format is good for me, nice in a sense ... on behalf of assessment, more concrete outcome is acquired with such a format ... it should continue with this format. (S47) [78]

Secondly, participants opined that the self-reflection assignment with a theoretical framework was well-designed, well-structured, and prepared professionally (S2, 12, 28, 43,

44), comprehensive and effective in the proper sense (S44). Eight participants mentioned that the self-reflection assignment guide provided them with a complete understanding of what was expected from them, which eased them in their assignments (S2, 9, 12, 27, 28, 41, 43, 44). The following comments of one participant clearly indicated that they need guidance and coaching for reflection in their reports or assignments:

Our worst deficiency is that [we] would not do any thing if this template was non-existent. This is about not knowing what to do. You give this [self-reflection assignment], ‘we would fill these, [but] relative to what?, now, how would we do?’. Namely, too much different results could have been yielded, but when [we] did in accordance with the feedbacks given by you, when you give things that we have done since at the beginning of the semester, [doing self-reflection assignment] was easy, was much easier. At least, we knew what we do ... when any instructor says ‘write an analysis report [will be written]’, I say ‘do you have any sample?’. Actually, what [instructor] wants, what [instructor] expects ... I take a course, instructor says that write report, [when we] ask template, instructor says that disregard template and so forth, [you] write, but 70 comes, why?, this is absent! ... if all points wanted were given to me, maybe I would not forget. (S9) [79]

Furthermore, three participants pointed out that the detailed guide led them to write detailed and organized self-reflection assignments easily (S27, 28, 44). One of them said, “Templates [assignments] are always useful, people know what to write, know where to write, know how to search, even though its templates are 2-3 pages. Namely, when you explain at length, we can write our thoughts at length” (S27). Another one expressed this as: “Also, I say that it is much better that you had given us a template for this assignment five [self-reflection assignment]. Because, if you had wanted it in the format of a general report, we would not have written in such detail.”(S44). Participants made clear that a seriously demanding analysis led the students to take the self-reflection assignment seriously (S41), and shortened the period of completing the assignment (S43). One of them said,

I think that this [self-reflection assignment] was prepared carefully. The order is important, I entered my data therein, what I wrote was so clear, on what grounds was also clear. I remember entering my ratings in order that their average was this and such like. Thence, I think that the course of events was continued properly, this did not take too much of our time, or create complexity. There was much more information, given by you, previously done by us, our opinions, the forms filled by us ... it [information] was far too much, but in the way of tidying up, [recapitulation], this [self-reflection assignment] was very useful. I did not face any problem while I was writing this. (S43) [80]

Watching One’s own Microteaching Performance from Video: The participants were asked to watch themselves from the video before analyzing feedback and writing their self-reflection essay. Eleven participants put forward their views about observing their own microteaching from the video, which were gathered into the analysis category of usefulness of observing themselves from video (S2, 9, 10, 12, 40, 41, 43, 44, 46, 47, 48). These participants regarded watching their own microteaching from video as putting a presenter in

the assessor's shoes (S2, 10, 47, 48), recognizing one's own intonation (S12), and giving on the opportunity to become aware of one's strengths (S47) and weaknesses (S10, 12, 41, 43, 44, 46). However, a few of them did not find it very useful or important (S21, 47). One of them believed that observing his/her own microteaching from video enabled him/her just to focus on intonation, gestures and postures (S21).

Analyzing Assessments and Feedbacks and Responding to them: This assignment asked each preservice teacher to analyze the ratings and feedback in the MAFs filled in for her/his own microteaching performance. Nine participants discussed these and writing response to the positive and negative aspects of microteaching (S2, 9, 10, 21, 40, 41, 43, 44, 48). Three of the participants regarded this process as very beneficial (S27, 40, 41, 48). Two participants said that this assignment enabled them to evaluate themselves (S27), to become aware of their deficiencies after conducting data analysis, and to develop alternatives for compensating their deficiencies, as well (S27, 41). One of them summarized the process of analyzing assessments and feedbacks in order to respond them as:

If you did not provide any format, we would write two pages at most. We say 'while I was preparing for the lesson, I did this, I wanted to do that, but this was what happened', and then we would finished. 'What we did herein, which mistakes we did in where, what we experienced' we wrote all these. Writing them took a long time, but we could understand what we did. Entering these data [in the assessment forms] took 20 minutes, but I spent 1,5-2 hours to read through all of them and examine them. I read them again and again, consequently it is useful, these are not null ... self-assessment really helps people in understanding some things. Assessing me is a very difficult thing, but it helps us in understanding some things for me. (S27) [81]

Furthermore, it was seen as a guide in how to analyze quantitative data well (S2). Through analysis of the assessment forms, all participants could decide on strong and weak points in order to discuss these in the self-reflection essay. More specifically, written feedback on the comment parts was more effective as a determining factor than the ratings in identifying strong and weak points. Besides, the participants showed that analysis of qualitative feedback provided them with an opportunity to deeply understand their strong and weak points (S9, 10, 21, 41, 44), to respond to criticisms and the defend themselves (S28, 41, 47), to provide self-criticism (S21), to self-evaluate, and self-review what they did (S40, 41). In addition to these, participants claimed that completing the self-reflection assignment made students think about the feedback to compensate for their weaknesses (S44, 48). Regarding these, one participant commented:

It [self-reflection assignment] made me think of what can I do to improve it [microteaching]. Ultimately, we will write such an answer there. There is a deficiency there, you say '[it's no trouble] I do it, it gets corrected', when you look at the forms on your hand. You could not do so in writing the report [self-reflection assignment]. You should write a really substantive thing there [self-

reflection assignment], namely you should write a thing [achievable work] that you can really do. (S44) [82]

Another participant stated that the self-reflection assignment contributed to her own teaching style since she responded to peers' and instructor's comments (S41). However, two participants asserted contrary opinions about analyzing and responding to feedback. One of them declared that his/her peers did not see the responses to their feedback, only the instructor did (S46) and the other one found responding to feedback a waste of time, since it is enough to read the strong and weak points mentioned in the feedback to understand these strengths and weaknesses (S12). As a result, it could be said that a few participants did not regard as important the process of responding to the feedback pertaining to their strong and weak points (S12, 46).

Writing Self-reflection Essay: Twelve participants spoke about associating the teaching and/or learning theories given in the theoretical framework within the assignment, with the strongest and weakest sides of their microteaching performances. All of them said that they considered the theoretical framework as beneficial, to come in handy, and they all used it (S9, 10, 12, 24, 27, 21, 40, 41, 43, 44, 46, 47). Two participants made plain that the theoretical framework was important as a guide (S10, 27). One of them saw it as, "Yes, [it is] useful, because if it did not exist, we would look for [a theory] Which theory? What it is, how to do something? Who is the founder of this theory?, like this. This both saves time and refreshes what we have learned in the courses, if short summaries were written. This is a really a nice thing" (S27). Furthermore, four of them explained that the theoretical framework was a summary of what they have been learning for years, and it reminded them of their prior knowledge (S12, 27, 46, 47). One of them said, "Since you added this [self-reflection assignment guideline], all our friends were very happy. It includes everything. Our part is just to read it and since it is short, it is nice for me. It helped very much" (S47). Moreover, another three participants said that it was necessary and useful to give clues about the theories and their founders (S2, 12, 27). Besides, one participant preferred to focus on theories that he already knew, but he became aware of alternative theories that he did not know (S9). However, one participant implied that it was not necessary to connect practice to psychological developmental theories, saying:

I think it should not depend largely on theories. I think that relating practice to them [theories] is not true in any case. I mean, of course we should touch on [them], but we should not have depended on [them]. In the sense of specifying the characteristics of students, I think we should depend largely on them. They [theories] are not very identifier any more. (S41) [83]

Nine participants discussed a matter of writing the self-reflection essay by connecting theories with practices. Three participants said that writing a self-reflection essay

made them aware of which theoretical approach was underlying their microteaching implementations (S12, 21, 24). One of them explained this in detail as,

I specified my strongest sides as motivation, communication, eye contact in communication, endearing me to them [students] and such like. Because, when I consider theories, John Keller in motivation is the best one, at first how should I provide motivation?, firstly I have started with letter a, once person should attract attention, namely if person did not gain attention, so-called motivation had gone any more. After gaining attention, this person should know the necessity of that job [attracting attention] ... I told them that 'friends, listen, all designers use this, if you work on web related jobs in the future, you will use these. Actually, when you surf the web pages, they all use them, they are used in printing house, they are in your books, even in your labels [on books], designers use these'. I have given its necessity. Where do I know this? I know from Keller. I accommodated, like this. What happened when I accommodate this to theories?, namely I have learned to ground [base] my learning [things learned] on a scientific basis ... as to appealing to children at this age, how much they love thing, what they know, what they do not know. As you know, Piaget, we learned at most him. We learned ZPD of Vygotsky. Because, sometimes in order to teach some things that children do not know, putting pressure on them with questions, as well. We have already learned them previously, we have known. Our department has given them to us, I have just related what we do to them, I have grounded them and I also learned [how] to ground. (S12) [84]

Furthermore, participants appreciated that expecting them to realize the relationships between theory and practice was nice (S21), and that they did not have any difficulty in combining research and theory since they had selected their teaching strategies in conformity with certain theoretical approaches (S43, 47). One of them explained that she did it easily since she decided on her theoretical approach while planning the instruction for her microteaching:

While I was doing this [self-reflection assignment], actually I did not have any difficulty, since we selected the method that we would use, in the beginning of the planning, for example I said that 'I will follow such an approach'. Since I have made my plan by specifying it [instructional approach], I have already done these sides in accordance with it. Since I did it in this way, I had no difficulty. (S43) [85]

However, six participants criticized some issues. They were challenged by the relating of theory to their strongest and weakest sides (S21, 28, 40). They found writing the self-reflection essay boring (S44), did not pay much attention to theories (S24, 41), and did not understand what was expected and what exactly to do in terms of relating practice to theory when writing the self-reflection essay (S21, 28).

4.2.5.2 Suggestions

Four participants made the following suggestions about the self-reflection assignment: the self-reflection assignment should be given in the following semester, as well (S27); since the self-reflection assignment was cognitively loaded, it should be divided into two parts in order to do it more easily (S48); rather than both positive and negative feedback,

only negative feedback should be focused on when analyzing feedback and responding to it (21); and once information about and the implementation of theories are given (before the microteaching planning), associating theory and practice can be done better (S28).

4.3 The effects of using cognitive tools for instructional planning and microteaching activities on preservice teachers' field teaching

RQ 3: What are the effects of the cognitive tools and the microteaching method used in the Teaching Method II in computer education course, on preservice teachers' field teaching planning and performances?

In order to detect the effects of cognitive tools and microteaching activities on participants' field teaching participants were asked in semi-structured interviews, if they had done any field teaching, how they had prepared for it and what they had experienced. Furthermore, the lesson plans and assessments of 12 participants –whose plans and assessments were assessable– pertaining to their field teaching were analyzed. It should be noted that in order not to influence them and to see the actual effect, the sample were not informed that their plans and field teaching assessments were going to be analyzed.

4.3.1 Interview results

The effect of using cognitive tools for instructional planning and microteaching on preservice teachers' field teaching is the last category emerged from the interview analysis. Six participants discoursed on the effects of using cognitive tools for planning, and of engaging in microteaching activities on their field teaching performance. All these participants pointed out positive effects of cognitive tools and microteaching activities on field teaching (S2, 9, 10, 12, 43, 44). More specifically, one participant made clear that using cognitive tools for planning and microteaching had a positive effect on designing and teaching the lesson in field teaching, in terms of objectives, activity, materials and method (S9). Another one illustrated how the microteaching planning process and experience contributed to her field teaching experiences in the following terms:

[Even if preparing for microteaching is very time-consuming and onerous for us] I think it provided benefits, as well. Actually, because, as I said, now we go on a field teaching, teacher [mentor] tells me that 'now, you give a lesson', I do not have any preparation, anything, but 'believe me!' in five minutes, if mentor said in break, I immediately prepared activity, I thought [decided] of a thing drawing their attention for proper introduction, then I thought of another thing for assessment while they were doing activity. Actually, I think this process acquired by me is very useful. If required preparing lesson, these come my mind. (S43) [86]

Two participants talked about using the MAF in preparing a lesson plan for field teaching (S10, 43). One of them elucidated that he prepared his field teaching plan by using the MAF, since it makes the teacher live the lesson and he was already familiar with it (S10).

In field teaching, he emphasized, he did not repeat the same mistakes that he had made in microteaching:

I did field teaching last week. I used this form [assessment form] and it was very beneficial. This form is a good form ... I used it while I was preparing my lesson, I evaluated at least. This form is a seriously good form ... it has lesson flow live. It has both student and teacher to live lesson flow. I think it is an important form. I gave the lesson [in field teaching], I did not make any of the mistakes that I made in this microteaching ... it [giving lesson in field teaching] is quite similar to what we performed in microteaching ... I found the answers of such questions in this form as 'how to introduce the lesson, how to share [make connection with] daily life of student, then how to terminate the lesson [closure part], what to do when the students are distracted, how to channel their energies to lesson'. Actually, I found the microteaching that I performed, I live that moment again, I said 'I have given lesson very quickly', I felt comfortable, I live exactly that concerning with them individually, answering their questions, providing reference for next lesson, connecting past with the future ... the children were happy, we had a good class, I was also happy since I took good grades, I had a good class. This form has a many of benefits ... rather than giving a lesson without rubric [and] plan, giving lesson with such a rubric is much more beneficial. You know what to do, you have a road map on your hand, you know [how] to go there. (S10) [87]

The other one pronounced that the MAF included what was needed for pupils to understand a lesson, and therefore she used the assessment form to make a lesson plan, considering the criteria in it for her field teaching, as she described below:

The process of preparing the microteaching plan provided so many benefits that I followed the process of my experience in giving lesson for this course and field teaching. I tried to implement the criteria in the assessment , you see, 'Do I give proper feedback? Do I use proper assessment strategy? Can I motivate students?' I do these by considering, even I use this tool [assessment form], because we assessed many persons. In order to understand whether a lesson is good or not, [they are] really specified criteria [in assessment form]. For example, 'Does s/he remind the students of prior knowledge? Does s/he make a related connection with the previous lesson or the next lesson?' these are important things. Required things for students to understand a lesson... I seek these in myself, I mean [I seek] these characteristics [criteria in the assessment form] in a lesson that I will give. Therefore, I think [the assessment form] is very beneficial. (S43) [88]

Another participant talked about how the planning and microteaching experiences in this course had led to accelerated lesson planning in field teaching (S44). She also mentioned that she evaluated her field teaching plan with the IPSRT and CPSRT (S44). She said:

After a long microteaching planning session with you, I made my plan [for field teaching], I even based it on it. That is a very effective method [the cognitive tools]. While you are making a plan, you also assess yourself asking did I prepare [my plan] in accordance with the level of students? Actually, these tools [IPSRT and CPSRT] are a very effective method. While I was preparing [my plan], I looked at [them] in order to check if I omitted any step, which makes a difference in preparing a plan. (S44) [89]

One of the participant explained that he became more self-confident in field teaching, since he learned instructional planning in the literal sense and had some teaching

experience in microteaching (S12). He stated that he did not use any planning tool or template, since he had learned the planning process during the earlier planning and microteaching experiences. He explained his teaching experience in some detail below:

I gave a lesson [in for field teaching] for the 6th grades last week. I prepared a plan before entering the class. Beforehand, I started desperately, because children get very bored in lessons, I mean, they always want to play games and such like. I promised an award for early finishers. I set them free to use the Internet. When they finished [their tasks], there were 4-5 minutes for them. I also thought this out, I accordingly prepared the lesson, which was nice, I like it very much.

I knew about motivating [students], when I entered to class at first, I knew what students do. I explained instructional goals, explained them one by one, I gave them feedback, also I knew about the need to be concerned about them in a way that is sometimes to whole class, sometimes to individual students. I know all these, I entered into the class. Otherwise, that course [conducted this research] has not been given in first semester, it is very logical to want us to conduct field teaching in this semester. The experiencing on difficulties [in microteaching], for example time management, I did not experience any difficulty in time management, I think I should have experienced a little difficulty in time management. But, actually I did not experienced any, everything that I want went well. Actually, this is an ideal situation.

My microteaching experience was also very beneficial. At least, it [field teaching] was not a first [first experience]. Even nothing ever happened, it was not a first. Both on paper and in my mind, I knew how I should make a plan before going [to the field teaching]. I knew them. I could not use these tools [CPSRT and IPSRT], but I knew them, for example, requiring an 'instructional goal, role of students, my role, objectives, how to divide attainment [learning outcome], how to use an activity', because I learned them. However, I did not mark any 'yes or no' by using the tool. I took paper and pencil in my hand, I arranged this information that I know. In order that 'I will give this here; I will do that there, here I will do this in that way. I should do these, those, because a child needs this, this child understands this', I have prepared all these. Eventually, I have said, 'I will make such an assessment'. I uploaded that assessment on all computers. And, I have students solve the assignment [in assessment]. They solved it, like it very much. After, I checked them one by one again. I will announce the results in the next week, teachers never do this ... in practice, teachers focuses merely on core part of lesson, but we learned that this [lesson] is not composed of about this [core part]. Maybe, this is half of the lesson, 'yes, but other half? Is that so?' these should be exist 'stating goals', 'roles of my and students in our minds', 'specifying places', 'finally closure', 'announcing the topic of next week', 'what children know' and so forth. (S12) [90]

Besides the participants mentioned above, those who have not yet conducted field teaching also stated that they have high self-confidence for their field teaching. For example one of them explained it in this way:

Since we make only this plan for microteaching and I performed this microteaching by receiving so much feedback, having so much communication; right now I am sure what true is. It seems as if I will perform very confidently my assessed teaching [field teaching], owing to easiness [self-confidence] only given by this [instructional planning and performing microteaching]. If afore, okay, we make plan on a paper, we place table, data, but 'how to implement this

and where should be careful, where should be much more careful', these hanged in the balance. These were some things that we should fill [do] through our personal skills, but now these are clear, we have data, shaped. (S41) [91]

4.3.2 Lesson Planning and Teaching Performance in Field Teaching

The preservice teachers took a “Teaching Practice” course in the last semester of their undergraduate program. In this course, each student attended a K-12 school as a student teacher and taught at least three macro teaching (teaching whole class), one of which was assessed by one of the teaching assistants in charge of the course. The participants’ assessed teaching plans were gathered by the teaching assistants. From 42 obtained plans, 18 were developed according to the MPG, which had been designed by the researcher for microteaching planning, while 17 of them were in the format provided by a private school which provides preservice teachers with field teaching opportunities. The remaining plans were written according to a shorter form of the MPG (4 plans), a different tabular format (2 plans) and IPSRT (one plan), as seen in Table 4.11. It appears that if the school has a lesson plan format, the preservice teachers followed that system and prepared their plans according to that format. In fact only one school seems to have such a planning format, and around 40% of the participants were student teachers in that school. The other preservice teachers usually preferred to use or adapt the MPG used in the current study. It could be said that the MPG supported more than half of the preservice teachers’ field teaching planning as a tutoring tool. In informal interviews, teaching assistants for the field teaching course claimed that the preservice teachers did not demand any feedback or help when developing field teaching plans. They stated that in previous years, they had spent a considerable amount of time in giving feedback on field teaching plans. The researcher thinks that this could also be an effect of the students’ experiences with the cognitive tools for instructional planning and microteaching activities in the current study.

Table 4.11 Lesson Plan Formats which the Interviewees and all the Participants Used to Plan their Field Teaching

Lesson plan format	The interviewees (N=12)		All the participants (N=42)	
	<i>f</i>	%	<i>f</i>	%
Microteaching planning guide (MPG)	5	42	18	43
Planning format of the school where they conduct field teaching	3	25	17	40,5
An adapted form of MPG	3	25	4	9,5
Tabular format	1	8	2	5
IPSRT	0	0	1	2

In order to understand the effect of microteaching activities on their field teaching plans, the preservice teachers' plans were analyzed to see whether they included certain components from the MPG and the criteria in the MAF or not. The main components are preparation, introduction, core, assessment and closure parts and references. The frequencies and percentages indicating the extent of considering these components and their sub-components are given in Table 4.12. In the preparation part, the most frequently considered aspects were level of pupils, duration of lesson, learning outcome(s), list of teaching-learning materials and equipment. Only a few of the preservice teachers considered previous learning activities, the list of prerequisite knowledge and skills and the next learning activity. In the introduction part, it was seen that all of them give importance to motivating pupils and informing pupils about learning outcomes, and a majority of them also planned to remind the pupils of the previous lesson. In the core part, they all described learning activities and a majority of them addressed how to recall prerequisite/prior knowledge. In the assessment and closure parts, two-thirds of them claimed that they will somehow make an assessment, and the majority of them also considered summarizing major points in this part. The relatively less considered aspects were informing learners about the next lesson and giving homework. Finally, only one third of the participants listed the references they used or any further references from which their pupils could learn about the topic. This table is somehow similar in the whole sample (N=42), as seen in Table 4.12.

Twelve participants' assessment forms for field teaching, filled in by teaching assistants, were analyzed to learn their strengths and weaknesses in their field teaching performances. Rather than the rating part, the corrective feedback was focused on, and it is given in Appendix N. Table 4.13 gives the number of preservice teachers who received praise and criticism for various aspects of their field teaching performance. It was seen that all of them received praise for their strategies in the introduction part. Nearly half of the participants reviewed the previous lesson or reminded pupils of prerequisite knowledge. More than half of them attracted the attention of teaching assistants for good motivation strategies. Only one of them was criticized regarding not motivating pupils.

As to the core part, one third of them were praised for their teaching in accordance with the students' level very successfully, or for giving appropriate examples, while two of them were criticized in this respect. One third of them were found to master the teaching method they applied, while two of them were criticized for erroneous use of a teaching method, and another two were criticized for using only one method throughout the lesson. Half of them were found successful in selecting and using instructional materials, while only two of them were warned about the use of materials. Half of them got praise for their practice activities and feedback efforts, while three of them were criticized in this respect.

Table 4.12 Results of Document Analysis of Participants' Field Teaching Lesson Plans

Components of lesson plan		The interview participants (N=12)														The sample (N=42)	
		S24	S10	S12	S2	S27	S46	S21	S47	S44	S43	S41	S9	f	%	f	%
Preparation	Level	1	1	1	1	1	1	1	1	1	1	1	1	12	100	42	100
	Duration	1	1	1	1	1	1	1	1	1	1	1	1	12	100	42	100
	Learning Outcome(s)	1	1	1	1	1	1	1	1	1	1	1	1	12	100	32	76
	List of teaching-learning materials and equipments	1	1	1	1	1	1	1	1	1	1	1	1	12	100	40	95
	Name of the activity	1	1	0	1	1	1	1	0	1	1	1	1	10	83	36	86
	Instructional Goal	1	1	1	1	1	1	0	0	0	1	1	1	9	75	33	79
	Unit	1	0	1	1	0	1	1	1	1	1	0	0	8	67	25	60
	Behavioral Objectives	1	1	1	1	0	0	1	0	1	1	0	0	7	58	26	62
	Time allocation	1	1	0	1	0	0	1	1	1	1	0	0	7	58	20	48
	List of teaching strategies, methods, techniques	0	1	1	0	0	0	1	0	1	1	0	0	5	42	16	38
	Pupil characteristics	0	0	1	1	0	0	0	1	1	1	0	0	5	42	14	33
	Previous learning activity	0	0	0	1	1	0	0	0	0	1	0	0	3	25	12	29
	List of prerequisite knowledge and skills	1	0	0	1	0	0	0	0	0	1	0	0	3	25	9	21
	Next learning activity	0	0	0	1	0	0	0	0	0	1	0	0	2	17	9	21
Introduction part	Motivating pupils to learn	1	1	1	1	1	1	1	1	1	1	1	12	100	39	93	
	Informing pupils about learning outcomes	1	0	1	1	0	1	1	1	1	1	1	10	83	35	83	
	Reminding the previous lesson	1	1	1	0	1	0	1	1	1	1	0	0	8	67	21	50
Core part	Description of learning activities	1	1	1	1	1	1	1	1	1	1	1	12	100	42	100	
	Recalling prerequisite/prior knowledge	0	0	1	1	1	1	1	0	0	1	1	1	8	67	22	52
Assessment and closure	Assessment	0	1	0	1	1	1	0	1	1	1	1	0	8	67	33	79
	Summarizing major points	1	1	1	1	0	0	1	1	1	1	0	1	9	75	23	55
	Informing learners about the next lesson	1	1	0	1	0	0	0	0	1	1	0	1	6	50	14	33
	Homework	0	1	0	0	0	0	0	1	0	0	0	0	2	17	4	10
References	1	0	1	1	0	0	0	0	0	1	0	0	4	33	12	29	

Table 4.13 Frequencies of Preservice Teachers receiving Praise and Criticism for their Field Teaching Performance

Components of teaching		Number of preservice teachers receiving			
		Praise		Criticism	
		<i>f</i>	Participants	<i>f</i>	Participants
Introduction	Good introduction to the lesson	6	S2, 10, 27, 41, 44, 46		
	Informing Objectives	3	S10, 24, 43		
	Motivating Students	7	S9, 10, 12, 21, 41, 44, 46	1	S24
	Connecting to/reviewing previous lesson	5	S2, 9, 10, 27, 43		
Core	Teaching in accordance with pupils' level	3	S10, 21, 43	2	S24, 47
	Teaching strategies, methods, techniques	3	S10, 12, 41, 44	4	S2, 9, 12, 24
	Giving examples	1	S47	1	S24
	Instructional materials	6	S2, 10, 41, 44, 46, 47	2	S2, 27
	Practice and Feedback	6	S9, 10, 21, 27, 43, 44	3	S2, 9, 24
	Providing active participation	1	S27		
Closure	Assessment	3	S2, 10, 27	3	S2, 9, 47
	Summarizing major points	2	S2, 10		
In general	Classroom management	3	S12, 21, 27	2	S9, 24
	Communication skills	5	S2, 10, 21, 44, 46	3	S2, 9, 24
	Mannerism	3	S43, 44, 46	2	S12, 24
	Anxiety			2	S2, 41
	Time management	2	S2, 43	1	S2

For the closure part, there were positive comments for three participants and negative comments for three participants. Two participants were praised for appropriately summarizing major points. Finally, it is seen that in classroom management, communication, and time management skills and mannerism, the number of participants who received praise is greater than that of those who received criticism. It is also notable that teaching assistants only emphasized the existence of anxiety for two participants.

4.3.3 Perspectives about Current study

Five participants gave their opinions on this course as efficacious (S10, 12, 43, 44, 48). One participant said that this was the first time when they tried to implement instructional planning and microteaching although instructivist and constructivist theories had been explained to the students before (S12). Another participant thought that the course motivated her and she observed almost all friends' microteaching performance since all their teaching skills could be understood (S43). The other participant opined that this course was very beneficial, increased self-confidence in how to plan and how to implement the plan, and it taught by doing and experiencing (S10). One of the participants stated that this course was beneficial, applied and comprehensive, with most practice being in the areas of computer teaching and teaching profession (S44). Another participant commented that it was not a boring course since there were always activities, and students participated in it (S48).

I think it [this course] is very beneficial. I mean, I do not say this for [just] being said. It was seriously different. Besides, since I learned by [through] experience, I think it is [much] more beneficial. Namely, reaping the benefits of a thing [this course], this likes a feedback. We assessed 11 friends. Actually, some things seriously put our minds. I can say that some things were on the right track. We have more self-confident, our self-confidence increased. I think that now it would be farther than this [taken this course] if such a thing [this course] was not, for example, if we did not examine the curriculum at all, if we did not make lesson plan ... we could be in some more distant [away], but now as if we were more in event, you see, we made lesson plans, presentations, performed microteachings. Now, I feel as if we were further inside[r], more well-informed and more problem solver. I think that for example, in case of any thing [problem] in lesson, I can solve easily. I think it has such benefits. (S10) [92]

It was a full-scope [comprehensive] course oriented to computer teacher [training program] (S44) [93]

However, one participant prescribed the computer related activities as, "Being just a one-hour computer course is a big difficulty, the computer course is learned well by students through application; thus, activities should be carefully prepared" (S28). Due to these reasons, she had doubts about implementing plans made in this study, in a real classroom.

4.4 Summary of the chapter

Table 4.14 presents the summary of the results for each research question.

Table 4.14 Summary of the Results

I. What are the contributions and challenges presented by the cognitive tools in improving preservice teachers' instructional planning knowledge, skills and attitudes in the field of computer education?		
<p>To what extent do the preservice teachers follow IPSRT and CPSRT during instructional planning?</p>	<ul style="list-style-type: none"> • The preservice teachers seem to follow the IPSRT, but they have certain deficiencies in writing behavioral objectives with respect to the tool. • The preservice teachers generally managed to fulfill the requirements prompted by CPSRT under the subtitles of “instructional purpose”, “the required characteristics of learning activities” and “assessment”. Yet, some items under the subtitles of “desirable characteristics of learning activities”, “role of student”, and “role of instructor” appear to not work or be not applicable to their plans. 	
<p>Does either the IPSRT or the CPSRT better enhance preservice teachers' self-efficacy towards planning instruction?</p>	<ul style="list-style-type: none"> • Within-subjects ANOVA revealed that there is a significant effect of the tools on self-efficacy scores (multivariate $\eta^2 = .28$). • Preservice teachers' initial self-efficacy scores for lesson planning significantly increases once they receive the treatment with one of the tools (either IPSRT or CPSRT) and self-efficacy score do not significantly increase more, after the treatment with the second tool. Thus, both tools have equal positive significant impact on initial self-efficacy score, besides tutoring by the instructor. 	
<p>Does either the IPSRT or the CPSRT better enhance preservice teachers' perceived instrumentality of instructional planning?</p>	<ul style="list-style-type: none"> • Within-subjects ANOVA indicated that there is no a significant effect of cognitive tools on perceived instrumentality of instructional planning. • It was seen that preservice teachers mean scores of perceived instrumentality are already high, above 4 out of 5. 	
	<i>Contributions</i>	<i>Challenges</i>
<p>What are the preservice teachers' perceptions of the cognitive tools for instructional planning regarding their contributions and challenges in instructional planning?</p>	<ul style="list-style-type: none"> • helpful in learning to develop lesson plans, very efficient in terms of lesson planning practice, self-regulatory benefits and positively influence affective domain (giving importance, motivation and self-confidence, self-efficacy about lesson planning) <p style="text-align: center;">IPSRT</p> <ul style="list-style-type: none"> • the self-regulatory strategies self-monitoring (60%), self-evaluation (30%), organization (53%) • Acquiring planning skills in traditional approach (37%) • self-confidence (5%) • systematic, structured and accustomed format to make planning step by step • makes the planning easier • more helpful <p style="text-align: center;">CPSRT</p> <ul style="list-style-type: none"> • supporting self-monitoring (50%), self-evaluation (40%), organization (30%) • acquiring planning skills in constructivist approach (30%) • self-confidence (2%) • has a task-oriented structure • more flexible • can help promote creativity of students • enabling to put constructivist theories into practice 	<ul style="list-style-type: none"> • deciding learning activity is more difficult than using these tools <p style="text-align: center;">IPSRT</p> <ul style="list-style-type: none"> • no contribution, titles would be enough • feeling that one makes a plan for another person, not one's own use • feeling that one prepares plan for place in a file on the shelf, but not for real life • feeling of limiting creativity due to linearity of giving information and then practicing it. <p style="text-align: center;">CPSRT</p> <ul style="list-style-type: none"> • feeling “role of the instructor” and “role of the student” parts redundant • possibility of digressing from the instructional purpose due to its flexibility • so different from what they are accustomed to apply • not understanding several concepts under the subheadings of CPSRT • the necessity of thinking about an activity before using CPSRT • difficulty in assessment of learning outcomes at critical thinking level (S47)

Table 4.14 continued

2. According to the preservice teachers, what are the contributions and challenges presented by the microteaching model used in the Teaching Method II course in the field of computer education, as a method to improve instructional planning and teaching skills?

Research Questions	Contributions	Challenges
2.1 What are the preservice teachers' opinions about the contributions and challenges of the tutoring used throughout the microteaching planning process, for instructional planning and teaching skills?	<ol style="list-style-type: none"> 1. teaching the process of lesson planning in order to design "an applicable plan" 2. Enabling mastery of the components of an instructional plan 3. making critical contributions to their instructional planning skills 4. leading to more structured, organized, clear and detailed microteaching plans 5. systematic preparation for microteaching and attitudes towards the course 6. positive effect on self-confidence regarding teaching 	<ol style="list-style-type: none"> 1. requiring instructor to spend too much time and effort in preparation of microteaching 2. requiring preservice teachers to spend too much time and effort in preparation of microteaching 3. delay in giving written feedback 4. scheduling problem in oral feedback <p>Suggestions</p> <ol style="list-style-type: none"> 1. Mixed feedback is appropriate but oral feedback is better, necessary at initial stage of planning, more key in selecting topic, activities, and strategies. 2. MPG should include a guideline to make a plan B
2.2 What are the contributions and challenges of microteaching performance for preservice teachers' instructional planning and teaching skills?	<ol style="list-style-type: none"> 1. Getting aware of aspects in instructional planning and teaching skills 2. Learning some lessons 3. Other contributions <ul style="list-style-type: none"> • transforming theory into practice • helping to overcome stage fright and anxiety regarding teaching • helping them recognize their strengths and weaknesses • encounter and learn active learning strategies • encounter and work with the Computer Education Curriculum for 1st-8th grade 	<ol style="list-style-type: none"> 1. teaching inauthentic pupils 2. anxiety and nervousness 3. problems with instructional materials 4. being assessed <p>Suggestions</p> <ol style="list-style-type: none"> 1. giving a lesson to authentic pupils lead to real performance, which is more realistic 2. if inauthentic pupils will be taught, the environment could be more authentic through some changes 3. suggestions for orientation prior to microteaching sessions <ul style="list-style-type: none"> • a sample (model) microteaching and its assessment should be demonstrated before microteaching activities • to watch sample videos for microteaching <ul style="list-style-type: none"> • to listen to an experienced teacher as a colleague
2.3 What are the contributions and challenges of assessing peers' microteaching performance through the microteaching assessment form, for preservice teachers' instructional planning and teaching skills?	<ol style="list-style-type: none"> 1. contributions to their knowledge and skills about instructional planning and teaching 2. provided to keep their attention on microteaching, thus enabling them to follow the microteaching episodes 3. assessing peers with the assessment form provided more detailed and cautious assessment 	<ol style="list-style-type: none"> 1. not being able to assess friends fairly 2. not completely understanding whether students in the role of pupils did activities or not 3. getting bored if activity parts were unvoiced and too long 4. difficulty to find the two strongest and two weakest sides for every microteaching 5 the corruption of observation because of form filling. 6. internalization of the template of rating part in the assessment form confined their creativity <p>Suggestions</p> <ol style="list-style-type: none"> 1. Assessment with MAF should be continued in this course 2. all preservice teachers should go on to assess only one performer in each session 3. to keep attention on the microteaching sessions, all preservice teachers should assess all microteachings with assessment form 4. peers should not give offensive feedback

Table 4.14 continued

Research Questions	Contributions	Challenges
2.4 What are the contributions and challenges of being assessed through the microteaching assessment form, for preservice teachers' instructional planning and microteaching skills?	<ol style="list-style-type: none"> 1. providing fair assessments to a ratio of around 90% 2. ultimately improving teaching skills and performance 3. providing analytic or detailed feedback <ul style="list-style-type: none"> • recognizing weak points and mistakes • encouraging them and increasing self-confidence 4. facing up to self-evaluation 5. contribution of using the rating part to prepare microteaching 6. motivation of microteaching performer due to being assessed 7. becoming aware of others' different viewpoints 	<ol style="list-style-type: none"> 1. contradiction in feedback by peers 2. problematic form filling in habits of peers <ul style="list-style-type: none"> • leaving blank or filling in superficially the comments part • problems about filling the rating part 3. unfair assessment <p style="text-align: center;">Suggestions</p> <ol style="list-style-type: none"> 1. written feedback as a must and more preferred 2. need for oral feedback with limitations in mind <ul style="list-style-type: none"> • need for 5-10 minute discussion after each microteaching performance and its assessment with form, • discussing the critical points in assessments in the next meeting 3. increasing fairness of assessments 4. orienting/training preservice teachers about assessing and corrective feedback
2.5 What are the contributions and challenges of doing a self-reflection assignment, which involves analyzing feedback given by the instructor, teaching assistants and peers?	<ol style="list-style-type: none"> 1. necessity of this assignment to complete microteaching process for recapping and coming to a conclusion 2. well-designed, well-structured, prepared professionally, comprehensive and effective in the proper sense 3. analyzing assessments and feedback and responding to them contributed to <ul style="list-style-type: none"> • providing self-criticism, to self-evaluation, and self-reviewing • opportunity to respond criticisms and defending oneself • promoting to develop alternatives for compensating one's own deficiencies • opportunity of deeply understanding strong and weak points • providing to think on the feedbacks to compensate their weaknesses • contributed to one's own teaching style 	<ol style="list-style-type: none"> 1. about analyzing assessments <ul style="list-style-type: none"> • peers not seeing all the responses to feedbacks, but only the instructor's • waste of time since it is enough to read strong and weak sides in the forms 2. About self-reflection essay: <ul style="list-style-type: none"> • not understanding what was expected and what exactly to do in terms of relating practice to theory • not paying much attention on to theories • boring • being challenged with relating theory and their strongest and weakest sides <p style="text-align: center;">Suggestions</p> <ol style="list-style-type: none"> 1. dividing into two parts since it is cognitively loaded 2. focusing only on negative feedback when analyzing feedbacks and responding to them 3. giving information and implementation of theories before the microteaching planning, then associating theory and practice can be done better
3. What are the effects of cognitive tools and the microteaching method used in the Teaching Method II in computer education course, on preservice teachers' field teaching planning and performances?		
<ul style="list-style-type: none"> • It was seen that more than half of preservice teachers preferred to use the MPG or adapt it, when developing their field teaching plans. • In the introduction part, it was seen that all of them give importance to motivating pupils and informing pupils about learning outcomes, and a majority of them also planned to remind pupils of the previous lesson. In the core part, they all described learning activities and majority of them addressed how to recall prerequisite/prior knowledge. In assessment and closure parts, two-thirds of them claimed that they will somehow make an assessment, and a majority of them also considered summarizing major points in this part. • When their field teaching assessments are analyzed, all of the participants received praise for their strategies in the introduction part, including the introduction to the lesson, motivating pupils, informing objectives, and reviewing previous lesson/prior knowledge. In the core part, they usually got more praise than criticism in the following aspects: Teaching in accordance with pupils' level, Giving examples, Instructional materials, Practice and Feedback, Providing active participation. • While one-fourth of them received praise for teaching strategies, methods, techniques, there were two participants criticized for using the same method along the core part and two other participants who were stated not to use the methods appropriately. Two participants were praised for appropriately summarizing major points. • It appears that in classroom management, communication, time management skills and mannerism, the number of participants who received praise is more than that of those who got criticism. It was also notable that teaching assistants only emphasized the existence of anxiety for two participants. 		

CHAPTER 5

DISCUSSION

In this chapter, for each research question, major findings were given first, and then they were discussed in the light of the related literature. It should be noted that the conclusions of the study -including implications for practice- and the recommendations for further research are presented in the next two chapters, respectively.

5.1 The Contributions and Challenges of the Cognitive Tools for Instructional Planning

When the ID models taxonomy of Gustafson and Brach (1997) are examined, the ID models classified as most applicable to the classroom environments was implied as not understandable for every teacher, thus they are already not appropriate for preservice teachers to learn and make instructional planning at all. There are few efforts in the literature to support preservice/novice teachers' thinking in lesson planning (e.g. ID_{NT} model by Brantley-Dias & Calandra, 2007; Cognitive tools for instructional planning by Baylor & Kitsantas, Chung, 2001; Kitsantas, Baylor & Hu, 2001). The first phase of the current study focused on contributions and challenges involved in using the cognitive tools for instructional planning with tutoring from the instructor.

5.1.1 The Extent of Preservice Teachers' Using the Cognitive Tools during Instructional Planning

The Extent of Using IPSRT: All the preservice teachers' degrees and patterns of following the IPSRT were nearly the same although the sections' quiz cases are different. It was observed that they were all able to write an instructional goal and assessment according to the directions in the IPSRT. Almost all of them could also meet what IPSRT demands for the parts of materials/preparation, learner characteristics, and procedure. Yet, the results revealed that they were most challenged when writing objectives or they did not consider several items indicating the characteristics of good objectives in this tool.

These results indicate that the preservice teachers could not together consider the "behavior", "condition" and "degree" components of behavioral objectives, which are

stressed in the IPSRT. There might be three reasons underlying this: firstly, students had already received instruction in how to write objectives in their previous three-year education program. They might have thought that they already knew how to write objectives, so they did not strictly follow the tool in this respect. In other words, they wrote objectives in such a way that they accustomed to or already known. Secondly, they might have preferred to write short and coinciding behavioral objectives rather than more descriptive ones that the ABCD (Audience, Behavior, Condition, Degree) model for writing objectives demanded, which is promoted by the IPSRT. Similarly, in Schlitzkus' study, a majority of teachers informed that short and coinciding behavioral objectives are more beneficial for them than in the ABCD model, which is suggested in the lesson planning manual that Schlitzkus (1981) developed. Thirdly, if they had not mastered writing objectives before, the instruction given at the beginning of the intervention to introduce how to write objectives in conformity with the IPSRT could have been inadequate and too broad to teach them how to write objectives, from scratch, considering all the components of a good objective given in this tool.

The literature indicates that lesson planning is centered on facts and experiences rather than theory (McCutcheon, 1980; Richard, 2004). The facts that frame these teachers' thoughts and actions were about content, materials and time (Richard, 2004). Rather than theoretical, teachers approach planning as a practical task, no matter their levels of teaching experience (Richard, 2004). Deciding what to teach, which materials to use and how to arrange instruction within prescribed timeframes are more considered by teachers than what should be taught and what should be the best way to teach the topic (McCutcheon, 1980). Thus, the participants of the current study were also observed to concentrate on designing effective learning activities, rather than dealing with what should be taught in detail.

It appears that the systematic nature of the IPSRT, providing a way to plan instruction in the objectivist paradigm, is familiar to the preservice teachers. Almost all the questions in this tool -except for four question prompts related to objectives- were followed or considered by the preservice teachers when developing their instructional plans. In this regard, this tool could have a great potential in assisting preservice teachers to write lesson plans individually or in groups during self-directed practice, as intended by its developers (Baylor, Kitsantas & Chung, 2001).

The instructors in teacher training programs can have their students use this tool in order to acquire lesson planning skills and strengthen these skills, of course they should also provide sample plans with the tools and tutoring during their planning process. However, when introducing this tool to students, they should especially check whether the students know writing behavioral objectives or not. If the students do not know this, then the instructors should explicate how to meet the prompts for writing behavioral objectives (the

ABCD model for writing behavioral objectives), and emphasize the its importance or present an alterative way of writing objectives, if the way in the tool (ABCD form) is not preferred.

The Extent of Using CPSRT: Analyses of the CPSRT quiz also indicated parallel patterns in most of the prompted questions for both sections. Section 1 took the CPSRT as a first tool, and Section 2 took it as a second tool. According to the results, all the preservice teachers successfully met all the requirements of the CPSRT for specifying “*instructional purpose*” and “*assessment*”, if applicable. Furthermore, almost all of the preservice teachers could meet the requirements in describing “*Required characteristics of learning activities*”.

Furthermore, it was observed that all the items in the “*instructional purpose*”, “*required characteristics of learners*” and “*assessment*” parts worked, since the option of “not applicable” was marked in a few items for a few times when analyzing the plans. The major difference among the sections in these three parts was that only around half of the preservice teachers in Section 1 could address one of the required characteristics: “*how to integrate information with prior knowledge of students in the activities*”, and a role of the instructor parallel to this: how “*the teacher makes students recall necessary prior knowledge*”, whereas most of the preservice teachers in Section 2 could address both of these prompts. This could be due to the fact that Section 2 used the IPSRT at first, since they have already realized the importance of recalling prior knowledge and also considered this when planning with the CPSRT. In this sense, if both tools were to introduce to both sections, it would be better to introduce the IPSRT at first to preservice teachers.

For the “*Desirable characteristics of learning activities*” part of the CPSRT, a majority of preservice teachers in both sections managed to address “*are defined in part by the learner*”. Yet, only Section 2 was successful in considering desired characteristics of learning activities that requires social interaction. More than half of the question prompts were nonworking ones in this part. This was due to the fact that the tool already indicates that this part includes optional criteria for constructivist learning activities, i.e. not obligatory, and preservice teachers have already known it. Hence, they may not have spent special effort and time to meet all desirable characteristics of learning activities.

Preservice teachers in both sections described the “*role of instructor*”, including the following prompts: “*If students are working independently, then the instructor provides access to the information needed to complete the activity*”, “*Facilitates students’ learning through the learning process*”, “*Encourages student ownership of the learning process*”. However, both sections seemed to fail to describe how the instructor “*helps the students develop connections between principles, theory and real life*”. The remaining roles of the instructor were considered not applicable in both sections (“*Challenges the students’ ideas when appropriate*”, “*Encourages students to monitor their thinking*”, “*If students are*

working in collaborative groups, then the instructor facilitates the group work and encourages interaction”).

As to the “*role of student*” part, many preservice teachers in both sections succeeded to describe half of the prompts (“*Reflects on his/her performance/s*”, “*Takes responsibility for learning*”, and “*Engages and cognitively active*”). The remaining roles of student were marked as not applicable for almost all of the plans of the subjects (“*Selects appropriate strategy/ies during the activity/ies*”, “*Monitors his/her learning progress*”, and “*Evaluates himself/herself*”).

There are two problems detected in using the CPSRT while planning lessons. It was observed that students tended to write instructional purpose with a broad sentence, and not to describe the learning outcomes. The “instructional purpose” part of the CPSRT could be revised so as to prompt a description of learning outcomes in some detail.

Furthermore, the results show that around half of the items of the CPSRT under the subtitles of “*desirable characteristics of learning activities*”, “*role of student*”, and “*role of instructor*” did not work or were not applicable. The reasons of nonworking prompts could be explained through three hypotheses. Firstly, preservice teachers could not have really grasped the meaning, necessity or importance of these items well enough to describe them in their plans. If this is the case, then the instruction for introducing the CPSRT may not have been sufficient to explain how to involve these prompts in lesson planning. Extra related instructions and explanations should be given on these prompts when introducing the tool.

Secondly, they simply omitted them because they thought that those items were not applicable for their activities. In fact, these items are mostly scored as not applicable due to the nature of the instructional goal, designed learning activity, and students’ grade level. More specifically, nature of the designed activity plays a key role in whether question prompts of the CPSRT work or not. For some items, the nature of the instructional goal is also a determining factor in deciding the related items as applicable or not applicable. For instance, the instructional purpose given for Section 2 is “Pupil uses e-mail in order to share information”. Like many objectives in the computer education curriculum (MONE, 2006), this objective involves highly applicable knowledge and skill in daily life and does not directly relate to any theoretical knowledge. Therefore, it is expected that the following role of instructor: “*helps the students develop connections between principles, theory and real life*” could not be met by many preservice teachers. This means that, if the CPSRT is applied in a field-specific instructional goal, some of its question prompts may not work due to the nature of that field.

Thirdly, designing a lesson in the constructivist approach is a new task for the preservice teachers and they had not much experience in planning constructivist lessons, as some of them noticed in the interviews. Thus, they could have some anxiety and difficulty in designing a lesson with the CPSRT, which might negatively affect their planning performance. Furthermore, expecting indicators of all the prompts at the same level could be unfair in designing just a 40-minute lesson for a class in 1st-8th grade, developed for the quizzes. Nonetheless, the preservice teachers in the current study developed lesson plans in the quizzes were generally detailed and comprehensive, and had been prepared by considering the prompts under the titles of instructional goal, required characteristics of learning activities and assessment, compared to the plans that a student had done with the IPSRT and CPSRT given as example in the study of Baylor & Kitsantas (2005).

Another noteworthy finding was Section 1, which took the CPSRT at first, seemed to experience more difficulty in using the CPSRT than the other section which had already used the IPSRT. Similarly, if both tools are to be introduced to preservice teachers, it can be better to introduce the IPSRT at first.

On the basis of these results, the CPSRT could be used in initial teacher for quizzes in the current study training programs to practice planning for constructivist learning environments, particularly in specifying instructional purpose, required characteristics of learning activities, and assessment. It can also increase preservice teachers' awareness regarding desirable characteristics of learning activities, and roles of instructor and student in a constructivist lesson. In this sense, it could trigger preservice teachers' planning skills for constructivist learning environments.

The analysis of the lesson plans with the rubrics enabled the researcher to realize the need for some amendments to the tools. Firstly, the researcher recognized that the preservice teachers sometimes assessed some knowledge or skills that were beyond the scope of the goals and objectives of the lesson. In order to prevent them from such a mistake, a question prompt could be added to the "assessment" part of both cognitive tools. This prompt should remind preservice teachers not to assess any behavior that is not within the goals or objectives of the lesson, unless they assume that they taught it in a previous lesson or that it is already part of the pupils' prior or prerequisite knowledge.

Secondly, although preservice teachers were reminded that they could divide the instructional goal or learning outcomes so as to make a feasible plan to be taught in 40 minutes, they could not exactly manage to create a plan which can be implemented in 40 minutes. Considering the quiz results, the researcher came to such a conclusion that there is no guiding mechanism in the tools to make the planner think of whether the instructional purpose/goal is appropriate for the level of learners and whether the plan could be really

implemented in the specified time -40 minutes in the quiz cases. Further, there is no mechanism to assess to what extent the written plan is realistic. Accordingly, appropriateness of overall instructional goal to target grade level and time consideration could also be added to the tools. However, meeting these two additional prompts could be directly related to the teaching experience of the planner. Therefore, although preservice teachers meet the existing prompts in the IPSRT or CPSRT, they may still need tutoring by the instructor, especially corrective feedback, for more qualified, feasible and realistic planning. Note that the subjects received no feedback from peers or the instructor for their plans in the quizzes. Thus, oral and written feedback and correction from the instructor and peers should be given for the lesson plan to compensate for such deficiencies regarding the scope of content, and time management.

5.1.2 Effects of the Cognitive Tools on Self-efficacy for Instructional Planning

This study revealed that there is a significant effect of the tools with tutoring by the instructor on preservice teachers' self-efficacy for instructional planning. The effect size is .28, which is large and educationally meaningful according to Cohen (1977). This indicates that 28% of the variance in the preservice teachers' self-efficacy regarding instructional planning was accounted for by the treatment of the tools with tutoring the by instructor. Further analyses indicated that both tools have significantly increases initial self-efficacy, but there is no statistical significance among the self-efficacy scores measured after the treatment of the tools. This means that both tools seem to have similarly significant impact on improving initial self-efficacy.

However, there was also a significant order effect. The interaction between the sections (which took the tool treatments in different order) and type of tool treatments was significant, indicating that 32% of the variance in the self-efficacy scores in the sections was accounted for by the type of the tool treatment. The IPSRT treatment affected the participants' self-efficacy scores more positively when it was introduced to the preservice teachers firstly, and the CPSRT treatment affected them more positively when it was introduced after the IPSRT treatment. Considering this finding, if both tools were to be introduced to any pedagogical knowledge course, the IPSRT should be introduced to preservice teachers before the CPSRT in order to increase their effects on self-efficacy regarding instructional planning.

The result, the effect of both tool treatments on initial self-efficacy, is corroborated by Baylor and Kitsantas (2005), who compared these tools in enhancing self-efficacy for instructional planning with 42 preservice teachers in an introductory educational technology course. They reported that there were significant differences between their subjects' initial

self-efficacy regarding instructional planning and their self-efficacy after using each of the tools. They concluded that both tools had an equal impact on increasing self-efficacy regarding instructional planning. However, this result was not supported by their previous study. In that study, Kitsantas and Baylor (2001) investigated change in self-efficacy beliefs regarding instructional planning after IPSRT intervention for the experimental group. Their result showed no significant change in the self-efficacy beliefs of students. However, with some further analysis, Kitsantas and Baylor (2001) recognized that students initially having high-self-efficacy reported significantly lower self-efficacy, while students initially having low self-efficacy reported significantly higher self-efficacy, after the tool intervention. They explained this finding as, the IPSRT may have highlighted the complexity and comprehensiveness of instructional planning for high-self-efficacious students while it makes low self-efficacious students feel more competent in writing an instructional plan.

The literature on self-efficacy informs that self-efficacy is a belief about what one is capable of doing a certain task, not the same as knowing what to do (Schunk, 2000). However, Geen (1995) states that the concept of self-efficacy has been developed, it applies more generally to goal-related behavior, and has been used as a synonymous with the ability to carry out a desired behavior (Geen, 1995). As to the effects of self-efficacy, increase in self-efficacy has a positive effect on motivation for performance (Geen, 1995; Schunk, 2000). Pintrich and Schunk (1996) also deduce that self-efficacy beliefs have been shown to be important motivators of all types of achievement behavior as well as many other types of behavior. In fact, efficacy can influence learner's choice of activities (Schunk, 2000). Students in low-efficacy for learning may avoid tasks, while high-efficacious students participate more eagerly, expend greater effort and persist longer to learn. Considering the interaction between self-efficacy and intrinsic motivation in the literature, this result is promising in increasing preservice teachers' self-efficacy regarding lesson planning, and thus, increasing their intrinsic motivation towards lesson planning in their future professional life. Thus, efforts to increase and keep high the learners' self-efficacy level are important for educators, also by teacher educators.

As a result, the treatments for introducing these tools have a significant, an equal and positive impact on preservice teachers' initial self-efficacy for lesson planning. Furthermore, when IPSRT is introduced at first, both cognitive tools have more positive effects in this self-efficacy compared to the other case. In order to help preservice teachers equipped with not only knowledge and skills regarding instructional planning that are necessary in their professional life, but also affective gains such as self-efficacy -and indirectly self-motivation towards planning-, the teacher trainers can use these tools to enhance preservice teachers' self-efficacy for instructional planning.

5.1.3 Effects of the Cognitive Tools on Perceived Instrumentality of Instructional Planning

The effects of the tools on subjects' perceived instrumentality of instructional planning was also investigated. Perceived instrumentality of instructional planning refers to the extent of the importance given to instructional planning. The mixed-design ANOVA results indicated no significant tool effect on perceived instrumentality. This means, the variance of the linear combination of instrumentality scores is not accounted for by the type of the tool treatment. Furthermore, there was no order effect, that is, introducing the order of tool treatments did not change this result.

Kitsantas and Baylor (2001) also obtained a similar result in their study assessing the impact of the IPSRT on subjects' perceived instrumentality of instructional planning. Their result showed that the tools do not significantly increase students' perceived instrumentality mean score. Nevertheless, they stated that experimental group viewed instructional planning as more important than the students in the control group. It should be noted that the current study had no control group, and it has a within-group design for the treatment of the tools. However, both sections' means of instrumentality scores initially and after the intervention of each tool were close to each other and all are already above four out of five. This means, the instructional planning is very important for the participants, and engaging treatment of the tools neither increased nor decreased their perceived instrumentality.

5.1.4 Contributions and Challenges Presented by the Cognitive Tools in Developing Instructional Plans

IPSRT: The IPSRT was developed by on the basis of research on self-regulated learning (Zimmerman, 2000) and instructional planning model of Reiser and Dick (1996) (Baylor, Kitsantas, & Chung, 2001). It facilitates implementing a traditional instructional systems design planning model. This tool was intended to facilitate the use of self-regulatory strategies, especially self-monitoring and self-evaluation during the lesson planning process (Baylor, Kitsantas & Chung, 2001).

In the present study, it was found that the IPSRT can be beneficial for promoting some self-regulatory strategies of the subjects during instructional planning. The analyses of the questionnaires showed that the IPSRT helped them in self-monitoring (60%), organization (53%) and self-evaluation (30%). It should be noted that the benefits of the IPSRT on shortening planning time and making the planning process easy were coded as the dimensions of organization, during data analyses. Furthermore, the IPSRT seems helpful in mastering the components of lesson planning in the traditional approach (37%). When the reported benefits gathered under these categories were examined, it could be said that the IPSRT best worked for self-monitoring, organization and acquiring planning skills in the

traditional approach. Moreover, IPSRT indirectly and potentially serves to self-evaluation since self-evaluation involves self-monitoring. The interview results also approved that IPSRT worked as intended for more than half of the preservice teachers in self-monitoring and organization, while it worked less in self-evaluation.

The interview results indicated that, more than one-fourth of the participants underlined the systematic, structured and familiar format of IPSRT to make lesson plan stepwise. One fifth of participants stressed that it makes the planning easier. On the other hand, a few participants reported some difficulties with this tool, such as feeling as if they were making the plan for another person or just for a place in a file, but not for use, and feeling that the tool limits creativity. In general, the familiar format of IPSRT and easiness of lesson planning with this tool were often emphasized throughout the interview and questionnaire results. Its step-by-step and prescriptive nature makes preservice teachers easily plan lessons in self-directed manner.

In the literature, Baylor, Kitsantas and Chung (2001) also conclude from 175 students' responses, to an open-ended question about the benefits of the IPSRT, that it was useful for self-regulation strategies -self-monitoring (80% of students), self-evaluation (75%), and organization (25%). Although the present study showed smaller percentages in contribution to self-monitoring and self-evaluation, and greater percentages for contribution to organization, the potential of IPSRT to activate self-regulatory strategies during planning was clearly indicated by the present study. The different percentages for self-regulatory benefits in the present study and that of Baylor, Kitsantas and Chung (2001) may have resulted from different interpretations in coding the responses into self-regulatory skills, from different sample profiles in terms of grade level and field of education, and from different nature of the interventions. Nevertheless, it could be said that the current study indicated parallel results with their study.

CPSRT: In order to meet the need for more structured guidelines to support preservice teachers in the process of ID in the constructivist approach during self-directed practice, Kitsantas, Baylor and Hu (2001) developed the CPSRT. They stated that it facilitates *self-monitoring*, *self-evaluation*, and *organization* from a self-regulatory perspective (Zimmermann, 2000), and *cognitive flexibility* from a constructivist perspective (Jonassen, 1999). Thus, the use of this tool is expected to facilitate improving these self-regulatory strategies.

According to the analysis of open-ended questionnaire item, preservice teachers implied that the CPSRT is beneficial for self-monitoring (50%), self-evaluation (40%), organization (30%), acquiring planning skills in constructivist approach (30%) and cognitive flexibility (9%). The benefits of shortening planning time and making the planning process

easier were considered among the dimensions of organization, as it was done for the results regarding the IPSRT.

In the interviews, some contributions and challenges encountered in using the CPSRT were stated. Several participants touched upon the following contributions of the CPSRT to lesson planning: helping them focus on the learning activity, helping them to learn to plan a constructivist lesson, enabling them to make self-evaluation and helping them promote creativity in designing learning activities. As for the challenges presented by the CPSRT, a few participants articulated its unfamiliar style, not understanding several concepts under its subheadings, some items in the tool that were redundant or inapplicable because of instructional purpose, and excessiveness of the “role of instructor” and the “role of student” parts.

The study of Kitsantas, Baylor and Hu (2001), which used 84 students to investigate the value given to CPSRT, also indicated similar self-regulatory benefits. They asked the students what was helpful to them about using the CPSRT during instructional planning. The responses were coded in terms of whether the student answer had a value regarding self-evaluation (yes/no), organization (yes/no), self-monitoring (yes/no), and cognitive flexibility (yes/no). For 38% of the respondents the CPSRT was useful for self-monitoring; for 38% of them it was useful for self-evaluation; for 33% of them it was useful for organization; and for 31% of them it was useful for cognitive flexibility. Although these percentages are not too satisfactory, Kitsantas, Baylor and Hu (2001) concluded that the results supported the intended scope of this tool. The percentages are different in its contribution to self-monitoring and cognitive flexibility, but the percentages of self-evaluation and organization have similar to results of the current study. Thus, it was seen that the CPSRT especially has potential to enhance self-evaluation, self-monitoring and organization in constructivist lesson planning. However, it does not have such an impact on cognitive flexibility as Kitsantas, Baylor and Hu (2001) and Baylor and Kitsantas (2005) proposed. In fact, only 9% of preservice teachers implied that the tool facilitated cognitive flexibility in the present study, although tutoring was provided by the instructor in addition to using CPSRT.

Comparison of both tools: Descriptive analyses of the ratings regarding the value of both tools in the questionnaires indicated that the subjects valued both tools equally in terms of easiness of use, interestingness, and worthiness of recommendation, whereas they value them differently in terms of their flexibility and helpfulness. More specifically, the subjects found the CPSRT more flexible than the IPSRT. However, they found the IPSRT more helpful in lesson planning than the CPSRT. These results are partially consistent those of Baylor and Kitsantas (2005). In their study, their students give a similar value to both tools in terms of all the considered characteristics; however, in the present study, the subjects

seemed to find the CPSRT more flexible and the IPSRT more helpful. This difference in results could be explained as that the subjects of the two studies have different profiles and there are differences in treatments of the tools. The subjects of the present study are homogenous because they are from the same field, and seniors, while those of Baylor and Kitsantas (2005) were from various fields and at various stages of initial teacher education. They did not provide any tutoring or feedback to students' plans. The homogeneity of the sample in the present study, the fact that they are senior in teacher training program and receiving tutoring in the treatment of the tools could lead to difference in value given to the tools for helpfulness and flexibility.

More specifically, these differences in two studies could be explained from the situation of the current study as follows. Since the subjects in the current study are close to graduate the program, they have a certain accumulation of pedagogical content knowledge, and this accumulation might make them aware of the differences of IPSRT and CPSRT more than those students in their study. In fact, the IPSRT was designed as a prescription of how to plan a lesson (Baylor, Kitsantas, & Chung, 2001), with its step by step nature, while the CPSRT was designed as a figurative menu of constructivist ideas to be selected when designing constructivist learning support (Kitsantas, Baylor, & Hu, 2001), by providing some flexibility for the planner to select appropriate ideas from that menu. As a natural consequence, the subjects found IPSRT more helpful since it is systematic, and CPSRT more flexible.

It seems that both tools contribute to learning to make lesson plans in intended theoretical approach. According to the questionnaire results, 37% of the subjects implied that the IPSRT was helpful in mastering the components of planning in the traditional (e.g. instructivist) approach and 30% of them implied that CPSRT is helpful in acquiring planning skills in the constructivist approach. Similarly, Baylor, Kitsantas and Chung (2001), and Kitsantas, Baylor and Hu (2001) particularly stated that IPSRT and CPSRT may be used to support preservice teachers in self-directed learning to gain instructional planning skills. Kitsantas and Baylor (2001) concluded that the IPSRT significantly improves lesson planning performance. Kitsantas, Baylor and Hu (2001) recommend instructors in STEs to use CPSRT in order to guide students in selecting required and desirable elements when developing constructivist lesson plans. Later, Baylor and Kitsantas (2005) indicated that there is no significant difference between the IPSRT and CPSRT in terms of their effects on the planning performance of students. Therefore, these tools can be used as supportive tools by teacher educators in enhancing preservice teachers' instructional planning skills in the traditional and constructivist approach.

The relatively retentive effect of the tools on instructional planning skills could be understood from the interview results. A majority of the interviewees found these tools helpful in learning to develop lesson planning. More than half of the interviewees particularly underlined that these tools are very effective in practicing lesson planning. One third of them stated that the tools improved their self-regulatory skills (particularly self-evaluation, self-monitoring and organization) and one third of them claimed that the tools had a positive influence on their attitudes and motivation towards instructional planning. Furthermore, a few participants underlined that they mastered how to plan lessons in two different theoretical approaches by using these tools.

Consequently, these tools seem to have a potential to support preservice teachers' practice of lesson planning in traditional and constructivist approaches, which involves becoming aware of components of planning, activating self-regulatory skills, increasing self-efficacy for planning as well as transforming theory into practice. What is different from previous research on using these tools was firstly related to their self-regulatory benefits. Both tools were found to support self-monitoring and organization much more than self-evaluation and cognitive flexibility. Furthermore, the positive impact of these tools on self-efficacy and planning performance greater when the IPSRT was introduced at first and the CPSRT was introduced at second. Finally, the present study clearly revealed that the IPSRT can be used to acquire instructional planning skills and master components of planning in traditional approach, whereas the CPSRT can be used to familiarize the students with applying basic constructivist principles when planning constructivist lessons.

5.2 The Contributions and Challenges posed by Microteaching Activities in Improving Instructional Planning and Teaching Skills

In the present study, a smooth transition from a university to a school context, and simplification of the real classroom environment, proposed as characteristics of practicum by Schön (1987), were tried to be provided through microteaching activities in the Teaching Method II course. This course focuses on micro strategies of teaching, and it is offered one semester before the preservice teachers' field teaching. As Wilson and I'Anson (2006) noticed, a strong university-based dimension to initial teacher education is both necessary and desirable. In this sense, the researcher, who has one year of teaching experience as a computer teacher in an elementary school, implemented a microteaching model using the cycle "plan microteaching with tutoring, perform microteaching, and reflect on microteaching performance by means of written feedback", from the view of the microteaching performer. The re-plan, re-teach and re-reflect parts have not been applied for long microteaching episodes in the original microteaching model developed in Stanford

University, therefore no reteach session was done. Authentic pupils could not be taught in microteaching sessions. Each student performed only one microteaching session because of limited resources pertaining to human resources, financial resources, place and equipment and a considerable number of preservice teachers (N=51) taking the course. In fact, one of the ultimate aims of this research was to develop an applicable microteaching model under such conditions. In the second phase of study, the researcher investigated the contributions and challenges presented by the microteaching activities, as components of the microteaching model. The researcher tailored these microteaching activities to current conditions and student needs. Significant findings for each activity are discussed below.

5.2.1 Microteaching Planning Process with Tutoring

The researcher conducted tutoring in the microteaching planning process of the preservice teachers. As in the role of instructor, she was subject expert, coach and assessor (Shepherd, 2000). This tutoring largely consisted of giving face to face oral feedback, and online written feedback via e-mail to their draft microteaching plans. During tutoring, there was a constructive dialogue between the student and the instructor concerning how to make the plan more applicable and feasible. The analysis of the interviews showed that most of the participants highly valued the tutoring applied along with microteaching planning process. A majority of them thought that they became aware of the importance of planning lesson by means of tutoring. Furthermore, they articulated that they learned how to plan various components of instructional plan, such as correctly selecting and using instructional strategies, methods and techniques; considering learner characteristics; motivating students; and ways of assessment. Moreover, one third of the participants stated that they learned how to make an “applicable” plan due to necessary, corrective and constructive feedback for microteaching plans throughout the tutoring process. In addition, many of the participants claimed that tutoring enabled them to retain what they had learned and to transfer lesson planning skills into other courses. For instance one of them explicitly stated that she could plan lessons mentally even in a short time in her teaching practice in the school by saying:

Since we have learned the planning process, actually no matter you give me a day or 10 minutes, again I go through the same process by thinking in my mind. That is to say, again I think about attracting students’ attention, motivating them, whether the samples given by me are appropriate for their level or not.” (S43)

Besides, one-fifth of the participants mentioned its contribution to their self-confidence in microteaching. The Learning Assistance Center (n.d.) states that the purpose of tutoring is to help students help themselves, or to assist or guide them to the point at which they become an independent learner, and thus no longer need a tutor. These results validate that tutoring throughout planning process enabled preservice teachers to become more

competent and self-confident especially in lesson planning, as independent practitioners. It can also be stated that this tutoring process has positive influence on preservice teachers self-confidence regarding microteaching and subsequent teaching experiences. Similarly, the Learning Assistance Center (n.d.) claims such benefits to the students who receive tutoring as providing greater congruence between teacher and learner, closer role model, improving academic performance and personal growth, improving attitude toward subject area, motivating self-paced and self-directed learning, provides intensive practice for students who need it and improving self esteem. The findings also show that by means of the tutoring process, the participants of the present study became aware of the demands of teaching profession and complexity of planning and teaching.

The literature also points out the crucial role of feedback from instructors for lesson plans in developing preservice teachers' reflective thinking ability (Bagcioğlu, 1999). In her qualitative study, Bagcioğlu (1999) investigated the effectiveness of supervisor's feedback on lesson plans before teaching practice (done at schools). The followings were studied in this work: supervisor, mentor, and peer feedback; journal writing, self-evaluation of their teaching reports, and seminars on the preservice teachers' reflective thinking. The findings indicated that, amongst these, feedback from supervisors, peer discussions, and self-evaluation had important roles in the development of preservice teachers' reflective thinking abilities and in the improving their teaching skills.

As for the challenges posed by microteaching planning process with tutoring, there were a few mentioned problems encountered throughout tutoring. These were delay in written feedback and scheduling problems for oral feedback. In fact, most of the participants stated that they encountered no problem in this process. These problems stemmed from the fact that the research (also the instructor) did not give any duty to the teaching assistants in tutoring, thus her workload considerably increased. In fact, providing preservice teachers with tutoring in microteaching planning process is a time-demanding and laborious task. To overcome this problem, teaching assistants should be included in the tutoring process.

The participants made suggestions about the medium of feedback and the MPG. Regarding feedback, it is understood that more than half of the participants thought that oral feedback is more beneficial and its frequency should be increased, especially for the initial planning stages such as selecting topic, active learning strategies and learning activities. One of them stated the value of as: "...for more dynamic tasks, it is more logical to talk about this mutually, like 'mm be it so', 'look, this can be possible, too'. Actually, new ideas can emerge. Getting together for talking about some dynamic topics [oral feedback] is better" (S46). Regarding the MPG, one participant pointed out that the MPG should have a part

reminding students of the necessity for a plan B in the case of any problem when performing microteaching.

During the implementation of tutoring in the current study, the researcher spent a considerable amount of time in giving both oral and written feedback. She gave almost every preservice teacher oral feedback lasting around 20-30 minutes. In oral feedback sessions, which could also be called planning conferences, a constructive dialogue with each preservice teacher on his/her intentions for the microteaching was established, in terms of specifying instructional goal, selecting methods, active learning strategies, ways of applying methods appropriately, instructional materials, and assessment techniques, etc. As for written feedback, the researcher gave it to preservice teachers' draft microteaching plans through e-mail, generally twice for each preservice teacher. She wrote comments when necessary, called attention to mistakes and gave opinions or clues about how to correct these mistakes in the plan. She preferred to give more weight to written feedback because it becomes more retentive, corrective and detailed than oral feedback. However, the findings indicated that in microteaching planning process, preservice teachers need more oral feedback than written, for the sake of a more enhanced dialogue and eliminating misconceptions that could occur in written communication. In this regard, the model should be revised so as to give more weight to oral feedback in microteaching planning process.

In the literature, another way of individualized instruction, namely cognitive apprenticeship model, used in initial teacher training programs in order to teach instructional planning (Liu, 2005), to teach how to integrate technology into their instructional plans (Clark, 2002) and how to develop instructional materials with technology (Dickey, 2007). The results of the present study are similar to that of Liu (2005), which is about contributions of the cognitive apprenticeship model. In that study, the course based on the web-based cognitive apprenticeship model improved preservice teachers' performance and attitudes in instructional planning more effectively than the traditional training course.

Clark (2002) investigated whether the use of Collins, Brown, Newman (1989, as cited in Clark, 2002) cognitive apprenticeship model based on Integrating Technology for Inquiry Model (Morisson & Lowter, 2002, as cited in Clark, 2002) in an instructional technology course would positively affect the preservice teacher's beliefs/concerns about using computer as a tool to enhance student learning, perceived ability to use technology and integrate it into the curriculum in an appropriate manner and ability to effectively design lessons that integrate technology into the elementary school curriculum. The experimental group took fully attend authentic cognitive apprenticeship while the control group took a traditional instruction. The results indicated that the cognitive apprenticeship model positively affected attitudes and abilities regarding integrating technology into instruction, as

the results of the present study revealed the contributions of tutoring in microteaching planning.

Although there are plenty of studies on microteaching in the literature, there are only a few illustrating the process of how students develop their microteaching plan (e.g. Tinker Sachs, 1999). The current study has originality in this sense. The results revealed that the tutoring used in this study is a promising way, not only making preservice teachers aware of the components of planning, but also teaching them how to develop a realistic plan that is applicable in planned time under the specified conditions. Furthermore, it seemed to positively influence students' self-confidence in teaching skills. However, the results also revealed that the preservice teachers needed more face-to-face tutoring (planning conferences including oral feedback) during microteaching planning process than the online tutoring (sending written feedback via e-mail). Then, preservice teachers should be provided with tutoring in the form of planning conferences, including giving oral feedback to their draft plans and to their plans in their mind, in the initial phases of the planning process. In addition, they should be online tutored, which involves giving written feedback to their final written plans.

The monitoring and supporting of microteaching planning process through tutoring was highly appreciated by the participants. But, its laborious nature led the researcher to come conclusion that any instructor who plans to apply tutoring in the microteaching planning process needs teaching assistant support. Considering the workload coming with the tutoring, one assistant for ten preservice teachers could be assigned. In order to ensure that each preservice teacher engages in tutoring in similar quality, the teaching assistants should be trained on how to conduct planning conferences, how to give corrective feedback in oral and written form, and they should be supervised and monitored by the instructor.

5.2.2 Microteaching Performance

The contributions and challenges presented by microteaching performance, from the view of the performer, were identified by the participants. The results revealed that the experience of microteaching contributed to all the participants in various ways. First, the participants seem to become aware of some aspects of teaching such as the complexity and multifaceted nature of the classroom, impossibility of implementing a lesson plan word for word and the importance of having a plan B, the importance of lesson planning, importance of time management, and desired characteristics and roles of teacher.

Almost all participants found it useful to select content from the computer education curriculum for 1st-8th grades, as well (MONE, 2006). One participant emphasized the contribution of it as “now I know how I can prepare a lesson plan when I open the

curriculum. In fact, even though I do not write exactly these headings [in the tools], I know these should be in a lesson plan.” (S46). This and many similar comments from the participants showed that selecting objectives from the real curriculum for microteaching performance increased students’ self-confidence to use it in their future practice and to mentally plan their lessons. Furthermore, they learned from their mistakes. Based on their microteaching experience, they came to conclusion that a teacher should check instructional equipment and materials before the lesson, and should not become a bad model with unplanned examples and activities in gaining attention or motivating students. Moreover, they noticed some benefits regarding the application of theories such as putting teaching and learning theories into practice by means of microteaching, meeting and learning how to use active learning strategies.

Most of these gains from microteaching experiences also reported in previous studies (Amobi, 2005; Akalın, 2005; Şen, 2007; Sarı, Sakal & Deniz, 2005; Farris, 1991). In fact, many studies indicate that preservice teachers find microteaching useful (Şen, 2007, Wilson & I’Anson, 2006; Amobi, 2005; Higgins & Nicholl, 2003; Benton-Kupper, 2001; Kazu, 1999).

In order to investigate students’ views about microteaching, Akalın (2005) administered a questionnaire to students who performed microteaching and observed their peers’ microteaching which involves in teaching authentic pupils. Her findings strongly support the findings of the present study. She noted that the participants strongly agreed with the following statements: microteaching allowed them to assess their instructional strengths and weaknesses; videotaping and watching their own videos recorded during their presentation was beneficial to them; they gained many ideas and strategies to implement in the future through the various lessons observed in the microteaching sessions. They agreed with the following: the microteaching increased and/or developed their public presentation/communication skills; peer evaluations of their lessons were beneficial; and microteaching allowed them to have clearer idea of what it takes to plan and implement lessons.

Similarly, Sarı, Sakal and Deniz (2005) inferred that the following teaching skills students improved after microteaching intervention: introduction to the lesson, gaining attention, using teaching methods, using materials and equipment, anxiety in teaching to an actual classroom and classroom management. They concluded that microteaching decreases the anxiety of preservice teachers related to classroom environment and leads the participants to feel more confident about teaching skills in teaching computers to kindergarten pupils.

Şen (2007) also indicated that preservice teachers were satisfied with the microteaching method and believed that it would contribute to their future professional practice. Many preservice teachers stated that their stress levels in the real classroom decreased because of the microteaching applications. Students liked most the following aspects of microteaching: enabling self-evaluation (13 students), lessening anxiety by teaching in front of a group (10 students) and having a first teaching experience (6 students). Amobi (2005) also concluded that according to students in his study, microteaching was as a favorable method for meaningful learning experience and a pressure-free environment for planning, teaching, and reflecting on their teaching.

Farris (1991) states that microteaching (in which class-mates acts as pupils) not only improves teaching skills and increases self-confidence in teaching, but also gives students an opportunity to study the science of teaching. She claimed the following benefits for microteaching: increased self-awareness for individual students, improved performance in specific skills, heightened concern for performance evaluation, and increased self-confidence in presentation manner. Microteaching gives students the opportunity to receive feedback on their teaching manner and skills in a relatively nonthreatening atmosphere. Furthermore, it prepares preservice teachers for practical and student teaching exercises. She also touched upon the benefits of regularly observing peers in microteaching exercises, in terms of preparing preservice teachers for peer coaching and mentor relationships (Farris, 1991)

The participants seem to value the microteaching performance since they saw it a rehearsal of teaching and a preliminary experiment of teaching before the field teaching that they would do in “teaching practice” course in the next term. The literature also indicates that microteaching is not a substitute for teaching practice at schools (Allen & Eve, 1968; Wilson & I’Anson, 2006). Allen and Eve (1968) underline that microteaching is not a substitute for practice in teaching, for example problems of discipline and classroom control cannot be dealt with in microteaching settings, but it supplies some impressive alternatives such as close supervision, manageable objectives, continuous diagnostic feedback, unprecedented opportunity for self-evaluation, immediate guidance in areas of demonstrated deficiency, and an opportunity to repeat a lesson conveniently as often as desirable. Wilson and I’Anson (2006) also note that microteaching practicum not seen as an alternative to school-based experience, but it is a valuable preliminary field of action.

As for the challenges presented by microteaching performance, the most stated difficulty in their performances was anxiety and nervousness they experienced, due to existence of a camera, the limited teaching time and being assessed and observed. Because of this, more than one fifth of the participants informed that they forgot to do something they had planned, or that they lost their concentration. Similarly, participants felt anxious when

teaching their class-mates in previous studies (Higgins & Nicholl, 2003; Bell, 2007). However, in another study exploring students' perceptions regarding microteaching performance (Şen, 2007), the anxiety the students felt due to being recorded on video diminished as time passed in their microteaching. This was also stated by some participants in the current study. Nevertheless, there is an agreement in the literature that students find it valuable despite serious complaints about it, including the anxiety and nervousness they lived (Higgings & Nichol, 2003; Bell, 2007).

The second most frequently mentioned problem was the negative effect of teaching inauthentic pupils (class-mates acting as pupils) in their performance, articulated by many participants. Due to this, some of them stated that they could not perform their own real teaching performance. Mostly because of this reason they claimed that the microteaching environment did not provide an authentic environment for real teaching performance. This result was corroborated by the literature (Şen, 2007; Akalın, 2002; Skuja, 1990; Cotrell & Doty, 1971), which emphasizes that microteaching is more effective and meaningful when authentic students are taught. Skuja (1990) and Akalın (2002) argues that doing microteaching in front of peers acting as pupils is not effective since such a teaching environment is manifestly artificial and provides few of the challenges of the real-world classroom.

In the study of Akalın (2002) the preservice teachers complained about exactly the same problem. They stated that teaching unauthentic pupils impeded them to present their real teaching potential. Şen (2007) also noted that preservice teachers in his study complained about their class-mates' weaknesses in playing their actual teacher roles due to not being in an actual classroom environment during microteaching, as well. Skuja (1990) also argues that doing microteaching in front of peers acting as pupils is not effective since such a teaching environment is manifestly artificial and provides few of the challenges of the real-world classroom. He, therefore, proposed a "Pupil Experience" approach as an alternative to microteaching. In this approach, preservice teachers visit schools weekly to tutor small groups of remedial English language pupils. He stated that such direct pupil contact would provide hands-on experience with the realities of the classroom, while not burdening the preservice teachers with the challenges of full class management. All the preservice teachers who participated his study preferred Pupil Experience to microteaching (with peers acting as pupils, or simulated teaching), since even in small group situations they become actively aware of pupil responses and learning needs.

Similarly, as a result of their study, Cotrell and Dory (1971) recommended that the teaching practice sessions of the methods courses could involve teaching to high school students. They designed an experimental study to test two variations in the microteaching

techniques: feedback and type of student taught in an education methods class. Twenty-four preservice and inservice teachers participated in the study, each teaching two 7-minute micro lessons to peers or to high school students, with and without video feedback. The collected data included ratings on the critique forms completed by the teacher educator and questionnaires completed by the teachers. The statistical tests revealed no significant differences between the two groups. However, responses on the questionnaire indicated that the teachers who had received video feedback and had taught high school students were more positive in attitude towards teaching.

The participants made some suggestions concerning how to (1) increase authenticity of the microteaching environment and (2) opportunities to better prepare for microteaching performance. Regarding the microteaching environment, more than half of the participants suggested performing microteaching in front of authentic pupils. If it was not possible, the other suggestions were to increase the number of peers acting as pupils, to select talented students to act as pupils, to assign roles to pupils prior to the microteaching, or to assign all the class to act as pupils and to conduct microteaching in computer laboratories. In order to increase the authenticity of teaching in the microteaching experience, it is seen in the 2000s that microteaching has started to be used more in school contexts in many teacher education programs. Amobi (2005) explained this as, “the use of microteaching has expanded from its original focus of helping preservice teachers to master discrete teaching skills, to giving them the complete teaching experience and orienting them to teach in the natural classroom during field experience” (pp. 115-116). However, Subramaniam (2006) states that conducting microteaching on campus is still very common.

Çakır (2008) points out that teaching how to use a computer in the computer laboratory is different from teaching other subjects in the traditional classroom environment. In the study of Çakır (2008), 27% the preservice teachers claimed that preparing a lesson plan is very important and using that plan make the lesson abundantly productive, while 42% of them considered lesson plans and to be unnecessary for computer lessons and found the application of lesson plans in the computer laboratory very difficult. In his observation of preservice teachers practice teaching, he realized that they all planned the lesson well before their practice, and provided various types of materials and examples, but they experienced difficulty in implementing teaching strategies and techniques due to large numbers of students, individual differences and the varying readiness level of students. He also observed that they gave importance to methods in lesson plans while in practice they almost entirely followed different ways and methods. Many preservice teachers in his study also thought that they had difficulties in the evaluation part of the lesson. The interview and observation

of preservice teachers indicated that preservice teachers feel inadequate in terms of competency in pedagogical knowledge (Çakır, 2008).

His results indicated a gap between university training and real life practices and calls for restructuring of the CEIT program and revising courses including the pedagogical content knowledge. Considering this gap, the microteaching model used in the present study tried to simulate a computer laboratory in school by putting laptops on the pupils' desks and by conducting microteaching in an electronic classroom. Investigating the contributions and challenges presented by this model enables to understand the effectiveness of microteaching in teaching method courses in preparing preservice computer teachers to their real teaching in a computer laboratory at school. This is necessary based on Çakır's call for restructuring the pedagogical content knowledge course, including teaching method courses.

However, such simulation of the computer laboratory did not work as intended. The laptops were not effectively used in all microteaching sessions due to battery shortage and lack of appropriate software for the session and lack of internet connection. In fact, generally there was no practice on the laptops in the most successful microteaching performances. These students made presentations, discussion and used various visuals. These are similar methods to teach other subjects. This was because of that they would be assessed on their teaching performance. They tried to select topic which they will teach by emphasizing their strengths and make the lesson enjoyable and interesting for the assessors. A microteaching session which heavily took place on application on the laptops, which is the case in real computer lessons at school, the observers got bored and the performer could not present his/her real teaching performance. In fact, all the participants respected the aim of the microteaching model, and they benefited from this process. However, almost all of the participants emphasized that what they planned and performed in microteaching and what computer teachers do in their everyday teaching mismatched. One comment from a participant was as follows:

Since most of the computer lessons are based on application [practice on the computer], we can hardly see an expository teaching in our apprenticeship at school. Teachers only say that 'this and that one will be done' and then students start directly to application. That is to say, since this is a little bit an adverse condition for microteaching, the topic [inside of computer curriculum] can be emancipated. Let's say, if someone did not find an appropriate topic, s/he could also select another topic [out of computer curriculum] showing one's teacher ability. Since we are going to observe a teaching performance in the end, 'which topic will be presented' is no matter for us. (S48) [33]

The researcher actually observed the same issues in her teaching in an elementary school, and she designed the microteaching model to improve the routine teaching in the computer courses at school. This model contributed to the preservice teachers' lesson planning and teaching skills, but when they see the routine teaching of mentor teachers, they

saw that the computer teacher in the field do not give sufficient importance to plan their lessons and teach students in the computer laboratory. Almost all interviewees complained about this. Mentor teachers influence preservice teachers' attitudes, beliefs and practices regarding teaching and this situation results in preservice teachers not to apply what they learned throughout microteaching activities (Copeland, 1975). However, the main problem underlying this situation could be the fact that teaching how to use computer in a computer laboratory does not resemble to teaching in a classroom. Then, as Çakır (2008) stated, MONE should redefine the job description of the computer teachers in order to utilize their potential effectively in schools. Besides this suggestion, the current study showed that MONE should also explicitly define "how to cover the curriculum (MONE,2006) in a one-hour a week course" and "which teaching methods, strategies and techniques are appropriate and applicable" in a computer laboratory. As Çakır (2008) noted, considering increased penetration of computers in Turkey and computer literacy, computer teachers' main roles have better be shifted to educational technology consultant who supports technology integration of the technology into other subjects, rather than teaching how to use a machine, the computer. Parallel to this, the teaching method courses should be redesigned by YÖK so as to equip them in necessary qualifications to become an educational technology consultant in schools.

5.2.3 Assessing Peers

Preservice teachers were required to assess two of their peers who performed microteaching, one in the class hour, the other in the recitation hour from the video, by using the MAF every week throughout microteaching activities. This form was not intended to serve just as a means for summative assessment, but rather, for formative assessment, and as a learning tool for both the preservice teachers who were assessing and who were being assessed (Topping, 2005), by means of giving and receiving corrective feedback.

All the participants found assessing peers through the MAF useful and necessary because of various reasons. The majority of them particularly mentioned that assessing with the MAF allowed them to provide more detailed and cautious assessments and feedback, because, the form helped them to keep their attention on the microteaching episode and it motivated them to observe the microteaching, even in the case of uninteresting ones. Furthermore, a majority of them claimed that there were advantages in comparatively observing others' microteaching performance, from the point of one's view in an empathetic approach. In this way, they modeled and internalized strong points of a microteaching performance, while had learning from its weak points. More specifically, the participants who had performed their microteaching before internally compared others' performance with

theirs, whereas the ones who would perform microteaching later observed the microteaching episodes with more enthusiasm and attention considering their forthcoming microteaching. Several participants defined the other noteworthy positive effects of assessing peers with the MAF as gaining critical thinking skills, learning the lesson planning process, and examining the whole teaching process. Two participants emphasized the contribution of the MAF to objective assessment, as well.

Similar to the findings of the current study, Topping (2005) also states that peer assessment can enhance self-assessment, and both can yield metacognitive gains (Topping, 2005). Peer assessment may contribute to think assessors about their own work more (Woolhouse, 1999). Observational schedules have some value in peer assessment of professional skills (Topping, 1998). Category-based peer assessment forms would guide students to increase the objectivity of peer assessments (Bağcı Kılıç, 2005). An anonymous peer assessment would be better in terms of criticizing their friends (Woolhouse, 1999). Topping (2005) proposes that qualitatively assessing, or giving formative and qualitative feedback to, peers is more beneficial than just marking or grading. These suggestions were already taken into consideration when designing the MAF. Thus students highly appreciated the assessment of others' microteaching performance with the MAF, in terms of contributions to the performer and contributions to themselves as assessors.

On the other hand, the participants mentioned two major challenges of assessing peers with the MAF. First, one third of them articulated that they could not assess their peers fairly. They either tended to give higher points than the presenter deserved due to empathetic approach, friendship, to give morale and by being influenced by the presenter's high communication skills, or tended to give lower points than a performer deserved because of presenter's low communication skills even if the methods s/he applied worked well. Second, some of them touched upon the difficulty of finding strongest and weakest points of the microteaching performances to write on the form. There were some other challenges, such as corruption of observation due to form filling (two participants), not seeing what the peers in the role of pupils did during learning activities (one participant), getting bored if the learning activity is silent and long (one participant), and the forms' perceived linear template leading to a limitation in creativity (one participant).

In a study on peer assessment conducted by (Bağcı Kılıç (2005), the majority of students were positive toward both self and peer assessment. Furthermore, most of the students (75.4%) were positive toward peer assessment. The students who were negative toward self and peer assessment most frequently stated that they could not be objective.

5.2.4 Being Assessed with the Microteaching Assessment Form

As regards to advantages of being assessed by academic staff and peers, the participants pointed out that being assessed with an assessment form ultimately improved their teaching skills. Several participants stated that the assessments that came with the MAF were fair to a degree of 90%. As to the reliability of assessment by the peers stated in the literature, Topping (1998) concluded that peer assessment of professional skills shows adequate reliability. Peer assessment generally shows overall outcomes at least equivalent to teacher assessment. (Topping, 1998) Besides, students found to be reliable assessors of their peers' performances when using more than one peer as raters (Magin & Helmore, 2001).

Furthermore, it appears that these forms provided self-evaluation for microteaching performers by means of analytic and detailed feedback on their performance; because almost half of the participants underlined that the feedback about their weak points gave them the opportunity to be aware of them. Additionally, according to several participants, feedback on their strengths positively influenced their self-confidence in teaching. Besides, some of them stated that they took the MAF into consideration while preparing their microteaching.

When the feedback from the instructor and peers was compared by the participants, it was seen that all the participants gave more value to the feedback from the academic staff because it was more guiding, detailed, useful and effective. On the other hand, almost half of the participants thought that peer feedback made also some contributions. It appears that peers bring their various viewpoints to assessment and feedback, in terms of enhancing feedback related to strengths and weaknesses. The feedback from the academic staff and peers overlapped if they were given by peers whose critical thinking ability was high and who filled in the form studiously. It was also recognized that the feedbacks from these two groups also overlap on salient aspects in the microteaching performance. It was emphasized that feedback from these two groups could be complementary in terms of pointing out deficiencies although the degree of corrective feedback existence was different.

The results reveal that the participants highly appreciated to receive feedback about their microteaching performance not only from the instructor, but also from the teaching assistants and their peers. Similarly, Woolhouse (1999) indicated that 62% of the students held positive views of the experience and found peer assessment useful, valuable, and beneficial. Receiving feedback from various resources gave them the opportunity to review their own performance from different viewpoints. This was also supported by the literature (I'Anson, Rodrigues & Wilson, 2003). They advised that opportunities for multiple views in other situations may influence the future development of preservice teachers' repertoires. They also claimed that assignments, peer, teacher fellow and tutor feedback and personal review can help the individual triangulate their intuitive and analytical thinking about their

practice and may ultimately promote the process of reflection. P'Anson, Rodrigues and Wilson (2003) inferred that microteaching provides preservice teachers with an opportunity to get advice from other students, teachers, teacher fellows, and eventually themselves, through a critical process of personal as well as social reconstruction.

Özoğul, Olina and Sullivan (2008) stated that formative feedback from self, peer and instructor improved their subjects' lesson plans significantly from draft version to final version, with the teacher-evaluation group showing significantly greater improvement and writing significantly better final lesson plans than each of the other two groups. In addition, all three teachers reported that both self- and peer-evaluation enabled students to gain a better understanding of the evaluation rubric and to eliminate the major errors in their lesson plans. The instructors in their study emphasized that peer evaluators felt accountable and tried hard to provide good feedback. Akıllı (2007) also deduced that self and peer evaluation play an important role in training more qualified teachers and in improving the competencies related to teaching profession, such as using teaching methods and techniques, their teaching skills and in-class activities, and communication skills.

However, contradictions amongst the peers' feedbacks were an issue which was stressed by several participants. This contradiction could be accepted as richness if it was due to different viewpoints, or it could be accepted as problem of misconception by the assessors who missed parts of microteaching session and filled in the form inattentively. The latter is the more frequently stated assumption for this issue. The interview results indicated that the contradiction in feedback was also because of the relations among the peers. The close friends overassess the performer. Similarly, Bağcı Kılıç (2005) inferred that Turkish students do not objectively assess their peers' performance because of emotional interference due to friendship (Bağcı Kılıç, 2005). Nevertheless, the assessments were found fair at the rate of 90% by the participants in the current study. In the literature, peer scores have been seen as considerably higher than the instructor scores; nevertheless, they have been significantly correlated with the instructor scores (Bağcı Kılıç & Çakan, 2007).

On the other hand, the participants suffered from peers not filling in the MAF as intended. The results indicated that there were misunderstandings about the rating part and the comments part and back of the MAF. For the rating part, firstly, the preservice teachers tended to expect from the performer to apply all of the items or criteria on the form sequentially, in the entrance, core and closure parts. For example, they expected the teacher to recall prior knowledge at the beginning of the microteaching session, while in some cases it was better to remind pupils of the prerequisite knowledge.

Secondly, preservice teachers did not use the “not applicable” option, and they tended to assess the performer for all the items in this part although some items were not always applicable in all microteaching episodes. For instance, if the microteaching performer teaches first grade pupils the first objective of the first computer course (as S47 did), he or she cannot remind pupils of what has been learned in previous lesson, or of any prior knowledge. In such a case it would be appropriate to select “not applicable” rather than trying to assess the session for reminding previous knowledge.

Thirdly, preservice teachers seemed to expect from the performer to emphasize by words which criteria he or she was fulfilling during the microteaching episode. For example, if a performer made an informal assessment, he/she was generally rated low in the assessment, though instructor frequently emphasized that the assessment could be formal or informal. The students sometimes could not recognize informal assessments in the microteaching episodes. As for the comments part and back of the MAF, which were designed to be used for giving corrective feedback, it was seen that some preservice teachers did not fill in the comments part (provided to the right of the rating part), and did not explain their reasons for selection of the strong and weak points on the back of the MAF. All of them filled in the rating part but some of them wrote feedback in the comments part. In fact, the comments part was perceived as optional by the participants, while filling the ratings part and specifying two strongest and two weakest points at the back of the MAF were perceived as a must. The assessed microteaching performers were therefore disappointed when they did not find reasons or explanations about low rated criteria in the rating part. The literature also shows that peer feedback can be problematic in terms of quality. Preservice teachers tend to overassess their microteaching performances on physical appearance or mannerisms (Amobi, 2005; Brent & Thompson, 1996; Wilkinson, 1996), avoiding confrontation with the strengths and weaknesses of their microteaching performances. The preservice teachers’ call for more corrective and detailed feedback was supported by Benton-Kupper (2001). She stresses the necessity of detailed rather than general or broad feedback. Detailed feedback is defined by her as supportive and containing constructive tips and suggestions that could be used to improve preservice teachers’ teaching.

Within the grading policy, to increase the participation into peer assessment, the preservice teachers were given extra points for each form they filled (1.25/100), besides being given point for participation. This strategy increased their attendance in the course and participation in peer assessments. However, since the quality of the feedback on the forms was not in the scope of this study, some of them did not fill in the forms as the researcher and microteaching performers expected. Having preservice teachers assess their peers and

encouraging them to provide detailed feedback to their peers through the MAF really worked for those who had positive attitudes toward the teaching profession and who were studious and had positive attitudes toward the course. However, this strategy did not provide detailed, critical and insightful feedback from those students who had low motivation to improve their teaching skills and who did not come eagerly to the lessons since they did not want to be teachers. Such students seemed to give low-quality feedback by only restating the criteria in the rating part as good or bad performances for those criteria.

To increase the rate of corrective and high quality feedback from peers, some strategies could be applied. To prevent low quality and vague feedback from the preservice teachers who have low-motivation towards attending the course and do not want to be teachers, the quality of feedback could be taken into consideration in giving points for each form filled. This would also motivate the others to give more studious feedback. Another strategy could be to ask students give evidence-based feedback, as Subramaniam (2006) did in his microteaching evaluation form. This was suggested also by one participant: “The friends making assessments had better give feedback by writing more specific explanations in the comments, critics and suggestions, for instance, ‘She motivated students by saying the following sentence: ‘...’.” (S44). In order to improve the quality of peer assessments, some participants also made suggestions such as taking precautions to minimize unfair assessment (four participants), making preservice teachers aware of the necessity of corrective feedback (four participants) and demanding peers to explain the reasons for their ratings in the comments part (two participants). The researcher, had explained how to use the MPG and how to fill in the MAF in a two-hour lecture, but it appears that this was still not sufficient to ensure that all the preservice teachers to give corrective feedback. It seems that the preservice teachers need more interactive training on how to assess their peers and how to give corrective feedback with the MAF. Instructors who will use such forms for peer assessment should demonstrate how to use the form. For example, they can assess a sample videoed microteaching session and give corrective feedback with the MAF, as one of the participants also suggested (S24), and they should provide practice with the MAF before the microteaching sessions, if possible. Training students about how to use an evaluation instrument was also suggested by Özogul, Olina & Sullivan (2008). This would increase the quality and quantity of corrective feedback to be given by preservice teachers to their classmates’ teaching.

There were suggestions about how to improve the MAF. Providing a space in which to write the general properties of the microteaching episode such as learning outcome, and grade (one fifth of students), and not specifying the number of strongest and weakest points to be identified by the assessors (one fifth of participants), were the most frequently

proposed changes. Furthermore, the following suggestions were found meaningful by the researcher: making the statements in the core of the lesson part to more clear (two participants), restating items so as to focus on the teacher, not the learner (one participant), and adding leading questions in the comments part to facilitate giving corrective feedback (one participant). The revised form of the MAF based on the preservice teachers' suggestions and the researcher's experience is given in Appendix O, for teacher educators who would like to use it in microteaching assessments.

When students were asked about their preferences of feedback medium for their microteaching performance, the majority of them preferred written feedback and regarded it as a must. This has some reasons that were indicated by the participants. First of all, written feedback is retentive and usable in the self-reflection assignment. Furthermore, it provides precise information and enhances comprehension. Moreover, it is more objective, anonymous and able to express things that they cannot be said. Besides, it is most effective for a big audience/group. However, one-fifth of the participants suggested that 5-10 minutes of oral feedback could also be given in the form of discussion/comments after the microteaching session. Two participants also indicated the need for discussing critical points stated in the assessment forms in the following class hour or recitation hour. Yet almost half of the participants found possible drawbacks of oral feedback in the form of discussion, such as a discussion being not detailed but general, giving superficial feedback, the possibility of long lasting and unsolvable discussions, not speaking completely frankly and a lack of anonymity. More than one third of the participants particularly stated that the peer assessment should be continued, but they also underlined that it is better if peer assessments are not taken into account in the grading policy.

Discussion of the microteaching performance in the classroom was not taken placed in the microteaching model used in the present study, and all the feedback to the performer were given through the MAF, in the written form. Although almost all the participants highly valued the written feedback on the MAF, these results reveal the preservice teachers need for oral discussion and critique of the microteaching performance in a nonthreatening way.

5.2.5 Self-reflection Assignment

It was understood that most of the participants valued the self-reflection assignment, because several participants particularly emphasized that such an assignment was a necessity to recap what they experienced and to come up with a conclusion regarding their microteaching (five participants). The guide for doing this assignment was generally perceived as beneficial, since it led to write detailed and insightful writing in an easier way in a shorter time.

Before writing the essay, in order to help the preservice teachers to remind how they actually performed microteaching, and the assessments and feedback on the assessment forms, they were asked to observe their own microteaching performance from video, and to analyze the assessment and feedback in the MAFs. A majority of the participants found it useful to observe their own microteaching from video, especially to put themselves in the assessor's shoes, and to recognize their weaknesses and strengths. Some participants also stated that they checked whether the assessment and feedback was fair or not by observing their own microteaching. Only a few participants argued that observing oneself on a video makes no contribution to self-assessment of the microteaching performance.

Regarding analyzing and responding to feedback, most of the participants found this more important than analyzing the rating part, because, they could decide on their strong and weak points deeply understood these strong and weak points by means of explanations of these points in the forms. Responding to the feedback was also valued by a majority of the participants, since they could defend themselves and made self-criticism. Only a few participants found this process unnecessary due to that just reading the feedbacks would have the same effect, and peers would not hear their responses. Another participant suggested that only feedback that shows weaknesses should be focused on and responded to.

For the use of a theoretical framework in to connect theory with practice, the majority of participants found it useful and used it; because it is a guide to theories they should consider, it reminded basic features of the theories of instruction. However, a few participants said that they felt challenged in relating their strong and weak points to theories (3 participants). Two of them claimed that they did not understand how to relate theory to their practice in the self-reflection essay. In the current study, although the self-reflection assignment guide was sent to the students at the beginning of the microteaching activities of the course, and how to do a self-reflection assignment was explained in detail in the classroom, the use of the theoretical framework was not demonstrated. Thus, it seems that some students got confused about how to use this framework in relating theory to practice. In order to make this point clearer, as one of the interviewees (S28) suggested, the theoretical framework could be introduced and how to relate theory to practice in such a framework could be demonstrated, before the microteachings were performed.

These findings are corroborated by Huang (2001), who points to the need for a concrete conceptual guideline for directing reflection, because reflection on teaching practice requires broader issues of purposes, goals, values and constraints. In fact, the literature suggests that students benefit more from guided and structured reflection in developing self-reflective critical thinking (Freese, 1999; Huang, 2001; Langer, 2002; Rodriguez et al., 1998).

Using microteaching as a tool to improve reflective practice is a current trend in the literature. I'Anson, Rodrigues and Wilson (2003), Wilson and I'Anson (2006), Şanal Erginel (2006), Sarvan Gencer (2008) and Köksal and Demirel (2008) are the most recent ones. They generally investigate the contributions of various techniques to improve reflective thinking and preservice teachers' reflective practice in "teaching practice" courses. It was seen that microteaching was used as a means to improve reflective thinking in all of these studies. Wilson and I'Anson (2006) stated that preservice teachers found to write self-evaluation assignments were helpful in reconsidering their teaching and the connection between theory and practice. Wilson and I'Anson (2006) concluded that this practicum model could lead to a productive reframing of both theory and practice.

Most of the participants in the current study also appreciated reviewing of their microteaching video. The use of videotaped lessons in the process of reflection for the purpose of self-evaluation of teaching is a well-accepted method of learning about teaching in the literature. For example, Huang's (2001) study is an investigation of preservice teachers' reflective practice through their self analysis of video-taped microteaching performances for the course of teaching techniques. Forty-five secondary teacher education program students were required to keep journals to reflect on their teaching after presenting microteaching lessons in a way of including strengths, weaknesses, and improvements. It was generally valued by the preservice teachers as offering an opportunity to review the lesson and discuss students' reaction and feedback.

5.3 The Effects of the Cognitive Tools and Microteaching on Field Teaching

When the field teaching plans were analyzed, it was seen that 67% of the interviewees (N=12) and 50% of all the participants (N=42) used the MPG or its condensed form to prepare their field teaching plans. Although there was not an obligation to use this guide, and they were free to use any template for planning their field teaching, a many of them preferred to use the MPG. Furthermore, 25% of the participants who did not use the MPG were attending the same private school, and they had to use the plan template of that school. In fact, all of them used the planning format of that school. If that school would have no a lesson plan template for computer courses, some of them most probably would also use the MPG. Even, one of them (S44) prepared her field teaching plan according to two formats: one in the school's format, and the other according to MPG.

The considerable rate of using MPG in field teaching planning can be interpreted in two different ways. First, the preservice teachers found the MPG useful in developing their lesson plans. In fact, it was developed based on the major template given in the computer education curriculum, thus it is already congruent with the curriculum. Second, they were

already familiar to this template since they had used it in microteaching planning experience under tutoring by the instructor. Furthermore, they had observed and assessed their peers' microteaching sessions which had been prepared according to the MPG. In brief, since they had mastered the components of the MPG throughout the microteaching activities, majority of them preferred this guide in planning their field teaching.

The interviews results also supported this notion. The interviewees stated that the practice with the cognitive tools for instructional planning (IPSRT and CPSRT) and the microteaching planning process with tutoring enabled them to learn lesson planning process and to internalize this as well as to shorten the planning time. These contributions came especially with tutoring, which encouraged preservice teachers to detail the plans and think and reflect on the components of planning. Indeed, the participants often articulated that after making this much planning under close supervision of the researcher and using the IPSRT, CPSRT and the MPG, they easily planned their lessons for field teaching in a short time. The ones who had not planned their field teaching also stated that they could plan lessons in a short time since they learned the planning process.

As for the field teaching performances, each preservice teacher's performance was assessed by a teaching assistant using the MAF. Although the six teaching assistants, who would do these assessments, were instructed on how to fill in the MPG, each of them had different styles in filling in it, especially in filling the rating part. Thus, only the feedbacks and comments in the comments part and back of the form were analyzed to see the effects of microteaching on students' field teaching performance. When the feedback and comments were considered, the participants (N=12) seemed to have received more praise than criticism in the introduction to the lesson, motivating students, learning activities, teaching strategies and methods, selection and use of learning materials, practice and feedback, summarizing the lesson, communication skills and time management. Three participants were often criticized, while the others rarely got negative comments. Considering the number of praises and criticisms, the majority of the participants, then, provided a successful performance in their field teaching. Furthermore, it was notable that only two participants were claimed to have shown high anxiety in field teaching. From the interviewees, two of them who conducted their field teaching commented that they did not repeat the mistakes that they had made in microteaching, and they performed better in field teaching. Based on the interview results, lessening anxiety of teaching and increasing self-confidence in teaching could also be considered positive impacts of microteaching on field teaching.

In the interviews, the researcher observed that preservice teachers found "a safe place" to practice what they had learned not only in this course, but also in all courses in the CEIT program related to pedagogical content knowledge, before teaching authentic pupils.

These courses concern general teaching methods, teaching and learning theories, measurement and evaluation, and classroom management. This appears to positively influence all the participants to value the process they went through in this course, as well.

These findings were supported by the literature (Copeland, 1975; Madike, 1980; Simbo, 1989). Madike (1980) indicated that pupils taught by student teachers who had done microteaching before were more successful in mathematics than those who were taught by student teachers who had been educated in other ways. Simbo (1989) also revealed that while there was no significant difference between the performances of the groups in the pre-microteaching observation scores, there was a significant difference between them in the post-microteaching observation scores, in favor of the microteaching group. This indicates that microteaching is more effective in improving teaching performance than traditional teaching practice. In addition, Copeland (1975) deduced that microteaching has a potential to increase the self-confidence of preservice teachers regarding teaching and provides a context for increasing self-awareness of personal habits and more insight into one's teaching, though its impact on teaching skills were not found to be significant in his study.

Finally, it would be meaningful to restate the value of microteaching, although its aims, tools, methods and focus have changed from time to time and study to study. Francis (1997) explains its lasting value, considering her journey of using microteaching over time. She stated that preservice teachers enter schools of education with some beliefs regarding teaching and learning, and teacher educators admit this. According to her, teacher educators should reconceptualize the concept of teaching by considering this fact. Preservice teachers have the questions of "what works", "how will I do?". And the reason for focusing on such questions is their continuing anxieties (Francis, 1997). Teacher educators should work on these anxieties. According to her, the tensions between theorizing and skills necessary for teaching are substantial and unavoidable. If teacher educators work only at a theoretical/critical level, then they face alienating students who have real concerns about survival in classroom where questions of management prevail. If the teacher educators move more to a technical approach in which skills are predetermined and seen to be universal, they commit teachers with very different personal theories to a single 'best way' which cannot work in the multifaceted, complex context of teaching. She proposed that microteaching should not focus largely on a skill universally applied for a normalized class. As Francis noted, a new concept of microteaching should be adopted, not only enabling the development of the skill-based tools link to preservice teachers' concerns and needs, but also accepts the teachers as active agents in constructing and confronting their own professional ways of knowing.

CHAPTER 6

CONCLUSIONS

In the light of current study findings and related literature, the following conclusions are drawn about the contributions and challenges involved in using the cognitive tools for instructional planning and microteaching model in teaching method courses in STEs.

Conclusions about using the cognitive tools for instructional planning:

1. The findings showed that when preservice teachers make lesson plans by using these tools, work on sample plans, and are tutored by the instructor in this process, they felt more motivated to planning and really engaged in instructional planning process. In this sense, preservice teachers' instructional planning awareness, and skills, as well as self-efficacy and motivation regarding instructional planning can be developed and improved by using these cognitive tools for instructional planning (IPSRT and CPSRT) with tutoring by the instructor during the planning process.
2. Both tools should be introduced to preservice teachers. Using the IPSRT at first and CPSRT in second order was found to be better in improving planning performance in terms of following these tools through planning, self-efficacy and motivation regarding instructional planning. Thus, the IPSRT should be introduced at first.
3. Provided that tutoring is done during the introduction and initial use of the tools, preservice teachers use or follow these tools to a greater extent. In this way, the preservice teachers can master the components of lesson planning in an instructivist and constructivist approaches easily through both tools. Furthermore, considering the eclectic approach to the curriculum (MONE, 2006), both tools should be introduced to the preservice teachers. In this way, they can also become aware of how to use instructivist and constructivist theoretical approaches in planning. In addition, both tools can be used together in making a lesson plan to ensure the eclectic approach in planning. By doing so, they can integrate basic principles of both theoretical approaches into lesson plans for addressing the various needs of pupils.
4. When preservice teachers made lesson plan as an in-class activity, they were provided with the cognitive tools for instructional planning with tutoring by the instructor. Due to

these treatments, preservice teachers gave more attention to planning procedure. Furthermore, they really engaged in planning and they faced with the challenges of instructional planning in terms of finding solutions to instructional problems. In other words, they take the planning seriously, and experience the process of planning in real sense by using cognitive tools and being tutored by the instructor. The results revealed that tutoring played an important role in this. Then, when the tools are introduced, tutoring should also be provided about using these tools in order to increase preservice teachers' self-confidence in planning.

5. Preservice teachers need sample plans, as models, made on the basis of the tools (IPSRT and CPSRT) in order to really understand the use of these tools. Thus, if such tools will be used, then model plans prepared with them should also be provided. Furthermore, sample plans in accord with the both tools should be developed together with preservice teachers in the class hour; otherwise, at least the sample plans developed beforehand should be discussed with preservice teachers in the class hour by giving explanations.
6. The cognitive tools for instructional planning should also be used in other fields of teacher training programs in STEs.

The conclusions regarding the microteaching model are as follow:

1. The preservice teachers should be supported with tutoring in their microteaching planning process, especially initial phases of planning such as selecting topic, teaching strategies, methods and techniques. This tutoring should be provided in the form of face-to-face planning conferences which involves in a nonthreatening dialog between the instructor and preservice teacher to eliminate ambiguities and concerns in preservice teachers' minds regarding microteaching planning and performance. In these sessions, oral feedback should also be provided for draft microteaching plan. Before the microteaching session, the preservice teacher should also be given a written feedback on his final microteaching plan.
2. It was observed that the preservice teachers who firstly conduct microteaching had difficulties in framing the task in their minds. Just telling them what and how to do it was inadequate. In fact, some participants demanded more orientation towards teaching before microteaching sessions. Then, the orienting preservice teachers towards the microteaching activities should be well-planned. For such an orientation, firstly, any microteaching model should begin with observing and assessing a model/sample microteaching –a sample video could be assessed. In this way, the preservice teachers can understand the expectations of the instructor and be less anxious in their microteaching sessions. Secondly, besides the instructor from the university, teachers in

the field at public schools could assign as co-instructors of teaching methods courses. By doing so, they can share their experiences with the preservice teachers, indicate the practical issues of instructional planning and teaching in their fields, they can even tutor preservice teachers in instructional planning process and microteaching process. They should at least involve in the teaching methods courses as guest speakers on particular aspects of planning instruction and teaching.

3. For the microteaching model implemented in the current study, the second important challenge was teaching inauthentic pupils. When the learners are not authentic, then no authentic teaching and learning occurs, but rather, a role playing was done by the microteaching performers and the students in the role of school pupils. Then, they cannot perform their real teaching performance, and cannot transform teaching, learning and developmental theories into practice in real sense. There could be two solutions to such problems. One is establishing practice schools near to each STE by MONE, and conducting microteaching activities for real pupils in that school. The other is conducting microteaching for peers in the role of students, but extending such microteaching models with real pupils in the first year of the teaching by MONE.
4. The authenticity and meaningfulness of microteaching decreases when inauthentic pupils are employed. Nevertheless, teaching learning outcomes from a real curriculum and thus, observing and assessing lessons from the real curriculum increase its authenticity and meaningfulness.
5. In assessing microteaching performance, the written feedback should be given more weight than the oral feedback. However, in the next class hour or recitation hour, a discussion about the results of analysis of written feedback would enhance their learning and gained insights from the microteaching experience. Furthermore, such a discussion would give a chance to the performers to defend themselves and response to the feedback he/she was given.
6. If peer assessments will be involved in the microteaching process, it is better to use an assessment form like the revised MAF, given in Appendix O, to establish a general framework and communicate the expectations from the assessment.
7. The current study showed that preservice teacher both expects a fair assessment from their peers but they tend to give higher points than the performer deserves in the quantitative assessment (rating part). Nevertheless, they are more honest and relaxed when giving corrective feedbacks and writing their comments. In fact, they explain their real thoughts in their qualitative feedback and comments. Therefore, when peer assessment is used in microteaching, it could be better to give more weight and emphasis to qualitative assessment and corrective feedbacks rather than solely relying on

quantitative ratings so that both the assessor and the one being assessed gain from the assessment process. Before the microteaching sessions, the students should be trained on how to give corrective feedback over the form.

- 8.** The preservice teachers should be given extra points for each form to assess their peers. However, the quality of feedback should be checked and taken into consideration in giving this extra point to them. By doing so, they may become more encouraged and motivated to give evidence-based corrective feedback about their peers' performance.
- 9.** If preservice teachers are expected to combine their strengths and weaknesses in practice with a theory after microteaching performance, the theoretical framework had better to be given to the preservice teachers at the beginning of the microteaching activities so that they can take this into consideration the theory in their microteaching session.
- 10.** One instructor could not allocate his/her time to implement such a microteaching model oneself, if the class is too crowded. Therefore teaching assistants should be assigned, one per 10 students for a plausible workload for the method course. However, teaching assistants should be trained in how to conduct one-to-one tutoring for preservice teachers' preparing microteaching plans and in how to assess microteaching performance. Such training should be supported by some written guidelines and forms, templates as references or conceptual framework when needed. After training, the assistants should sign a contract at the beginning of the semester, which clearly declares their roles in this course, ways of tutoring, minimum amount and type of corrective feedback to be given for each preservice teacher for planning and assessment of microteaching, students' roles and responsibilities, and timeline of the course. The instructor should monitor the assistants' works for the course. It should be noted that the interaction between the tutor and the preservice teachers has an important contribution to the improvements in the preservice teachers' performance in instructional planning and teaching skills in the present study. The reciprocal human effort accelerated improvement in these areas and seems to make improved skills and attitudes more retentive. Otherwise, just the cognitive tools and the microteaching activities may not yield such improvements.
- 11.** If possible, preservice teachers could be divided into a number of sections so that each student can conduct two microteaching episodes in a term.
- 12.** The model used in the present study could be applied in other fields of teacher training programs in STEs.
- 13.** Such microteaching models should also be applied in the first year of novice teachers at school. MONE should make necessary arrangements at schools for these applications in terms of infrastructure, equipment and human resources.

CHAPTER 7

RECOMMENDATIONS FOR FURTHER RESEARCH

In the light of current study findings and related literature, the following recommendations are made for further research regarding the potentials of the cognitive tools for instructional planning and microteaching in improving preservice teachers' instructional planning and teaching skills.

1. Several students noted that the current practice at school is remote from such planning and teaching. The applicability of such plans was already a question mark in one of the participants' mind. The current implementations at schools need to be investigated. Qualitative studies should be conducted to investigate "what actually happens in the computer classes at school", pertaining to planning and teaching practices.
2. It should be investigated "whether lesson plans prepared with the cognitive tools and the microteaching planning guide are applicable in real classrooms or not". The impact of these plans could be examined through computer teachers' using them in real classrooms at schools.
3. A research program for the method courses in STEs should be conducted to examine and redesign them in terms of their relationships and continuity, considering planning and microteaching activities.
4. The impact of using "sample microteaching videos" in Teaching Methods I course on relating theory with practice should be examined.
5. Parajes (1996) states that self-efficacy is primarily a domain-specific construct (Parajes, 1996, as cited in Schunk, 2000), it refers to perceptions of specific capabilities (e.g. drawing inferences from text, solving fraction problems, planning lessons in traditional approach), not the same as self-concept, which is one's general self-perception that includes efficacy in different areas (Schunk, 2000). In this sense, considering the complexity of instructional planning as a construct, rather using one-item test, the self-efficacy regarding instructional planning has better be measured through some specific items that ask about students' self-efficacy regarding each component of instructional plan (such as writing instructional objectives, motivating students, designing assessment strategy, etc.).

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APPENDICES

APPENDIX A

DEMOGRAPHICS QUESTIONNAIRE

ÖĞRETİM PLANLAMASINA YÖNELİK TUTUM VE MOTİVASYON ANKETİ

Değerli öğrencimiz,

Bu çalışma sizlerin öğretim planlamasına yönelik tutum ve motivasyonunuzu ölçmeye yöneliktir. Sonuçlar öğrenci değerlendirmesinde KULLANILMAYACAK, öğrencilerin kimlik bilgileri gizli tutularak sadece araştırma amaçlı kullanılacaktır. Seçmeli sorularda sizin için en geçerli olan şıkkın solundaki kutuyu "X" harfi ile işaretleyiniz. Açık uçlu sorularda sizin için doğru olan cevabı sağlanan boşluklara yazınız.

Katkınız için teşekkür ederiz.

Hamide Şahinkaya

Doç. Dr. Soner Yıldırım

A. Kişisel Bilgiler

1. Öğrenci numaranız:	_____
2. Cinsiyet:	<input type="checkbox"/> Bay <input type="checkbox"/> Bayan
3. Yaşınız:	_____
4. Kaçınıcı sınıftasınız?	<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
5. GPA:	<input type="checkbox"/> 2.0'dan az <input type="checkbox"/> 2.0 ile 2.49 arasında <input type="checkbox"/> 2.5 ile 2.99 arasında <input type="checkbox"/> 3.0 ile 3.49 arasında <input type="checkbox"/> 3.5 ve üzerinde
6. Öğrencilik durumunuz:	<input type="checkbox"/> Sacede BÖTE programına kayıtlıyım. <input type="checkbox"/> BÖTE ile birlikte bir başka bölümde yandal programına devam ediyorum. <input type="checkbox"/> BÖTE ile birklikte bir başka bölümde çift anadal programına devam ediyorum.
7. Mezun olduğunuz lise ve bölüm:	
Lise:	_____
Bölüm:	_____

B. BÖTE ve Öğretmenlik Mesleğine Yönelik Görüşler

1. ÖSS tercihlerinizde Bilgisayar ve Öğretim Teknolojileri Eğitimi bölümünü daha çok hangi amaçla seçtiniz?
 Öğretmen olmak için
 Bilgisayar yazılım ve donanımında uzmanlaşmak için
 Puanım bu bölüme yettiği için
 Diğer: _____

2. BÖTE bölümünde birinci sınıfa başladığınızda öğretmenlik mesleğine ilişkin tutumunuz ne idi?
 Olumlu Olumsuz Nötr
Neden/Nedenleri: _____

3. BÖTE bölümü öğrenciliğiniz sürecinde öğretmenlik mesleğine bakış açınızda herhangi bir değişim oldu mu?
 Olumlu yönde bir değişim
 Olumsuz yönde bir değişim
 Herhangi bir değişim olmadı
Nedeni/nedenleri: _____

4. Ailenizde (birinci derece yakınlarınız içinde) öğretmen olan var mı? Evet Hayır

5. BÖTE bölümünden mezun olduğunuzda öğretmenlik yapmayı düşünüyor musunuz?
 Evet
 Hayır (Cevabınız hayır ise aşağıdaki seçeneklerden size en uygun olanı seçiniz:)
 Yüksek lisans yapmak
 Bilişim sektöründe eğitim alanında (eğitim planlama, geliştirme vb) çalışmak
 Bilişim sektöründe -eğitim dışı- yazılım/donanım alanlarında çalışmak
 Diğer: _____

C. Öğretim Planlamasına (ders planı) Yönelik Tutum/Motivasyon

1. Lütfen, “öğretim planlamasının” (ders planı) size çağrıştırdığı ilk iki kelimeyi/ kelime grubunu yazınız:
(Write two adjectives to describe what you think about instructional planning)

2. Ders planı yapabileceğinizden ne kadar eminsiniz? 10’den 100’e kadar bir puan belirleyiniz. (How sure are you that you can write a lesson plan?)
_____ (Hiç emin değilim) 10.....100 (Çok eminim)

3. Bir öğretmen adayı olarak ders planı yapmak ne kadar önemlidir?
(How important is writing a lesson plan to you as a future professional?)
 (1) Hiç önemli değil (2) Biraz önemli (3) Önemli
 (4) Çok önemli (5) Son derece önemli

4. Öğretim planlamasına yönelik eklemek istediğiniz düşünceleriniz:

APPENDIX B

COGNITIVE TOOLS FOR INSTRUCTIONAL PLANNING

B1. INSTRUCTIONAL PLANNING SELF-REFLECTIVE TOOL (IPSRT)

Instructions:

After you write a section of your lesson plan, review each question in the appropriate section below. Check either the "yes" or "no" box as you reflect on your lesson plan. If you answer "no" for any statement, that is an indication that you should modify your lesson plan accordingly.

INSTRUCTIONAL GOAL:

- Is the statement relatively general and broad stating what the learner should achieve?
 yes no
- Does it state WHAT you want the learner to achieve, not HOW you are going to do it?
 yes no

OBJECTIVE(s):

- *Does each objective derive directly and logically from one of the instructional goals?
 yes no
- Are all four of the following components present for each objective? yes no
 1. Audience
 - Does this component state who will be doing the performance? yes no
 - Is it stated from the LEARNER's perspective, NOT the INSTRUCTOR's perspective? yes no
 2. Behavior
 - Is the behavior specific and explicit? yes no
 - Is the behavior measurable and observable? yes no
 - Does the behavior state what the learner will do at the END of instruction, not DURING instruction? yes no
 - Is there one active verb? yes no
 3. Condition
 - Is the context for the behavior specified? yes no
 - Does this component clarify the conditions under which the performance will be done? yes no
 4. Degree
 - Does this component clarify how well/to what extent the performance must be done? yes no
 - Is it specific and measurable? yes no

MATERIALS / PREPARATION:

- Is everything included here that is needed for the instructional activities (in the procedure section)?
 yes no

LEVEL AND LEARNER CHARACTERISTICS:

- Are all relevant characteristics of the students included (e.g., general characteristics, ethnicity, gender, grade level, preferences or learning styles, perceptual preferences, group size)? yes no
- Are your objectives appropriate for these **particular** learners?
 yes no

PROCEDURE:

Motivating students:

- Does this activity motivate these **particular** learners? yes no
- Do you gain the learners' attention? yes no

Informing students of objectives:

- Do you inform the students of what it is that they are going to be able to do when they finish the instructional process? yes no

Helping students recall prerequisites:

- Have you reminded students of any relevant prior knowledge that is related to this new topic? yes no

Presenting Info and Examples:

- Have you provided all necessary information about the subject in order for students to eventually perform the objectives? yes no
- Have you provided examples so that the students can see how they can use the information? yes no

Provide Practice and Feedback:

- Have you provided practice opportunities that are directly related to the skills, knowledge, and attitudes reflected in the objectives? yes no
- Have you provided feedback to the students? yes no

Summarizing the lesson:

- Have you summarized the lesson to bring closure and help reinforce the skills and knowledge that the students have just acquired? yes no

ASSESSMENT:

- Does your assessment clearly align with your objectives?
 yes no
- Do the active verbs of the test items MATCH the active verbs of the objectives?
 yes no

OVERALL:

- *Is each objective effectively taught and assessed? yes no
- Does the lesson flow logically and easily through each section from goals to assessment?
 yes no
- Is there an instructional purpose for each activity (in procedure section) ?
 yes no
- Are the materials appropriate for the learners? yes no
- Have you included all the materials necessary for the activities (in procedure section)?
 yes no
- Is the instructional media that you chose appropriate for each activity (in procedure section)?
 yes no
- Do you think your assessment items reflect what you think students should have learned?
 yes no

B2. CONSTRUCTIVIST PLANNING SELF-REFLECTIVE TOOL (CPSRT)

Instructions: This learning support plan is divided into three phases: 1) before instruction; 2) during instruction; and 3) after instruction. It is recommended that you complete each phase sequentially. Following completion of each phase, check either the "yes" or "no" boxes as you reflect on your learning support plan. If the "no" box is present and you answer "no" for any statement, that is an indication that you should modify your learning support plan accordingly.

PHASE	INSTRUCTIONAL PURPOSE
BEFORE	<ul style="list-style-type: none"> • Do the learning outcomes describe one or more of the following for the learner: <ul style="list-style-type: none"> • Reasoning skills? <input type="checkbox"/> yes • Critical thinking? <input type="checkbox"/> yes • Retention? <input type="checkbox"/> yes • Understanding of multiple perspectives? <input type="checkbox"/> yes • Cognitive flexibility? <input type="checkbox"/> yes • Self-regulation? <input type="checkbox"/> yes • Reflection and/or self-awareness? <input type="checkbox"/> yes • Application? <input type="checkbox"/> yes • Are learning outcomes directed toward <u>useful personal knowledge</u>? <input type="checkbox"/>yes <input type="checkbox"/>no
	<p>DEFINE LEARNING ACTIVITY(IES):</p> <p style="text-align: center;"><u>REQUIRED CHARACTERISTICS</u></p> <ul style="list-style-type: none"> • Do the activity(ies) <ul style="list-style-type: none"> • fulfill the instructional purpose? <input type="checkbox"/> yes <input type="checkbox"/>no • require the student to be cognitively active? <input type="checkbox"/> yes <input type="checkbox"/>no • focus more on the learning <u>process</u> rather than specific knowledge? <input type="checkbox"/> yes <input type="checkbox"/>no • promote the personal interest of your students? <input type="checkbox"/> yes <input type="checkbox"/>no • integrate information with students' prior knowledge? <input type="checkbox"/> yes <input type="checkbox"/>no • Are the activity(ies): <ul style="list-style-type: none"> • relevant <input type="checkbox"/> yes <input type="checkbox"/>no • meaningful <input type="checkbox"/> yes <input type="checkbox"/>no • and authentic <input type="checkbox"/> yes <input type="checkbox"/>no <p style="text-align: center;"><u>DESIRABLE CHARACTERISTICS</u></p> <p>Are the activity(ies):</p> <ul style="list-style-type: none"> • ill-structured tasks? <input type="checkbox"/> yes • complex? <input type="checkbox"/> yes • multi-disciplinary? <input type="checkbox"/> yes • including "What-If" questions? <input type="checkbox"/> yes • encouraging multiple perspectives? <input type="checkbox"/> yes • involving cognitive conflict? <input type="checkbox"/> yes • including discussion and/or collaboration? <input type="checkbox"/> yes • defined in part by the learner? <input type="checkbox"/> yes <p>Does the social environment for the activities:</p> <ul style="list-style-type: none"> • involve social negotiation and communication? <input type="checkbox"/> yes • involve the sharing of information and/or culture? <input type="checkbox"/> yes

QZ-RCD	<p>ROLE OF STUDENT</p> <ul style="list-style-type: none"> • Are the students <ul style="list-style-type: none"> • engaged and cognitively active? <input type="checkbox"/> yes <input type="checkbox"/> no • taking responsibility for learning? <input type="checkbox"/> yes <input type="checkbox"/> no • selecting appropriate strategies? <input type="checkbox"/> yes <input type="checkbox"/> no • monitoring their progress? <input type="checkbox"/> yes <input type="checkbox"/> no • self-evaluating? <input type="checkbox"/> yes <input type="checkbox"/> no • reflecting on their performance? <input type="checkbox"/> yes <input type="checkbox"/> no <p>ROLE OF INSTRUCTOR</p> <p>Is the instructor:</p> <ul style="list-style-type: none"> • helping the students to recognize appropriate prior knowledge? <input type="checkbox"/> yes <input type="checkbox"/> no • facilitating learning rather than directly teaching? <input type="checkbox"/> yes <input type="checkbox"/> no • guiding the students to achieve the task independently? <input type="checkbox"/> yes <input type="checkbox"/> no • helping the students to develop connections between principles, theory, and real life? <input type="checkbox"/> yes <input type="checkbox"/> no • encouraging student ownership of the process? <input type="checkbox"/> yes <input type="checkbox"/> no • challenging the students' ideas when appropriate? <input type="checkbox"/> yes <input type="checkbox"/> no • encouraging students to monitor their thinking? <input type="checkbox"/> yes <input type="checkbox"/> no • facilitating students' learning through the <u>process</u>? <input type="checkbox"/> yes <input type="checkbox"/> no • If students are working in collaborative groups, then is the instructor facilitating the group work and encouraging interaction? <input type="checkbox"/> yes <input type="checkbox"/> no • If students are working independently, then is the instructor providing access to the information needed to complete the activity? <input type="checkbox"/> yes <input type="checkbox"/> no
AFTER	<p>ASSESSMENT</p> <ul style="list-style-type: none"> • Is the assessment directly linked to the instructional purpose? <input type="checkbox"/> yes <input type="checkbox"/> no • Does it involve some sort of performance by the learner? <input type="checkbox"/> yes <input type="checkbox"/> no • Does the assessment evaluate: <ul style="list-style-type: none"> • Reasoning skills? <input type="checkbox"/> yes • Critical thinking? <input type="checkbox"/> yes • Retention? <input type="checkbox"/> yes • Understanding of multiple perspectives? <input type="checkbox"/> yes • Cognitive flexibility? <input type="checkbox"/> yes • Self regulation? <input type="checkbox"/> yes • Reflection and/or self-awareness? <input type="checkbox"/> yes • Application? <input type="checkbox"/> yes

APPENDIX C

SAMPLE LESSON PLANS DEVELOPED WITH IPSRT AND CPSRT

C1. SAMPLE LESSON PLAN DEVELOPED WITH IPSRT

Sınıf: 2

Ünite: Kelimelerin Dünyası

Süre: 40 Dakika

INSTRUCTIONAL GOAL:

Bilgisayarda oluşturulan metin parçalarının kopyalanabileceğini fark eder.

- ✓Relatively general and broad stating what the learner should achieve
- ✓It states WHAT we want the learner to achieve, not HOW we are going to do it

OBJECTIVE(s):

Bu dersin sonunda öğrenciler; kelime işlenci programında

1. Fareyi kullanarak bir sözcükten oluşan metni çift tıklama yöntemi ile seçer/ bloklar.
2. Araç çubuklarındaki “Kopyala” aracı ile bilgisayarın belleğine bir sözcüğün kopyasını alır.
3. “Yapıştır” aracını kullanarak bilgisayarın belleğine kopyaladığı sözcüğü istediği yere ekler.

- ✓Each objective derive directly and logically from one of the instructional goals
- ✓All four of the following components present for each objective

1. Audience

- ✓State who will be doing the performance
- ✓Stated from the LEARNER's perspective, NOT the INSTRUCTOR's perspective

2. Behavior

- ✓behavior specific and explicit
- ✓behavior is measurable and observable
- ✓behavior states what the learner will do at the END of instruction, not DURING instruction
- ✓There is one active verb

3. Condition

- ✓the context for the behavior is specified
- ✓clarify the conditions under which the performance will be done

4. Degree

- ✓ clarify how well/to what extent the performance must be done (sadece bir sözcük için bu objectiflere ulaşması yeterli)
- ✓ it is specific and measurable

MATERIALS / PREPARATION:

Bilgisayar, kelime işlemci programı (Wordpad), tahta, tebeşir

- ✓ Everything included here that is needed for the instructional activities (in the procedure section)

LEVEL AND LEARNER CHARACTERISTICS:

12'si erkek 8'i kız olmak üzere 20 öğrenci var. 2. sınıf öğrencileri olduğundan derse uzun süre dikkatlerini veremiyorlar. Derste etkinliklerin düzeylerine uygun ve kısa sürmesi gerekiyor. Öğrenciler sosyo ekonomik düzeyi düşük-orta seviyede ailelerin çocuklarıdır. Öğrencilerin %25'inin evinde bilgisayarı var. Metin üzerinde kopyalama, kesme ve yapıştırmanın pek çok yöntemi olduğu halde sadece bir yöntem (toolbardaki araçlar) kullanarak sadece bir metin parçasını (sözcüğü) kopyalamaya işlemi gösterilecek ve uygulanacaktır. Bu bakımdan hedeflerimizin öğrencilerin özelliklerine ve gelişim düzeylerine uygun olduğu söylenebilir.

- ✓ All relevant characteristics of the students included (e.g., general characteristics, ethnicity, gender, grade level, preferences or learning styles, perceptual preferences, group size).
- ✓ Our objectives are appropriate for these particular learners.

PROCEDURE

Motivating Students

Öğrencilerden biri tahtaya kaldırılır, bir oyun oynanacağı söylenir. Herkes aklına gelen kırmızı renkli nesleri söyler, tahtadaki öğrenci bu nesneleri başına kırmızı yazarak tahtaya yazar. Öğrenci bu listeyi tahtaya yazarken zaman alıcı olan kısmın ne olduğu tartışılır. Sonra da bilgisayar ortamında bu tür tekrarlanan sözcük içeren yazılar yazılırken el yazısında olduğu gibi tekrar tekrar yazmanın gereksiz olduğunu, bunun yerine yazdığımız bir sözcüğü bilgisayarın ana belleğine alarak belgeye istediğimiz kadar kopyalayabileceğimizi söyleriz.

- ✓ This activity motivates these particular learners
- ✓ We gain the learners' attention

Informing students of objectives:

Öğrencilere bu dersin sonunda kelime işlemci programında metin parçası kopyalamanın mümkün olduğunu fark edeceklerini ve bir sözüğü istedikleri kadar kopyalayabileceklerini söylüyoruz.

- ✓We inform the students of what it is that they are going to be able to do when they finish the instructional process

Helping students recall prerequisites:

Öğrencilere kelime işlemci programını nasıl açtığımızı ve nasıl alt satıra geçtiğimizi hatırlatıyoruz. Öğrencilere alt alta yazı yazmayı hatırlatmış oluyoruz.

- ✓We have reminded students of any relevant prior knowledge that is related to this new topic

Presenting Info and Examples:

Wordpad programında tahtaya öğrencinin daha önce yazdığı sözcükleri yazıyoruz.”Kırmızı” sözcüğünü sadece ilk nesne için yazıp, süreci adım adım göstererek daha sonraki neslerin önüne bu sözcüğü kopyalıyoruz. Önce kopyalamak istediğimiz sözcüğün nasıl bloklandığını (üzerine çift tıklama yöntemi) gösteriyoruz. Sonra “kopyala” aracına basıyoruz, son olarak da ekleme noktasını kırmızı sözcüğünü yapıştırmak istediğimiz yere götürüp “yapıştır” aracı ile sözcüğün bir kopyasını yapıştırıyoruz.

Öğrencilere bu sefer çevrelerindeki sarı nesnelere bir örnek vermelerini istiyoruz. Bu sırada bir tanesini wordpad’e yazıyoruz. İkinci ve üçüncü verilen örneği yazmadan önce sarı sözcüğünün nasıl kopyalandığını ve ilgili yere eklendiğini yine gösteriyoruz.

We have provided all necessary information about the subject in order for students to eventually perform the objectives

- ✓We have provided examples so that the students can see how they can use the information

Provide Practice and Feedback:

Kopyala yapıştır işleminin gösterilmesinden ve örnekle pekiştirilmesinden sonra öğrencilere kelime işlemci programını açtırıyoruz. Öğrencilerden ikişerli grup yapıyoruz. Her bir gruba bir renk verip bu renkte bildikleri nesleri wordpad’te yazmalarını ve yazarken rengi her seferinde klavye ile yazmayıp, ilk yazdıklarını kopyalamalarını istiyoruz. En fazla nesne yazan gruba şeker vereceğimizi duyuruyoruz. Bu sırada sınıfta dolaşıp öğrencileri gözlemliyoruz, kopyalama ve yapıştırma konusunda zorlanan öğrencilere birebir dönüt/düzeltilme veriyoruz, gerektiğinde sınıfa açıklamalarda bulunuyoruz.

- ✓We have provided practice opportunities that are directly related to the skills, knowledge, and attitudes reflected in the objectives
- ✓We have provided feedback to the students

Summarizing the lesson:

Değerlendirme bittikten sonra, dersin son iki-üç dakikasında, bu derste bilgisayarda metin parçalarının kopyalanabileceğini öğrendiklerini ve bir sözcüğü nasıl kopyaladığımızı tekrar ederek bilginin pekişmesini sağlıyoruz.

- ✓We have you summarized the lesson to bring closure and help reinforce the skills and knowledge that the students have just acquired

ASSESSMENT:

Öğrencilere uygulama sonrasında ekranları kapattırıyoruz. Metin kopyalama, yapıştırma araçlarının simgelerini ve bunların ne işe yaradığı bildiren cümleleri verip öğrenciden buları eşleştirmelerini isteyen bir quiz veriyoruz. Quzide ayrıca, bir sözcüğü bloklamak (seçmek) için ne yaparız diye bir kısa cevaplı soru soruyoruz.

- ✓Our assessment clearly align with your objectives
- ✓The active verbs of the test items MATCH the active verbs of the objectives

OVERALL:

- ✓Each objective is effectively taught and assessed
- ✓The lesson flow logically and easily through each section from goals to assessment
- ✓There an instructional purpose for each activity (in procedure section)
- ✓The materials are appropriate for the learners?
- ✓We included all the materials necessary for the activities (in procedure section)
- ✓The instructional media that we chose appropriate for each activity (in procedure section)
- ✓The assessment items reflect what you think students should have learned.

C2. SAMPLE LESSON PLAN DEVELOPED WITH CPSRT

Case for Demonstration: You have been taught for almost a year. Next week a supervisor from the Ministry of National Education will visit your class and watch your lesson with 1st grades. So it is very important to be well-organized and efficient in that lesson. You need to write a lesson plan for that lesson whose learning outcome is “4.3 Kelimeler arasındaki boşluğun önemini anlar ve boşluk bırakarak yazı yazar”.

UNIT: “4. I am beginning to type”

Duration: 40 minutes

INSTRUCTIONAL PURPOSE

The students will understand the importance of space between words and types words by using spaces between them.

DEFINE LEARNING ACTIVITY (IES):

Activity 1:

Students are given a short joke on a paper written without any spaces among the words. Students try to read and understand the joke in groups of two. They realize the problem with the text. Then teacher asks questions to students for identifying solution of the problem and realizing the importance of spaces between words.

Then the teacher delivers the same joke on paper with spaces among the words. One of the students reads it aloud to the whole class.

The teacher reminds (demonstrates) how the space is typed on the keyboard by using WordPad program.

Activity 2:

The teacher asks students to write a aphorism from Atatürk they know about “23 Nisan Ulusal Egemenlik ve Çocuk Bayramı” on the WordPad by inserting space between the words. If there are students with no aphorism in their mind, then teacher gives one for those students.

Students print the aphorism they wrote and they attach it on the classroom bulletin board.

ROLE OF THE STUDENT

The student must have an active role in learning by collaborating with class-mates during the first activity, by solving the problem in the text. They carefully follow the teacher’s demonstration and apply the new knowledge about space bar on the computer by

writing a quote of Atatürk. Students counts how many space mistakes in the quate they wrote and evaluate themselves by high performment if there is no space mistake; average performment if there is 1-2 space mistake and; poor performment if there are more than 3 space mistake.

ROLE OF THE INSTRUCTOR

The teacher reminds the prerequisite skills for this lesson. S/he is facilitator and encourager rather than transporter of knowledge directly. S/he asks questions to promote reflection and thinking as students work in groups. So that students may not remember any quotes of Atatürk, s/he brings a list of appropriate aphorism of Atatürk about children and “23 Nisan Ulusal Egemenlik ve Çocuk Bayramı”.

ASSESSMENT

Printed aphorism of Atatürk, which are written by students are examined and graded by the teacher according to number of misuse of space and lack of space.

APPENDIX D

CASES USED FOR INTRODUCING IPSRT AND CPSRT

D1. CASES USED for INTRODUCING IPSRT

1. Case for in-class group activity with IPSRT

You are a computer teacher in a primary school. Since the other computer teacher is abroad for an EU project, the principal asked you to give computer course to the 5th grades in this week. So, you have to write a lesson plan for the following instructional goal: “(5. Basamak, Kazanım 1.2) İnternet adreslerinin oluşumunu ve yapısını anlar.”

Please write this plan in groups of three or four.

2. Case for Individual Assignment (in-class activity) - IPSRT

Please write 40-minute a lesson plan for any of the following instructional goals by using IPSRT:

- 1) (2. basamak, kazanım 1.3) BT ile uygun bir çalışma ortamı oluşturmaya yardım edebilecek unsurları ve uygulamaları belirler.”
- 2) (3. basamak, kazanım 1.6) Bilgilerini düzenli bir şekilde depolamak için oluşturduğu dosya ve klasörleri düzenler.
- 3) (4. basamak, kazanım 2.3) Kelime işlemcide amacına uygun tablolar oluşturur ve düzenler.
- 4) (4. basamak, kazanım 4.4) Bilgisyardaki bilgilerine yönelik çeşitli kaynaklardan gelebilecek tehditlere karşı önlemler alır.
- 5) (6. Basamak, kazanım 5.2) Belirli problemlerin çözümüne formülleri kullanarak hesaplamalar yapar.

(Note: This assignment is assignment 2 for Section 2 and assignment 3 for Section 1.)

3. IPSRT Quiz

Please write a 40-minute lesson plan for the following instructional purpose for 6th grade:

IPSRT Quiz for Section 1:

“Kullanım haklarına göre yazılım türlerini açıklar.”

IPSRT Quiz for Section 2:

“Farklı amaçlar için kullanılan yazılım ve donanımlara örnekler verir.”

D2. CASES USED FOR INTRODUCING CPSRT

1. Case for in-class Activity with CPSRT

You are a computer teacher in a primary school. This week, the principal will watch one lesson hour of each teacher in order to collect data for an accreditation study. You decided to invite him to the lesson with 5th grades. So, you have to write a lesson plan for that lesson with the following learning outcome: “(5. basamak, kazanım 1.3) - İlgili alanına giren internet adreslerini belirli bir düzende sınıflandırır.”

Please write this plan in groups of three or four.

2. Case for Individual Assignment (in-class activity) - CPSRT

Please write 40-minute a lesson plan for any of the following instructional goals by using CPSRT.

Cases for instructional planning:

- 1) (2. basamak kazanım 3.6) Kelime işlemci programında amacına uygun sayfalar oluşturmak için belgeye resim ve şekil ekler.
- 2) (3. basamak, kazanım 1.5) Dosyaların ve yazılımların güvenliği için sürekli taşınabilir ortamlarda yedekler.
- 3) (6. basamak, kazanım 1.4) E-devlet uygulamalarını günlük yaşamında kullanır.
- 4) (6. basamak, kazanım 5.4) Bir elektronik çizelge kullanarak amacına uygun tiplerde grafik oluşturur ve düzenler.
- 5) (6. Basamak, kazanım 2.3) Uygun teknikleri kullanarak basit bir veritabanı oluşturur.

(**Note:** This assignment is assignment 2 for Section 1 and assignment 3 for Section 2.)

3. CPSRT Quiz

Please write a 40-minute lesson plan for the following instructional purpose for 2nd grade:

CPSRT Quiz for Section 1:

“Metindeki kelimelerin farklı şekil boyut ve renklerde olabileceğini fark eder.”

CPSRT Quiz for Section 2:

“Bilgi paylaşmak amacıyla e-posta kullanır.”

APPENDIX E

QUESTIONNAIRES ADMINISTERED AFTER IPSRT AND CPSRT

E1. Questionnaire after IPSRT

Öğretim Planlamasına ve IPSRT Aracına Yönelik Tutum ve Motivasyon Anketi

<p>Değerli öğrencimiz,</p> <p>Bu anket sizlerin öğretim planlamasına yönelik tutum ve motivasyonunuzu ölçmeye yöneliktir. Sonuçlar öğrenci değerlendirmesinde KULLANILMAYACAK, öğrencilerin kimlik bilgileri gizli tutularak sadece araştırma amaçlı kullanılacaktır. Seçmeli sorularda sizin için en geçerli olan şıkkın solundaki kutuyu “X” harfi ile işaretleyiniz. Açık uçlu sorularda sizin için doğru olan cevabı sağlanan boşluklara yazınız.</p> <p>Katkınız için teşekkür ederiz.</p> <p style="text-align: center;">Hamide Şahinkayaşı Doç. Dr. Soner Yıldırım</p>
--

Öğrenci numaranız: _____

A. “Instructional Planning Self-Reflective Tool” Aracına Yönelik Algılar

1. Lütfen aşağıdaki her bir madde için ilgili satırdaki puan aralığından size göre uygun olan bir puan veriniz.

Ders planı hazırlarken, IPSRT
(When writing lesson plans, IPSRT was)

	Puan	Puan Aralığı
Yardımcı oldu (Helpful)		1.....5 Kesinlikle yardımcı olmadı Son derece yardımcı oldu (definitely not helpful) (extremely helpful)
Kullanımı kolaydı (Easy to use)		1.....4 Hiç kolay değildi Son derece kolaydı (definitely not at all easy) (extremely easy)
İlgimi çekti (Interesting)		1.....4 Hiç ilgimi çekmedi Son derece ilgimi çekti (Not at all interesting) (Extremely interesting)
Esnekti (Flexible)		1.....4 Hiç esnek değildi Son derece esnekti (Not at all flexible) (Extremely flexible)

Kullanmalarını arkadaşlarıma tavsiye ederim (Reccomendation of tool to a friend)		1.....4 Hiç tavsiye etmem (Not at all recommend)	Çok tavsiye ederim (highly recommend)
---	--	--	--

2. Ders planı hazırlama sürecinde IPSRT aracını kullanmak (birden fazla seçenek seçebilirsiniz)

- Kendimi değerlendirmemi sağladı
- Kendi ders planı hazırlama sürecimi izlememi sağladı
- Bilişsel esneklik - Öğretici rolümü, öğrencilerin öğrenmesini kolaylaştıracak biçimde rehber rolüne dönüştürmemi - sağladı.

3. Ders planı hazırlama sürecinde IPSRT aracı size ne gibi yararlar sağladı? Lütfen listeleyiniz.

B. Öğretim Planlamasına (Ders Planı) Yönelik Tutum/Motivasyon

1. Lütfen, “öğretim planlamasının” (ders planı) size çağrıştırdığı ilk iki kelimeyi/ kelime grubunu yazınız:

(Write two adjectives to describe what you think about instructional planning)

2. Ders planı yapabileceğinizden ne kadar eminsiniz? 10’den 100’e kadar bir puan belirleyiniz. (How sure are you that you can write a lesson plan?)

_____ 10.....100

(Hiç emin değilim) (Çok eminim)

3. Bir öğretmen adayı olarak ders planı yapmak ne kadar önemlidir?

(How important is writing a lesson plan to you as a future professional?)

- (1) Hiç önemli değil
- (2) Biraz önemli
- (3) Önemli
- (4) Çok önemli
- (5) Son derece önemli

4. Öğretim planlamasına yönelik eklemek istediğiniz düşünceleriniz:

E2. Questionnaire After CPSRT

Öğretim Planlamasına ve CPSRT Aracına Yönelik Tutum ve Motivasyon Anketi

Değerli öğrencimiz,

Bu anket sizlerin öğretim planlamasına yönelik tutum ve motivasyonunuzu ölçmeye yöneliktir. Sonuçlar öğrenci değerlendirmesinde KULLANILMAYACAK, öğrencilerin kimlik bilgileri gizli tutularak sadece araştırma amaçlı kullanılacaktır. Seçmeli sorularda sizin için en geçerli olan şıkkın solundaki kutuyu "X" harfi ile işaretleyiniz. Açık uçlu sorularda sizin için doğru olan cevabı sağlanan boşluklara yazınız.

Katkınız için teşekkür ederiz.

Hamide Şahinkaya

Doç. Dr. Soner Yıldırım

Öğrenci numaranız: _____

A. "Constructivist Planning Self-Reflective Tool" Aracına Yönelik Algılar

1. Lütfen aşağıdaki her bir madde için ilgili satırdaki puan aralığından size göre uygun olan bir puan veriniz.

Ders planı hazırlarken, CPSRT

(When writing lesson plans, CPSRT was)

	Puan	Puan Aralığı
Yardımcı oldu (Helpful)		1.....5 Kesinlikle yardımcı olmadı (definitely not helpful) Son derece yardımcı oldu (extremely helpful)
Kullanımı kolaydı (Easy to use)		1.....4 Hiç kolay değildi (definitely not at all easy) Son derece kolaydı (extremely easy)
İlgimi çekti (Interesting)		1.....4 Hiç ilgimi çekmedi (Not at all interesting) Son derece ilgimi çekti (Extremely interesting)
Esnekti (Flexible)		1.....4 Hiç esnek değildi (Not at all flexible) Son derece esnekti (Extremely flexible)
Kullanmalarını arkadaşlarıma tavsiye ederim (Reccomendation of tool to a friend)		1.....4 Hiç tavsiye etmem (Not at all recommend) Çok tavsiye ederim (highly recommend)

2. Ders planı hazırlama sürecinde CPSRT aracını kullanmak (birden fazla seçenek seçebilirsiniz)

- Kendimi değerlendirmemi sağladı
- Kendi ders planı hazırlama sürecimi izlememi sağladı
- Bilişsel esneklik - Öğretici rolümü, öğrencilerin öğrenmesini kolaylaştıracak biçimde rehber rolüne dönüştürmemi - sağladı.

3. Ders planı hazırlama sürecinde CPSRT aracı size ne gibi yararalar sağladı? Lütfen listeleyiniz.

B. Öğretim Planlamasına (Ders Planı) Yönelik Tutum/Motivasyon

1. Lütfen, “öğretim planlamasının” (ders planı) size çağrıştırdığı ilk iki kelimeyi/ kelime grubunu yazınız:

(Write two adjectives to describe what you think about instructional planning)

2. Ders planı yapabileceğinizden ne kadar eminsiniz? 10'den 100'e kadar bir puan belirleyiniz. (How sure are you that you can write a lesson plan?)

_____ 10.....100

(Hiç emin değilim) (Çok eminim)

3. Bir öğretmen adayı olarak ders planı yapmak ne kadar önemlidir?

(How important is writing a lesson plan to you as a future professional?)

- (1) Hiç önemli değil
- (2) Biraz önemli
- (3) Önemli
- (4) Çok önemli
- (5) Son derece önemli

4. Öğretim planlamasına yönelik eklemek istediğiniz düşünceleriniz:

APPENDIX F

RUBRICS FOR PLANS WITH IPSRT AND CPSRT

F1. RUBRIC FOR INSTRUCTIONAL PLANS with IPSRT

Components of the Plan	Yes (1)	No (0)
Instructional goal		
General and broad		
Connected to curriculum		
Realistic		
Behavioral Objectives		
Drives directly and logically from instructional goal		
States what the LEARNER will do		
States behavior specifically and explicitly		
Includes measurable and/or observable behaviors		
States what the learner will do at the END of the lesson		
Uses ONE active verb		
Specifies contextual conditions under which the performance will be done		
States how well & to what extent the learner will do		
Appropriateness of objectives for the learners		
Materials/preparation to the lesson		
Lists all instructional materials to be used		
Appropriateness to learners		
Learner characteristics		
Includes relevant characteristics of learners		
Procedure		
Uses effective motivating strategies/ methods/ tactics		
Gains learners' attention		
Gives information about objectives		
Helps students recall prior knowledge/prerequisite knowledge & skills		
Provides students with necessary information		
Provides students with examples		
Provides practice (knowledge & skills) for students		
Provides feedback to student practice		
Summarizes the major points		
Reinforces acquired knowledge/skills		
Tries to teach all the objectives		
The procedure (strategy, method, tactics) is appropriate with		
Objectives		
Content		
Learner characteristics		
Assessment		
Assesses all the objectives		

F2. RUBRIC FOR INSTRUCTIONAL PLANS with CPSRT

Components of the Plan	Yes (1)	No (0)	NA
Instructional Purpose/ learning outcomes			
Describes one or more of the following learning outcomes: reasoning skills, critical thinking, retention, understanding of multiple perspectives, cognitive flexibility, self-regulation, reflection and/or self-awareness, application			
Directed towards useful personal knowledge			
Learning Activities			
Fulfill the instructional purpose			
Cognitively activate the students			
Focus on learning process rather than specific knowledge			
Promote personal interest interests of students			
Integrate information with prior knowledge of students			
Relevant			
Meaningful			
Authentic			
Ill-structured tasks			
Complex			
Multi-disciplinary			
Include “what-if” questions			
Encourage multiple perspectives			
Involve cognitive conflict			
are defined in part by the learner			
Include discussion and/or collaboration			
Involve social negotiation and communication			
Involve the sharing of information and/or culture			
Role of the student			
Engages and cognitively active			
Takes responsibility for learning			
Selects appropriate strategies during the activities			
Monitors his/her progresses			
Evaluates himself/herself			
Reflects on his/her performance			
Role of the Instructor			
Helps students recall necessary prior knowledge			
Facilitates learning rather than directly teaching			
Guides the students to achieve the task independently			
Helps the students develop connections between principles, theory and real life			
Encourages student ownership of the learning process			
Challenges the students’ ideas when appropriate			
Encourages students to monitor their thinking			
Facilitates students’ learning through the process			
If students are working in collaborative groups, then the instructor facilitates the group work and encourages interaction			
If students are working independently, then the instructor provides access to the information needed to complete the activity			
Assessment			
Directly link to the instructional purpose			
Involves some sort of performance by the learner			
Evaluates one or more of the following learning outcomes: reasoning skills, critical thinking, retention, understanding of multiple perspectives, cognitive flexibility, self-regulation, reflection and/or self-awareness, application			

APPENDIX G

MICROTEACHING PLANNING GUIDE

MİKROÖĞRETİM SUNUMU - DERS PLANI REHBERİ

Yönerge:

1. Mikroöğretim için bu rehberi kullanarak **20 dakikalık** ders planı geliştiriniz. Bu rehber İlköğretim Bilgisayar dersi eğitim programında yer alan etkinlik planı temel alınarak geliştirilmiştir.
2. Ders Planını geliştirirken daha önce kullandığımız planlama araçlarından (IPSRT ve CPSRT) yararlanarak planlama sürecinizi izlemeye ve değerlendirmeye özen gösteriniz. Örneğin, öğrencinin fazla ön bilgisi olmadığı konularda anlama, kavrama düzeyindeki hedefler için (Instructivist) ders geliştirip dersin planını IPSRT aracından; yeterince ön bilgiye sahip olduğu konularda analiz, sentez, değerlendirme gibi üst düzey beceriler içeren hedefler için daha çok öğrenci-merkezli (Constructivist) etkinlikler geliştirip, etkinlikte bulunması gereken özellikleri CPSRT aracından kontrol edebilirsiniz.
3. Mikroöğretiminizi ister öğretmen-merkezli (Instructivist paradigm), ister öğrenci-merkezli (Constructivist paradigm) hazırlayın, **mikroöğretim planlarınızda “Active Learning: : 101 Strategies to Teach Any Subject” kitabından bir aktif öğrenme stratejisine yer veriniz (özellikle basit ve orta düzey stratejiler).**
4. Seçtiğiniz kazanıma yönelik 20 dakika içinde öğretebileceğiniz kadar hedefi belirleyip o hedeflerin öğretilmesi için yaşanacak bir ders sürecini bütünsel olarak yansıtmaya çalışınız. Hedef kitlenizin özelliklerini araştırıp, o özelliklere ve hedeflerinize göre kullanacağınız öğretim yöntem ve stratejilerine karar veriniz. Bunların yanı sıra, mikroöğretim sunumunuzda kullanacağınız öğretim metodu ve stratejilerini **dayandığı öğretim teorisine ve prensiplerine uygun** işlemeye odaklanmalısınız. Yani, **kullandığınız öğretim yönteminin, tekniğinin ve (textbook’tan seçtiğiniz) aktif öğrenme stratejisinin tipik özelliklerini sergilemeye çalışınız.**

A. Hazırlık

Bu kısım dersle ilgili genel bilgiler verir. Kazanımlar, süre, yöntem ve teknikler, araç-gereçler vb. bilgileri içermelidir.

Planlayan: Adınızı ve soyadınızı yazınız.

Basamak: Hangi basamağa yönelik ders planladığınızı belirtiniz.

Ünite Adı: İşlediğiniz kazanımın yer aldığı ünitenin adını yazınız.

Etkinlik Adı: Etkinliğinizi (dersinizi), işlediğiniz kazanımın konusunu içerecek şekilde adlandırınız.

Süre: 20 Dakika

Dersin Genel Amacı, Kazanım(lar) ve Hedefler: Burada bu dersin genel amacı, kazanımlar ve hedefler (objectives) yer alır. Dersin mikroöğretim olduğunu ve 20 dakika süreceğini düşünerek sadece bir kazanım üzerinde yoğunlaşmanız, hatta kazanım üst düzey beceri gerektiren karmaşık bir yapıda ise kazanımın bir kısmına yoğunlaşmanız daha doğru olacaktır. Kazanımın gerektirdiği davranışsal hedefleri de belirtiniz.

Bir Önceki Etkinlik: Bir önceki derste yapılan etkinliğin konusu (işlenen konu) yazılır.

Bir Sonraki Etkinlik: Bir sonraki derste yapılacak etkinliğin konusu (işlenecek konu) yazılır.

Kullanılacak Yöntem, Teknik ve Stratejiler: Derste kullanacağınız yöntem ve teknikler ve “Active Learning” kitabından uygulanmaya karar verdiğiniz aktif öğrenme stratejisinin sadece adlarını buraya yazın.

Gerekli Araç – Gereçler ve Öğrenme Materyalleri: Dersin işlenmesi için gereken araç ve gereçler ile öğretmen tarafından geliştirilen ya da seçilmiş **sunum, poster, resim, çalışma kağıdı** gibi öğrenme materyallerinin listesi burada yer almalıdır. Kullanacağınız öğrenme materyallerini plana EK olarak iliştiniz.

Öğrenci Özellikleri: Sınıf mevcudu, kız-erkek oranları, öğrencilerin bilişsel gelişim düzeyleri, sosyoekonomik durumları hakkında bilgi veriniz. Hedef kitlenizin bilişsel, sosyal ve psikolojik gelişim düzeyleri konusunda **teoriye dayalı bilgiler veriniz (Piaget, Erikson, Vygotsky, vb.)**. Böylelikle öğrencilerinizin genel özelliklerini tanıdığımızdan, onların güçlü ve zayıf yanlarını bilerek daha etkili ders planları hazırlayabilirsiniz.

Mikroöğretimde öğrenci sayısı tıpkı süre gibi sınırlı tutulur, bu bakımdan kullanacağınız yöntem ve tekniklere göre öğrenci sayısını 5-10 olacak şekilde sınırlayın. Öğrenci sayısını sınırlamanız süreyi iyi kullanmanızı sağlayacaktır. Örneğin, kullandığınız

yöntem gereği bireysel çalışma yapılacaksa 5, ikişerli grup yapılacaksa 6, üçerli grup yapılacaksa 9, dörderli grup yapılacaksa 8 kişi ile öğrencinizi sınırlandırabilirsiniz.

Zaman Çizelgesi: Dersin hangi bölümüne kaç dakika ayıracağınızı aşağıdaki örnek tabloda olduğu gibi belirtiniz. Sınıf içinde mikroöğretim yapmadan önce **mutlaka zaman tutarak prova yapınız** ve 20 dakika içinde planı uygulayabileceğinizden emin olunuz.

Zaman (Dakika)	Süreç
0 – 4:	Bilgi Paylaşımı
4 – 16:	Uygulama
16– 20:	Sonuç ve değerlendirme

B. Derse Giriş

Dersin başında, yeni bilgilerin oluşturulmasından önce öğrencinin **önceki bilgilerinden, ihtiyaçlarından, ilgilerinden veya isteklerinden** yola çıkılarak öğrenci derse hazırlanmalıdır (Kısa bir film, drama, resim, İnternet sitelerine ziyaret vb.). Burada öğrenciler kazanımı öğrenmeye yönelik motive edilir ve kazanım konusunda bilgilendirilir.

Mevcut Bilgi ve Beceriler: Öğrencilerin kazanım(lar) ile ilgili mevcut bilgi ve becerilerinin (prerequisite skills and prior knowledge) ne olduğu planın bu kısmında belirtilmelidir. Programda daha önce işlenmiş olan ilgili kazanımları inceleyip bu kısmı o veriye dayanarak yazınız.

C. Uygulama (Dersin İşlenişi ve Etkinlikler)

Derse girişten sonra öğrenciler, programın genel felsefesi doğrultusunda kazanıma dönük düzenlenen okul içi veya okul dışı etkinlikler yapmalıdırlar. Kazanım yeni bir bilgi (kavram/olgu/fikir), beceri, tutum, ya da bir değer öğrenmeyi içeriyor olabilir. Bu bakımdan, öğrenme yöntem ve tekniklerini seçerken kazanımın özelliğine dikkat ediniz. Kazanım, alternatif etkinliklerle (farklı bölgelerin özelliklerine göre, farklı zekâ alanlarına göre vb.) desteklenebilir. Kazanımda geçen kavram veya kurallar, temel bilgiler öğretmen tarafından açıklanmalı/gösterilmelidir. Bir başka deyişle ders, **öğrenci-merkezli** etkinliklerin yanı sıra gerektiğinde **öğretmen-merkezli** öğretim yöntem ve teknikleri de içerebilir. Kullandığınız öğretim yöntem ve tekniğinde öğretmenin ve öğrencinin neler yapacağını betimleyiniz. Mikroöğretim sırasında, kullandığınız öğretim yönteminin, tekniğinin ve (textbook'tan seçtiğiniz) aktif öğrenme stratejisinin tipik özelliklerini sergilemeye çalışınız.

D. Sonu ve Deęerlendirme

Deęerlendirme (Assessment): Dersin iřleniři sonrasında dersin genel amacına ve hedeflerine ne kadar ulařıldığını deęerlendirmek iin deęerlendirme alıřması (soru, resimleme, kavram haritası, anlatım, deęerlendirme leęi vb.) yapılmalıdır.

Dersi Sonlandırma: Dersin sonunda đretmen, dersin ana fikrini tekrar belirtir ve bu derste yaptıklarını birkaç cmle ile zetler. Gelecek derste yapılacaklara ynelik đrencileri bilgilendirir.

dev: đrencilerin derste đrendiklerini pekiřtirecek ve/veya gelecek derse hazırlayacak dev verebilirsiniz. Nasıl bir dev vereceęinizi belirtiniz ve devi plana EK olarak iliřtiriniz.

E. Kaynaklar

đrencilerin konu ile ilgili olarak daha fazla bilgiye ulařabilecekleri kitaplar, İnternet adresleri, vb. kaynaklar listelenmelidir.

APPENDIX H

MICROTEACHING ASSESSMENT FORM

Table H Microteaching Assessment Form

Değerlendirilen Öğrenci Numarası:		Mikroöğretim yaparın Adı, Soyadı:					
Lütfen bu formu doldurarak sınıf arkadaşınızın mikroöğretimini niteliklerin olduğu bir tablo da verilen her bir mikroöğretim bileşeninde arkadaşınızın ne derece iyi olduğunu ilgili kutuyu "X" ile işaretleyerek değerlendiriniz. Puanlama sisteminin şu şekildedir: 4- Çok İyi, 3- İyi, 2- Orta, 1- Yetersiz, 0- Hiç Yok; Duruma uygun değil- Bu derste kullanılması uygun değil. Lütfen, atka sayfadaki açık uçlu iki soruyu yanıtlamayı UNUTMAYINIZ. Katkınız için teşekkürler.							
Dersin Aşamaları	Çok İyi (4)	İyi (3)	Orta (2)	Yetersiz (1)	Hiç yok (0)	Duruma uygun değil	Övgü, Eleştiri ve Öneriler
Derse Giriş							
Dersin amacını ve hedeflerini açıkça bildirdi							
Öğrencileri konuyla ilgili motive etti							
Öğrencilerin mevcut bilgilerinin hatırlattı							
Uygulama (Dersin işleniş ve edinimler)							
Uygun* içerik kullandı							
Uygun öğretim yöntem(leri) ve teknik(leri) kullandı							
Uygun öğretim materyal(leri) kullandı (sunum, çalışma kağıdı, görseller, vb.)							
Uygun örnekler verdi							
Öğrencilerin aktif katılımını sağladı							
Uygun dönüt /düzeltme verdi							
Dersi Sonlandırma ve Değerlendirme							
Uygun değerlendirme stratejisi(leri) kullandı							
Dersin önemli noktalarını özetledi							
Gelecek derse bağlantı yaptı (Açıklama, Ev ödevi vb.)							
Genel Olarak							
Zamanı etkili kullandı							
Konuyu öğrencinin günlük hayatı ile ilişkilendirdi							
Kıtlık - kıyafet (gün, durum)							
Öğrencilere yönelik davranışlar (tavır ve tutumlar)							
İletişim (konuşma, göz teması, mimik, el ve kol hareketleri)							
GENEL OLARAK DERS NASILDI?							
* Bu değerlendirme formunda "uygun" sözcükle, "dersin öğretim amaç ve hedefleri ile öğrencilerin seviyesine uygun" anlamında kullanılmıştır.							

Table H Continued (Back of the Microteaching Assessment Form)

Bu Mikroöğretim sunumunda,

Sizce, dersin **en iyi olan iki yönü** ne idi? Bu yönü neden iyi bulduğumuzu lütfen açıklayınız.

i.

ii.

Sizce, dersin **en zayıf iki yönü** ne idi? Bu zayıf yönler güçlendirilerek dersin daha iyi işlenmesi için **önerilerinizi** lütfen yazınız.

i.

ii.

APPENDIX I

MICROTEACHING SELF-ASSESSMENT FORM

Table I Microteaching Self-Assessment Form

Dersin Aşamaları							Övgü, Eleştiri ve Öneriler
	Çok İyi (4)	İyi (3)	Orta (2)	Yetersiz (1)	Hiç yok (0)	Duruma uygun değil	
Mikroöğretim yapmanın Adı, Soyadı:							
Lütfen bu formu doldurarak sınıf arkadaşınızın mikroöğretiminin mümkün olduğunca objektif biçimde değerlendiriniz. Aşağıdaki tabloda verilen her bir mikroöğretim bileşeninde arka daşıman ne derece iyi olduğunu ilgili kutuyu "X" ile işaretleyerek değerlendiriniz. Puanlama sistemi şu şekildedir: 4- Çok iyi, 3-İyi, 2- Orta, 1- Yetersiz, 0- Hiç Yok. Duruma uygun değil- Bu derste kullanılması uygun değil. Lütfen, arka sayfadaki açık uçlu iki soruyu yanıtlamayı UNUTMAYINIZ. Katkınız için teşekkürler.							
Derse Giriş							
Dersin amacını ve hedeflerini açıkça bildirdim							
Öğrencileri konuyla ilgili motive ettim							
Öğrencilerin mevcut bilgilerini hatırlattım							
Uygulama (Dersin işleniş ve etkinlikler)							
Uygun* içerik kullandım							
Uygun öğretim yöntem(leri) ve teknik(leri) kullandım							
Uygun öğretim materyal(leri) kullandım (sunum, çalışma kağıdı, görseller, vb.)							
Uygun örnekler verdim							
Öğrencilerin aktif katılımını sağladım							
Uygun dönüt / düzeltme verdim							
Dersi Sonlandırma ve Değerlendirme							
Uygun değerlendirme stratejisi(leri) kullandım							
Dersin önemli noktalarını özetledim							
Gelecek derse bağlantı yaptım (Açıklama, Ev ödevi vb.)							
Genel Olarak							
Zamanı etkili kullandım							
Konuyu öğrencimin günlük hayatı ile ilişkilendirdim							
Kılık - kıyafet (giyim, duruş)							
Öğrencilere yönelik davranışlar (tavır ve tutumlar)							
İletişim (konuşma, göz teması, münük, el ve kol hareketleri)							
GENEL OLARAK DERSİM NASILDI?							
* Bu değerlendirme formunda "uygun" sözcükleri, "dersin öğretim amaç ve hedefleri ile öğrencilerin seviyesine uygun" anlamında kullanılmaktadır.							

Table I Continued (Backside of the Microteaching Self Assessment Form)
Bu Mikroöğretim sunumunda,

Sizce, dersin **en iyi olan iki yönü** ne idi? Bu yönü neden iyi bulduğunuzu lütfen açıklayınız:

i.

ii.

Sizce, dersin **en zayıf iki yönü** ne idi? Bu zayıf yönler güçlendirilerek dersin daha iyi işlenmesi için **önerilerinizi** lütfen yazınız.

i.

ii.

APPENDIX J

MICROTEACHING SELF-REFLECTION ASSIGNMENT

A. MICROTEACHING PLANNING PROCESS WITH FEEDBACKS

1. Write an introductory paragraph, including grade level, unit name, learning outcome (kazanım), instructional goal, and objectives for your microteaching.
2. Compare and contrast your first, and second version (with feedback from the instructor) of microteaching lesson plans and your final microteaching plan in terms of the following components:
 - a. Introduction
 - b. Instructional goal and objectives
 - c. Instructional materials
 - d. Learner characteristics
 - e. Timeline
 - f. Prior knowledge and skills
 - g. Teaching and learning activities
 - h. Assessment strategies
 - i. Homework
 - j. Closure
3. In what ways and to what extent does “microteaching planning process with feedbacks” contribute to your instructional planning knowledge and skills? Please, explain your opinions regarding the components above.

B. MICROTEACHING

Preparation for Essay: Analyzing Microteaching Assessment Form Results

1. Please, watch your microteaching performance from the video, and fill the **Microteaching Self-Assessment Form** as objectively as possible.
2. **Analyze the feedbacks from your instructor, research assistants, and classmates by following the procedures described below.**
 - a. Open **Microteaching Performance.xls** file. There are three worksheets (data, graph, and results) that you can analyze quantitative data on the

microteaching assessment forms. Enter assessment form ratings about phases of instruction as one form on a column (4: Very good, 3: good, 2: average, 1: poor, 0: None, NA: Not applicable). Include assessment forms from your class-mates, instructor, research assistant(s), and your self-assessment as well. Control the accuracy of average calculations. Then examine the graph created dynamically by Microsoft Excel in the worksheet named as **Graph**. From the graph, see the results visually and decide at which performance indicators you are evaluated as strongest, and at which ones you are evaluated as weakest. Finally, open the **results** worksheet and sort the average scores of your microteaching performance indicators in descending order. Note four strong sides and four weak sides of your performance from this list. By this way, you will learn the average of the ratings for your performance.

- b. Then synthesize the written feedbacks about your microteaching performance in “strong and weak sides” and “comments” parts by filling the first three columns of the table seen in Appendix A. For example, if you have 15 assessment forms in total and 10 of them states that “You motivated the students very well” as a strong side of your microteaching. Then you will write “Motivated students very well” in the first column and write 10 to number of persons part. You will fill strong sides, weak sides and suggestions tables covering all types of feedback, from frequently stated to few stated ones. Check whether these results are consistent with those in the results and graph worksheets in *Microteaching Performance.xls*.
3. Watch your microteaching video again. While you are watching, write your responses to the feedbacks into “Your response” column of the table in Appendix A. You will approve or refute ideas in the feedbacks (by reasoning) with your responses. You can pause the video while you are writing your responses.

Microteaching part in the essay:

Answer the following three questions under the title of Microteaching in your essay:

1. Describe 3 strong aspects of your microteaching (or more if exist). Relate these strengths to teaching and/or learning theories (Basic features of Major Theories of Instruction can be seen in Appendix 2 and list of major Teaching and learning theories can be seen in Appendix 3).

2. Describe 3 weak aspects of your microteaching (or more if exist). Relate these weaknesses to teaching and/or learning theories (See Appendix 2 and 3).
3. If the goal, objectives, target audience, and classroom environment were the same for your microteaching, in order to improve your teaching performance, how would you design and present your instructional planning and microteaching respectively? Please, explain in details by considering the following:
 - a. Active Learning Strategies, teaching strategies, methods, techniques, tactics, activities, materials, assessment, etc.
 - b. How did the lesson go?
 - c. What were the similarities and differences between your intentions and actual implementation in your microteaching?
 - d. What will be the effect of this microteaching experience on your future lessons? Write your new learning, discoveries and insights.

Note: For Assignment 5, you will submit the followings in electronic format:

- ✓ Self-Reflection Essay (Having two parts: a. Microteaching planning process with feedbacks and b. Microteaching)
- ✓ Appendix 1: Microteaching Feedbacks and your responses
- ✓ Ratings for your Microteaching (Microteaching performance.xls)

Microteaching Self-Evaluation Form (This can be submitted in hard copy format)

Appendix 1: Microteaching Feedbacks and Your Responses

Strong Sides (from most stated to least stated one)	Number of Persons stating this claim	Related comments on the front-page of the forms	Your Response
---	--------------------------------------	---	---------------

1.

2.

3.

(Continue as necessary)

Appendix 1 continued

Weak Sides (from most stated to least stated one)	Number of Persons stating this claim	Related comments on the front-page of the forms	Your Response
1.			
2.			
3.			

(Continue as necessary)

Suggestions for improvement (from most stated to least stated one)	Number of Persons stating this claim	Related comments on the front-page of the forms	Your response
1.			
2.			
3.			

(Continue as necessary)

Appendix 2: Basic Features of Theories of Instruction*

	Founders	General Characteristics	Methods	The role and characteristics of teacher
BEHAVIORISM	Skinner, Pavlov, Thorndike, Watson	Stimulus, response, shaping, modeling, extinction, operant and classical conditioning, reward, punishment, reinforcement, immediate feedback, extrinsic motivation, rooted in lab research	Using computer, programmed instruction, personalized – individualized system of instruction, drill and practice	Teacher centered, teacher is the primary source of knowledge, authoritarian, he/ she controls, eliminates behavior, provides stimulus, arranges the environment
COGNITIVISM	Piaget, Bruner, Ausebel	Internal process, adaptation, assimilation, accommodation, spiral curriculum, linking to existing schemata	Discovery learning, expository teaching, concept map, advance organizer, meaningful reception learning	Transmits knowledge to the students, encourages students to discover, help students' to develop their own learning strategies, guide
TASK ANALYSIS	Gagne, Briggs, Bloom	Hierarchical – procedural task analyses, nine events of instruction, eight types of learning, mastery learning, Bloom's taxonomy, CEB, AEC, QI	Hierarchical, procedural, nine events of instruction, systematic, lecture	To reach the desired objectives, concerned with internal and external conditions of learning, facilitator
HUMANISTIC	Rogers, Maslow	Potential of humans, freedom, natural desired to learn, self actualization, relevancy, hierarchy of needs, student-centered, reaction to behaviorism, open education, feelings, emotions, empathy	Based on students' preferences	Facilitator, provider of resources, empathetic
CONSTRUCTIVISM	Piaget, Bruner, Vygotsky, Dewey	Constructing own knowledge, learning by doing, social interaction, motivation, active participation, experience,	Cooperative learning, reasoning, critical thinking, problem solving, discovery learning, discussion, role playing, inquiry learning	Guide – facilitator, open – minded, empathetic, give cognitive support, prepare activities, challenge creativity, encourage, ask open – ended questions
MULTIPLE INTELLIGENCE THEORY	Gardner	Multiple intelligences 7 to 9, intelligences may be developed	Learning centers, variety of methods	Guide – facilitator, open – minded, empathetic, give cognitive support, prepare activities, challenge creativity, encourage, ask open – ended questions

* This framework was developed in EDS 544, Theories of Instruction course.

Appendix 2 Continued

	The role and characteristics of learner	What is learning?	What is teaching?	Evaluation
BEHAVIOURISM	<p>Follower, listens and follows directions, memorization, needs feedback, repetition, accepted as machines</p>	<p>Change in observable behaviors, step by step</p>	<p>Transmission of knowledge through prepared materials, individualized, step by step, drill and practice</p>	<p>Formative – summative evaluation, observable behaviors, criterion-referenced, paper and pencil tests</p>
COGNITIVISM	<p>Passive and active (both), accepted as brain, information processor, problem solver, thinker</p>	<p>Learning is an intellectual growth and development, constructing new ideas, concrete to abstract, active process</p>	<p>Previous experiences, well structured, encouraging thinking, problem solving, critical thinking, extrapolation to fill the gaps, in meaningful environment</p>	<p>Formative – summative evaluation, Concept map, paper and pencil tests</p>
TASK ANALYSIS	<p>Follows the steps, adding new knowledge to the old</p>	<p>Learning is linked to design of instruction and to consideration of different kinds of capabilities, process occurring in phases</p>	<p>Instruction is the central part of the education, pre-designed, divided into parts, prerequisite learning, checking learning in every step, cues, reinforcement, participation, feedback and correctives</p>	<p>Formative – summative evaluation, observable behaviors, criterion-referenced, paper and pencil tests, diagnostic tests, placement evaluation</p>
HUMANISTIC	<p>Accepted as heart and human being, decision maker, responsible for his / her learning, thinker and doer</p>	<p>Learn how to learn, relevancy</p>	<p>Providing the resources for the learner and arranging the environment for the learner, not threatening, enhances creativity</p>	<p>Self evaluation, “alternative assessment”, peer evaluation, progress, process oriented</p>
CONSTRUCTIVISM	<p>Learn by doing, learn new way to learn, responsible for his / her own learning, actively involved in lessons work in groups, socially interactive</p>	<p>Learning is conceptualized, social activity, takes time</p>	<p>Facilitating students’ constructions of their own knowledge by providing rich learning resources</p>	<p>Portfolio, presentation, observations, no standard testing, self evaluation, peer evaluation</p>
MULTIPLE INTELLIGENCE THEORY	<p>Learn through all types of intelligences</p>	<p>Making use of different intelligences</p>	<p>Providing the resources for the learner and arranging the environment for the learner, not threatening, enhances creativity</p>	<p>Portfolio, presentation, observations, no standard testing, self evaluation, peer evaluation, paper and pencil tests, appropriate for the intelligence type</p>

Appendix 3: List of Major Teaching and Learning Theories

- | | |
|---|-------------------------------------|
| 1. | Constructivist Theory (J. Bruner) |
| 2. | Conditions of Learning (R. Gagne) |
| 3. | Connectionism (E. Thorndike) |
| 4. | Elaboration Theory (C. Reigeluth) |
| 5. | Experiential Learning (C. Rogers) |
| 6. | Genetic Epistemology (J. Piaget) |
| 7. | Gestalt Theory (M. Wertheimer) |
| 8. | Multiple Intelligences (H. Gardner) |
| 9. | Operant Conditioning (B.F. Skinner) |
| 10. | Situated Learning (J. Lave) |
| 11. | Social Development (L. Vygotsky) |
| 12. | Social Learning Theory (A. Bandura) |
| 13. | Subsumption Theory (D. Ausubel) |
| <u>Theories specifically suitable for teaching computers:</u> | |
| 14. | GOMS (Card, Moran & Newell) |
| 15. | Minimalism (J. M. Carroll) |
| 16. | Andragogy (M. Knowles) |

Note: You can read description of these theories by clicking on them (including the following sections: overview, scope/application, example, principles, and references). Relationships between theories are identified by highlighted text within articles. These relationships can be connections between specific theories or to concepts that underlie a number of theories (Source: <http://tip.psychology.org>).

Resources for learning and teaching theories:

Major learning theories: http://www.widendoors.net/teaching/learning_theories.html

Major teaching Theories: http://www.widendoors.net/teaching/teaching_theories.html

Explorations in Learning & Instruction: The Theory into Practice Database (TIP) database: <http://tip.psychology.org>

Teaching and learning theories specifically designed and/or suitable for computers as a learning domain: <http://tip.psychology.org/computer.html>

APPENDIX K

SEMI-STRUCTURED INTERVIEW GUIDE

K1 – Version 1 (used during second pilot study)

Öğrenci Görüşme Rehberi

A. GİRİŞ

Görüşülen: _____

Görüşme tarihi: _____ Saat: _____ - _____

Merhaba, BÖTE bölümünde mikroöğretimin etkililiği ve verimliliği üzerine bir araştırma yapıyorum. Sizin de geçen dönem almış olduğunuz Öğretim Yöntemleri II dersindeki bireysel mikroöğretim etkinlikleri hakkında konuşmak istiyorum. Bu görüşmede amacım, dersi alan öğrencilerin mikroöğretim uygulamasının çeşitli boyutları ile ilgili düşüncelerini ortaya çıkarmaktır. Bu dersteki mikroöğretim uygulamalarının etkililiği ve verimliliği konusunda en zengin bilgiyi uygulamayı yaşamış olan öğrencilerden edineceğime inanıyorum. Bu araştırmanın sonuçları, gelecekteki mikroöğretim uygulamalarının niteliğini iyileştirmede önemli katkılarda bulunabilir. Bu nedenle mikroöğretim uygulaması ile ilgili düşüncelerinizi ve beklentilerinizi öğrenmek istiyorum.

Bana görüşme sürecinde söyleyecekleğinizin tümü gizli kalacaktır. Bu bilgileri araştırmacıların dışında bir kimsenin görmesi mümkün değildir. Ayrıca, araştırma sonuçlarını yazarken görüştüğümüz kişilerin isimlerini kesinlikle rapora yansıtmayacağız.

Başlamadan önce bu söylediklerimle ilgili belirtmek istediğiniz bir düşünce ya da sormak istediğiniz bir soru var mı?

Görüşmeyi, izin verirseniz, kaydetmek istiyorum. Bunun sizce bir sakıncası var mı?

Bu görüşmenin yaklaşık bir saat süreceğini tahmin ediyorum. İzin verirseniz sorulara başlamak istiyorum.

B. GÖRÜŞME SORULARI

(RQ 2.1) B1. Mikroöğretime Hazırlık Süreci

Önce mikroöğretim planınızı hazırlama süreciyle ilgili birkaç sorum olacak. Bu derste her öğrencinin mikroöğretim planına iki kez yazılı ve en az bir kez sözlü dönüt vermek amaçlanmıştır.

1. Mikroöğretim planınızın ilk hali ile öğretim görevlisinden yazılı-sözlü dönüt aldıktan sonraki en son hali arasında ne gibi farklar vardı? *(Bu kısımda öğrenci planının ilk hali, 1. ve 2. dönütü almış hali ve planın en son hali basılı olarak öğrenciye verilecek ve bu soruya planları inceledikten sonra yanıt vermesi beklenecek).*
 - a. Hazırlık
 - b. Dersin Genel Amacı, Kazanım ve Hedefler
 - c. Öğretim materyalleri
 - d. Öğrenci Özellikleri
 - e. Zaman Çizelgesi
 - f. Mevcut Bilgi ve beceriler
 - g. Uygulama -Dersin İşlenişi ve Etkinlik(ler)
 - h. Değerlendirme
 - i. Ödev
 - j. Dersi Sonlandırma
2. Dönütlerle mikroöğretim planlama sürecini düşünecek olursanız, bu süreç öğretim planı hazırlamadaki bilgi ve becerilerinize katkı sağladı mı?
 - a. Evet ise → ne yönde ve ne derece katkı sağladı?
 - b. Hayır ise → neden?
3. Sözlü ve yazılı olarak verilen birinci ve ikinci dönütü düşünürsek, dönüt alma sürecinde sorunlar yaşadınız mı?
 - a. Evet ise → ne gibi sıkıntılar yaşadınız? Lütfen açıklayınız?
4. Mikroöğretim kapsamında sunulacak ders planının hazırlanmasında dönüt alma sürecinin kalitesini artırmak için önerileriniz nelerdir?

B2. Mikroöğretim Uygulamaları

Şimdi de mikroöğretimin öğretme becerilerinize katkıları ve mikroöğretiminizde karşılaştığınız güçlükler hakkında bazı sorular soracağım.

(RQ 2.2) B2a. Mikroöğretim Uygulaması

5. Mikroöğretim uygulamanız sırasında öğretme becerileri ile ilgili keşfettiğiniz yeni şeyler oldu mu? Olduysa nelerdi?

Alternatif soru: Mikroöğretim uygulamanız, öğretme bilgi ve becerilerinize ne gibi katkılar sağladı? Örnekler verebilir misiniz?

- a. Bu mikroöğretim tecrübenizden çıkarmış olduğunuz dersler neler?
 - i. Planlamaya yönelik
 - ii. Uygulamaya yönelik
- b. Teorinin pratiğe dönüştürülmesi

- c. Kamera kayıtları ile mekanik dönüt alma
 - d. Öğretim görevlisinden dönüt alma
 - e. Öğrenci rolündeki kişilerden dönüt alma
 - f. Arkadaşlarından dönüt alma
6. Mikroöğretiminde ne gibi güçlüklerle karşılaştınız? Performansınızı etkileyen olumsuz yönler nelerdi?
- a. Yapay ortamda ders anlatma
 - b. Öğrencilerin gerçek öğrenci olmayışı
 - c. Sınıfın mikroöğretim yapılabilecek hale getirilmesi
 - d. Öğretim için araç-gereç temini
 - e. Çekimlerin tekrar izlenebilirlik düzeyi
 - f. Çekim kalitesi (Çözünürlük)
 - g. Mikroöğretimin fazla zaman ve çaba gerektirmesi
 - h. Video kameraya çekim heyecanı
 - i. Süre
 - j. İçerik
 - k. Öğrenci rolündeki katılımcılar ile ilgili sorunlar (sayısı, düzeye inememe)
 - l. Öğrenci rolündekilerin davranışları
 - m. Kullanılan araç-gereç ile ilgili güçlükler
7. Mikroöğretim uygulamasının daha faydalı olabilmesi için sizce mikroöğretimde ne gibi değişiklikler yapılmalı?
- a. Mikroöğretimde süre, öğretim amacı, içerik, araç-gereç, materyal, ortam, öğrenci, çekim gibi faktörlerle ilgili ne gibi değişiklikler yapılabilir?

(RQ 2.3) B2b. Mikroöğretim akran değerlendirmeleri

8. Arkadaşlarınızın hazırlamış olduğu mikroöğretim planlarını değerlendirmek size herhangi bir katkı sağladı mı?

Alternatif soru: Bu derste uygulanan akran değerlendirme sisteminin değerlendirici olarak sizlere herhangi bir katkısı oldu mu?

- a. Evet ise – Ne gibi katkılar sağladı?
- b. Hayır ise – Neden katkı sağlamadı?

9. Arkadaşlarınızın mikroöğretimini değerlendirirken ne gibi sorunlar yaşadınız?
10. Mikroöğretimi izleyici olarak izlemekle değerlendirici olarak izlemek arasında ne gibi bir fark hissettiniz? Sizin için hangisi daha yararlı oldu?
- a. (Eğer görüşülen kişi öğrenci rolünde mikroöğretilere sık sık katkıda bulunmuş biri ise) Mikroöğretime öğrenci rolünde katılmak ile değerlendirici ya da değerlendirme yapmadan izleyici olarak izlemek arasındaki farkları, dersi takip ve size katkı bakımından açıklayabilir misiniz?
11. Uygulama (recitation) saatlerinde diğer grubun sunularını izlemek ve sadece birini değerlendirmekle yükümlüydünüz. Diğer grubun mikroöğretimlerini izlemenin olumlu ve olumsuz yönleri nelerdi?
- a. Size katkıları nelerdi?
 - b. Yaşadığınız güçlükler nelerdi?
12. Gelecek yıl bu ders verilirken akran değerlendirmeleri devam etmeli mi? Yaşadığınız deneyim ışığında ne gibi değişiklikler önerirsiniz?

(RQ 2.4) B2c. Mikroöğretim performansınıza gelen dönütler

13. Akran deęerlendirmelerinin mikroöęretiminize olumlu ya da olumsuz etkileri nelerdi?
 - a. Deęerlendirme formu kullanılması durumunda
 - b. Sadece sözel olarak performansın tartıřılarak deęerlendirilmesi durumunda
14. Mikroöęretiminizin bir form aracılıęıyla deęerlendirilmesi, öęretim planlama ve öęretme becerilerinize ne gibi katkılar saęladı?
 - a. Öęretim görevlisinin/ arařtırma görevlisinin deęerlendirmesi
 - b. Akran deęerlendirmesi
 - c. Deęerlendirmeler sizin için ne derece önemli idi?
 - d. Puanlama ve dönütler ne derece adildi?
15. Öęretim görevlilerinden gelen dönütler ile arkadaşlarınızdan gelen dönütlerin ne derece örtüřtüęünü düşünöyorsanız?
16. Mikroöęretim deęerlendirme süreci nasıl daha iyi hale getirilebilir?
 - a. Deęerlendirme formu kullanılarak
 - b. Deęerlendirme formu kullanılmadan
17. Akran deęerlendirme formunun kalitesini artırmak için önerileriniz nelerdir?
 - a. Sıralaması deęiřmesi gereken maddeler
 - b. Geliřtirilmesi gereken maddeler
 - c. Eklenmesi gereken maddeler
 - d. Silinmesi gereken maddeler

(RQ 2.5) B2d. Mikroöęretim Öz-deęerlendirme raporu

Son birkaç sorum da yazmıř olduęunuz öz-deęerlendirme raporuyla ilgili olacak.

18. Mikroöęretiminizin güçlü ve zayıf yanlarına yönelik aldıęınız dönütlere yanıt vermek (gerekçelendirerek açıklamak) size ne kazandırdı?
19. Beřinci ödevinizde mikroöęretiminizin size göre güçlü ve zayıf üçer yönünü teori ile iliřkilendirdiniz. Bu süreçte karřılařtıęınız zorluklar ve sürecin size katkıları nelerdir?
 - a. Güçlü ve zayıf yönlere karar verme süreci
 - b. Saęlanan teorik çerçevenin kullanımı
20. Öz-deęerlendirme raporunun formatına yönelik önerileriniz nelerdir?
21. Mikroöęretim uygulamasına yönelik eklemek istedięiniz başka görüř, düşünce ve önerileriniz var mı? Açıklayınız.

(R. Q 1.4) B3. Öęretim Planlamasında kullanılan Öz-yansıtıcı araçlar

Son olarak dönem bařında ders planlamada kullanmıř olduęunuz davranıřçı ve oluřturmacı öz-yansıtıcı araçlar konusundaki düşüncelerinizi öęrenmek istiyorum.

22. Öęretim planlamasında IPSRT ve CPSRT öz-yansıtıcı araçları kullanmanın avantajları sizce nelerdir?
23. Bu araçları kullanırken karřılařtıęınız güçlükler neler oldu?
 - a. Anlařılmayan maddeler
 - b. Sıralaması deęiřmesi gereken maddeler
 - c. Geliřtirilmesi gereken maddeler
 - d. Eklenmesi gereken maddeler
 - e. Silinmesi gereken maddeler

Benim sorularım bu kadar. Katkınız için çok teřekkür ederim.

K2 – Version 2 (final version used during the interviews)

A. GİRİŞ

Görüşülen: _____

Görüşme tarihi: _____ Saat: _____ - _____

Merhaba, BÖTE bölümünde mikroöğretimin ve öz-yansıtıcı araçlarının etkililiği ve verimliliği üzerine bir araştırma yapıyorum. Sizin de geçen dönem almış olduğunuz Öğretim Yöntemleri II dersindeki mikroöğretim etkinlikleri hakkında konuşmak istiyorum. Bu görüşmede amacım, dersi alan öğrencilerin mikroöğretim uygulamasının çeşitli boyutları ile ilgili düşüncelerini ortaya çıkarmaktır. Bu dersteki mikroöğretim uygulamalarının etkililiği ve verimliliği konusunda en zengin bilgiyi uygulamayı yaşamış olan öğrencilerden edineceğime inanıyorum. Bu araştırmanın sonuçları, gelecekteki mikroöğretim uygulamalarının niteliğini iyileştirmede önemli katkılarda bulunabilir. Bu nedenle mikroöğretim uygulaması ile ilgili düşüncelerinizi ve beklentilerinizi öğrenmek istiyorum.

Bana görüşme sürecinde söyleyeceklerinizin tümü gizli kalacaktır. Bu bilgileri araştırmacıların dışında bir kimsenin görmesi mümkün değildir. Ayrıca, araştırma sonuçlarını yazarken görüştüğümüz kişilerin isimlerini kesinlikle rapora yansıtmayacağız.

Başlamadan önce bu söylediklerimle ilgili belirtmek istediğiniz bir düşünce ya da sormak istediğiniz bir soru var mı?

Görüşmeyi, izin verirsiniz, kaydetmek istiyorum. Bunun sizce bir sakıncası var mı?

Bu görüşmenin yaklaşık bir saat süreceğini tahmin ediyorum. İzin verirsiniz sorulara başlamak istiyorum.

B. GÖRÜŞME SORULARI

(RQ 2.1) B1. Mikroöğretime Hazırlık Süreci

Önce mikroöğretim planınızı hazırlama süreciyle ilgili birkaç sorum olacak. Bu derste her öğrencinin mikroöğretim planına iki kez yazılı ve en az bir kez sözlü dönüt vermek amaçlanmıştı.

1. Mikroöğretim planınızın ilk hali ile öğretim görevlisinden yazılı-sözlü dönüt aldıktan sonraki en son hali arasında ne gibi farklar vardı? (Bu kısımda görüşülen öğrencinin öz-değerlendirme raporu basılı olarak öğrenciye verilecek ve bu soruyaraporu inceledikten sonra yanıt vermesi beklenecek).
 - a. Hazırlık
 - b. Dersin Genel Amacı, Kazanım ve Hedefler

- c. Öğretim materyalleri
 - d. Öğrenci özellikleri
 - e. Zaman çizelgesi
 - f. Mevcut Bilgi ve beceriler
 - g. Uygulama -Dersin İşlenişi ve Etkinlik(ler)
 - h. Değerlendirme
 - i. Ödev
 - j. Dersi Sonlandırma
2. Dönütlerle mikroöğretim planlama sürecini düşünecek olursanız, bu süreç genel olarak öğretim planı hazırlamadaki bilgi ve becerilerinize katkı sağladı mı?
 - a. Evet ise → ne yönde ve ne derece katkı sağladı?
 - b. Hayır ise → neden?
 3. Sözlü ve yazılı olarak verilen birinci ve ikinci dönütü düşünürsek, dönüt alma sürecinde sorunlar yaşadınız mı?
 - a. Evet ise → ne gibi sıkıntılar yaşadınız? Lütfen açıklayınız?
 - b. Mikroöğretimin fazla zaman ve çaba gerektirmesi
 4. Grup arkadaşlarınızla plan hazırlığı aşamasında nasıl bir çalışma yaptınız? Sunular bireysel olduğu halde grupların belirlenmesinin olumlu ya da olumsuz yönleri nelerdi?
 5. Mikroöğretim kapsamında sunulacak ders planının hazırlanmasında dönüt alma sürecinin kalitesini artırmak için önerileriniz nelerdir?

B2. Mikroöğretim Uygulamaları

Şimdi de mikroöğretimin öğretme becerilerinize katkıları ve mikroöğretiminizde karşılaştığınız güçlükler hakkında bazı sorular soracağım.

(RQ. 2.2) B2a. Mikroöğretim Uygulaması

6. Mikroöğretim uygulamanız sırasında öğretme becerileri ile ilgili keşfettiğiniz, farkettiğiniz yeni şeyler oldu mu? Olduysa nelerdi?

Alternatif soru: Mikroöğretim uygulamanız, öğretme bilgi ve becerilerinize ne gibi katkılar sağladı? Örnekler verebilir misiniz?

- a. Bu mikroöğretim tecrübenizden çıkarmış olduğunuz dersler neler?
 - iii. Planlamaya yönelik
 - iv. Uygulamaya yönelik
 - b. Teorinin pratiğe dönüştürülmesine faydaları nelerdi?
 - c. Kamera kayıtları ile mekanik dönüt almanın faydaları nelerdi?
7. Mikroöğretiminizde ne gibi güçlüklerle karşılaştınız? Performansınızı etkileyen olumsuz yönler nelerdi?
 - a. Yapay ortamda ders anlatma
 - b. Öğrencilerin gerçek öğrenci olmayışı
 - c. Sınıfın mikroöğretim yapılabilecek hale getirilmesi
 - d. Öğretim için araç-gereç temini
 - e. Video kameraya çekim heyecanı
 - f. Süre
 - g. Öğrenci rolündeki katılımcılar ile ilgili sorunlar (sayısı, düzeye inememe)
 - h. Kullanılan araç-gereç ile ilgili güçlükler
 - i. Arkadaşlarınızın ve hocaların sizi izlerken form aracılığıyla değerlendirmesi

8. Mikroöğretimde işlenecek konunun Bilgisayar dersi 1-8 programından seçilmesi hakkında ne düşünüyorsunuz?
 - a. İçeriğin bilgisayar konusunda mı yoksa başka bir konudan seçilmesini mi tercih ederdiniz?
9. Mikroöğretim uygulamasının daha faydalı olabilmesi için sizce mikroöğretimde ne gibi değişiklikler yapılmalı?
 - a. Süre, öğretim amacı, içerik, araç-gereç, materyal, ortam, öğrenci, çekim gibi faktörlerle ilgili değişiklikler

(R.Q 2.3) **B2b. Mikroöğretim Akran Değerlendirmeleri**

10. Arkadaşlarının mikroöğretimini değerlendirirken akran değerlendirme formunu nasıl bir strateji izleyerek doldurdunuz?
11. Arkadaşlarınızın sunmuş olduğu mikroöğretimi değerlendirmek size herhangi bir katkı sağladı mı?

Alternatif soru: Bu derste uygulanan akran değerlendirme sisteminin değerlendirici olarak sizlere herhangi bir katkısı oldu mu?

- a. Evet ise – Ne gibi katkılar sağladı?
 - b. Hayır ise – Neden katkı sağlamadı?
12. Arkadaşlarınızın mikroöğretimini değerlendirirken ne gibi sorunlar yaşadınız?
 - a. Değerlendirme formuna yönelik eleştiri ve öneriler
 13. Akran değerlendirme formunun kalitesini artırmak için önerileriniz nelerdir?
 - a. Sıralaması değişmesi gereken maddeler
 - b. Geliştirilmesi gereken maddeler
 - c. Eklenmesi gereken maddeler
 - d. Silinmesi gereken maddeler
 14. Mikroöğretimi izleyici olarak izlemekle değerlendirici olarak izlemek arasında dersi takip ve size katkı bakımından ne gibi bir fark hissettiniz?
 - a. Sizin için hangisi daha yararlı oldu?
 - b. (Eğer görüşülen kişi öğrenci rolünde mikroöğretilere sık sık katkıda bulunmuş biri ise) Mikroöğretime öğrenci rolünde katılmak ile değerlendirici ya da değerlendirme yapmadan izleyici olarak izlemek arasındaki farkları, açıklayabilir misiniz?
 15. Uygulama (recitation) saatlerinde diğer grubun sunularını izlemek ve sadece birini değerlendirmekle yükümlüydünüz. Diğer grubun mikroöğretimlerini izlemenin olumlu ve olumsuz yönleri nelerdi?
 - a. Size katkıları nelerdi?
 - b. Yaşadığınız güçlükler nelerdi?
 - v. Çekim kalitesi (Çözünürlük), Çekimlerin tekrar izlenebilirlik düzeyi
 16. Gelecek yıl bu ders verilirken akran değerlendirmeleri devam etmeli mi? Yaşadığımız deneyim ışığında ne gibi değişiklikler önerirsiniz?

(R.Q 2.4) **B2c. Mikroöğretim Performansınıza Gelen Dönütler**

17. Mikroöğretiminizin bir form aracılığıyla değerlendirilmesi öğretim planlama ve öğretme becerilerinize ne gibi katkılar sağladı?
 - a. Akran değerlendirmesini nasıl buldunuz?

- b. Öğretim görevlisinin/ araştırma görevlisinin değerlendirmesini nasıl buldunuz?
 - c. Puanlama ve dönütler ne derece adildi?
 - d. Değerlendirmeler sizin için ne derece önemli idi?
18. Öğretim görevlilerinden gelen dönütler ile arkadaşlarınızdan gelen dönütlerin ne derece örtüştüğünü düşünüyorsunuz?
19. Mikroöğretim değerlendirme süreci nasıl daha iyi hale getirilebilir?
- a. Değerlendirme formu kullanılarak yazılı değerlendirmeyi mi değerlendirme formu kullanılmadan sözel olarak performansın tartışılarak değerlendirmesini mi tercih ederdiniz?
 - b. Bu süreçte eksikliğini hissettiğiniz bir uygulama var mı?

(R. Q. 2.5) B2d. Mikroöğretim Öz-Değerlendirme Raporu

Yazmış olduğunuz öz-değerlendirme raporuyla ilgili birkaç sorum var.

20. Mikroöğretiminizin güçlü ve zayıf yanlarına yönelik aldığımız dönütleri incelemek ve yanıt vermek (gerekçelendirerek açıklamak) size neler kazandırdı?
21. Beşinci ödevinizde mikroöğretiminizin size göre güçlü ve zayıf üçer yönünü teori ile ilişkilendirdiniz. Bu süreçte karşılaştığımız zorluklar ve sürecin size katkıları nelerdir?
- a. Güçlü ve zayıf yönler nasıl karar verdiniz? (Değerlendirme formları, videoyu tekrar izleme)
 - b. Sağlanan teorik çerçevenin kullanımı ile uygulamanızın teori ile ilişkilendirilmesi
22. Öz-değerlendirme raporunun formatına yönelik düşünce ve önerileriniz nelerdir?

(RQ 1.4) B3. Öğretim Planlamada Kullanılan Öz-Yansıtıcı Araçlar

Son olarak dönem başında ders planlamada kullanmış olduğunuz davranışçı ve oluşturmacı öz-yansıtıcı araçlar konusundaki düşüncelerinizi öğrenmek istiyorum.

23. IPSRT ve CPSRT öz-yansıtıcı araçları kullanılarak ders planı hazırlamanın avantajları sizce nelerdir?
24. Bu araçları kullanırken karşılaştığımız güçlükler neler oldu?
- a. Anlaşılmayan maddeler
 - b. Sıralaması değişmesi gereken maddeler
 - c. Geliştirilmesi gereken maddeler
 - d. Eklenmesi gereken maddeler
 - e. Silinmesi gereken maddeler
25. (RQ 3) (*Staja hazırlık için bu dersin materyalleri kullandığınızı/kullanacağını bahseden öğrencilere*) Bu derste gördüğün hangi aracı kullanarak stajına hazırladın/hazırlanmayı düşünüyorsun? Neden?
26. Mikroöğretim uygulamalarına ve öz-yansıtıcı araçlara yönelik eklemek istediğiniz başka görüş, düşünce ve önerileriniz var mı?

Benim sorularım bu kadar. Katkınız için çok teşekkür ederim.

APPENDIX L

LONG QUOTATIONS IN ORIGINAL FORM

(The text written in italics were converted to English mostly word-by-word and presented in Chapter 4 as illustrator, evidence or example of major findings)

- [1] [İlk öz-yeterlik puanı: 90 – CPSRT sonrası öz-yeterlik puanı: 90 – IPSRT sonrası öz-yeterlik puanı: 95.] *Daha rahat hissettim yani derste uyguluyorsam, hazırlayabiliyorsam, bundan sonra hep hazırlarım diye düşünüyorum. Hiç yapmasaydım, 90'la başladım, belki 85'e 80 lere bile düşebilirdi yani daha az güvenirdim kendime oysa yaptıkça alıştıkça daha az korktum. Yeteri kadar [plan] yaptığımızı düşünüyorum ve bu sizi güvendiriyor, kendinize güveniyorsunuz. Artık ben yapabilirim, ders planı da yaparım sunumu da yaparım dersi de anlatırım, problem çıksa a onunla da başederim. Herşeyi ağır ağır öğreniyorsunuz. (S10)*
- [2] [İlk öz-yeterlik puanı: 35 – IPSRT sonrası öz-yeterlik puanı: 95 – CPSRT sonrası öz-yeterlik puanı: 85.] *Şimdi, elimizde bir tool olduğu için ve toolda net bölümler var, o bölümlere bakarak, işte ondan sonra bir pratik yaparak- bir iki tane plan hazırladıktan sonra artık "Ha plan böyle hazırlanıyormuş, çok da zor değil aslında." Instructionalist toolu, instructional planning kullandığımız zaman ve her şey net, instructiona dayalı olduğu için çok rahat ve net derse göre konuya göre düzenliyorsunuz, hiçbir sorun yaşamıyorsunuz. Onun için de kendime güven arttı, gerçekten çok kolaymış. Düşüş neden yaşandı, Constructivist plana geldiğiniz zaman, o zaman biraz aktiviteye dayalı olduğu için böyle oturup hop diye plan yazamazsınız. Çünkü bunu bir düşünüp karar verip aktiviteyi karar verip, onun vermili verimsiz olduğunu gözden geçirdikten sonra yazabiliyorsunuz. O becerinizin de olması lazım. Onun için de öyle oturduğunuz zaman 100% plan yapamayacağımı gördüm. Ama sonuçta buna [aktiviteye] karar verdiğim zaman çok rahat hazırlanabileceğini düşündüm ve onun için biraz düşüş yaşandı. IPSRT'ye göre daha kolay hazırlanıyor planlar çünkü direct instructiona biraz yakın. (S48)*
- [3] [İlk öz-yeterlik puanı: 70- CPSRT sonrası öz-yeterlik puanı: 75- IPSRT sonrası öz-yeterlik puanı: 75.] *Şu an deseniz 90 yazarım. Niye çünkü uygulamalar yaptım yani, teoride kalmıştı bazı şeyler, şimdi arkasını doldurdum yani. Bir de şuanki aklımla bana verseniz ilk anketi, onu 70 yazmazdım yani, kesin 55-60 gibi bir şeyler yazardım, çünkü ben o zaman tabiri caizse bu noktalarda cahil olduğum için hani cahil cesur olur, kimi çok iyi bilir- bilmiyordum yani ne kadar bildiğimi bilmiyordum, Onun için 70 yazdım. Ve ondan sonra arkasını doldurmak için ne kadar öğrendiğimi de fark etmemiştim yani. Bak şimdi görüyorum yani uygulama- "ha aslında ben iyi öğrenmişim falan diyorum. Şu an olsaydı 60 la 90 yazardım, çünkü o zaman planlama hakkında çok cahildim..... Daha önce planlamayı öğrenmemiştim. O 70'i yazdığım zaman da bilmemenin verdiği bir şey yani. Bilmiyor ama bildiğini sanıyor.....şimdi daha iyi anlıyorum. (S12).*
- [4] *Ben çok yaralı olduğumu düşünüyorum.Çünkü tamam hani ben biliyordum direct instructionın ne olduğunu biliyordum, constructivist learningin ne olduğunu biliyordum ama bunlarla ilgili plan hazırlamanın farkını bilmiyordun mesela. Yani ben belki Constructivist- tamam constructivist learningde discovery olacak bilmem ne olacak ama ben belki de orda direct instruction koyacağım planıma. Nasıl diyeyim, çok da belki yalıt bir şey yapacağım orda farkında olmadan. Hani ben böyle [toollarla] iki tane örnek plan görmek benim çok işime yaradı kendi açımdan. Hani constructivistte ben öğrencilere biraz daha esneklik sağlamalıyım, onlar biraz daha şöyle*

olmalı falan gibi hani burdaki planda öyle bir şey var. Hani kendi planlarımda da constructivist yaparken buna dikkat edeceğim. Ama işte Instructional Planning self-reflective toola bakarken, burda kendimi yargımlarken de şeye bakacağım yani bir süreç gitmeli, herşey daha önceki öğrendikleriyle oturacak şekilde bir instruction olmalı....yani hani dediğim gibi tanımların ne olduğunu biliyorduk ama bunun uygulamasını görmemiştik. Bunun çok faydası oldu bence. (S44).

- [5] Daha düzenli bir tool olduğu için [plan] yapmak daha kolay oluyor. Hazırlamak daha kolay oluyor. *En azından net fikirler veriyor size, neyin olup neyin olmadığını görebiliyorsunuz ve ona göre sistematik bir şekilde planınızı kurabiliyorsunuz yani.* Sanırım burda zaman ayarı dışında herşey var yani. Kaç dakika... o serbest bırakılmıştı. *Onun dışında burda gördüğüm kadarıyla herşey net bir şekilde yazılmış, seni düşündürüp ya da zora sokacağı bir kısmı olmadığı için, sistematik bir şekilde olduğu için en azından, tool... plan tool olduğu için çok rahat.* Yardımcı oluyor yani. Böyle bir toola ben açıkcası, elimin altında olduğu için, her öğretmenin elinin altında olması gereken toolardan biridir. *Çünkü, elimin altında olduğu için direkt bakıp yazabiliyorsun planı, yoksa kafadan yapmak tecrübe ister.* (S48)
- [6] [planlama şablonu olarak] ben bu kadar ayrıntılısını görmedim. *Her zaman için ben ne yazacağım fikri bende takılı kaldı.* O yüzden, *şu IPSRT’de fazlasıyla ayrıntı var.* O yüzden çok rahat ediyorsun. *Şimdi rapor yazıyoruz filan ya böyle instructional goal de, tamam onu hallettik artık çözdük, ondan sonrasını ne yazacağım nelerden geçeceğim edeceğim bunlar sıkıntı oluyordu..... Benim [şimdiye kadar] en önem vererek, en ciddi şekilde yaptığım [ders planları] buydu herhalde ve çok şey de öğrendim. Şu anda çok rahat [ders planı] yapabilirim bunun üzerine.*(S28)
- [7] *Siz zaten o bizim yazdığımız diğer planlara da feedback vermiştiniz. Onların da faydası oldu.* Hatta ben son yaptığım ödevi çok kısa bir zamanda yapmışım öyle hatırlıyorum..... *Burda stepleri inceliyoruz, hatta siz inceliyordunuz. Biz ilk yaptığımızda çok da steplerini belki bilemiyorduk. “Şunu şu şekilde daha iyi belirtebilirsin”, “bunu bu şekilde daha iyi belirtebilirsin”. Ve bizim raporumuz tamen çizikti [feedback alınmış halinden sözediyor], ben öyle hatırlıyorum. [planlamanın] Herşeyini kapsadı. Birçok şeyde mesela geçiştiriyorduk plan yazarken hani orda mesela öğrenciler ne yapacak? Öğretmen şunu yapıyor ama öğrenciler ne yapacak? Şunu ben yaptım mı işte herşey burda içerildi mi anlatıldı mı, şurda şunlar oldu mu diye tek tek bakıp planımızı o şekilde yapıyorduk. O da bayağı bir kapsamlı oluyordu.* (S44)
- [8] *IPSRT bence daha güzel de onun için bunun üstünden gidiyorum. Önce amacını yazıyoruz, ondan sonra objektifleri yazıyoruz..... ondan sonra materyalleri yazıyoruz, kaçınıcı levelda oldukların yazıyoruz. Herşeyi nasıl yapacağımızı, proseduru tek tek yazınca zaten herşey ortaya çıkıyor burdaki objektiflerle goalleri alıp burda proseduru yazmaya başlayınca herşey ortaya çıkıyor, en sonunda zaten herşey tertemiz ortaya oluyor: ders böyle gidecek, böyle başlayacak, böyle devam edecek, çocuklar bunlardır, bunları yapacağız, dersi de böyle bitireceğiz diye. Bu gayet işe yarıyor hocam. Yani IPSRT’de objektiflerle gidişatı yazdığımız için daha rahat oluyor. IPSRT daha iyi bence kesinlikle.* (S27)
- [9] *Kesinlikle IPSRT çok faydalı. Basamak basamak ne yapabileceğimi, herşeyi görebilmek yani. Ders ortamına geçince hangi basamaklardan geçeceğini önceden bilersen daha rahat ediyorsun ya, burda da hepsini vermiş zaten özellikle vermiş.* Burda [CPSRT]da var ama bu kadar ayrıntılı değil, bütün halinde görüyoruz. O yüzden bu toolun [IPSRT]nin daha faydalı olabileceğini düşünüyorum. (S28)
- [10] *Ama constructivist i tanıdıktan sonra constructivist in daha kolay olduğunu gördüm yani..... hazırlama bakımından constructivist daha kolay, çünkü bunun (ipsrt) eski klasik bir yapısı var. Onun biraz daha şey, yani structured, instructional goal objective’leri, materyalleri falan vermek zorundasın ama, constructiviste şey yani, direkt aktivite, aktiviteyi yani anlatmak zorunda değilsin. Mesela, material preparation yazdığımız şey bilgisayarda bizde. Yani, materyalimiz, kullanacağımız materyalimiz, bilgisayar, tepegöz onlar zaten olması gerekiyor bizim eğitimimizde. Fakat hani, o şey constructivist kısımda o şey direkt atlanıyor, yani o kısımlar gereksiz. Yani, o kısımlara [materyal listesi, objektif vb.] çok fazla önem verilmiyor. Hani, learning activiten başlıyor, role of students, role of teacher o şekilde devam ediyor. En sonunda*

assessment var, ya bu daha mantıklı ve daha işe odaklı, bunda (IPSRT) sadece şeye odaklı belli bir structure var, bunu sanki ne diyim, sanki bunu dosyaya koyacaksın alıp dosyaya koymak için, ama bu[CPSRT] aktivite yapmak için gibi yani. (S21)

- [11] Karşılaştığım zorluk, eee, constructivist şeydi, yabancı geldi, yani ilk başta. Hep şu IPSRT ye alıştığımız için, hani instruction goal'ı yazıyorsun, sonra objective'i yazıyorsun, materyali yazıyorsun, karakteristik'si yazıyorsun ondan sonra procedure'ü yazdığımız için sonra da assessmentı yazdığımız için bu tanıdıktı. Bunu yapmak kolaydı. Hani, ilk başta bunun yabancı olması biraz zordu. Hani, direkt aktivite mi başlayacak, hani böyle soruları hep sormuştuk size, direkt aktivite mi yazıyoruz evet direkt şey yazıyoruz, başka bir şey yok.(S21)
- [12] CPSRT biraz havada kalıyor gibi geliyor bana. Öğrencinin rolü, öğretmenin rolü... İlk şu ödevleri [planları] yaparken de "ya bu neymiş" demiştim.....Yani bunlara gerek yok gibi geliyor: Öğrencinin rolü nedir öğretmenin rolü nedir, bunlar biraz... yani bilmiyorum gerek var mı yok mu profesyonel olarak öğretmenlik yapmadığım için..... Öğrencinin ne olduğunu böyle, "learner characteristics" onu tam olarak bildikten sonra, bu procedure'u rahatlıkla yazabiliriz gibime geliyor, objektifleri ve goalleri de aldıktan sonra. Tek lazım olan learner characteristic bence. Ama tabii tam öğretmenlik yapmadığım için ne lazım olur, meslek hayatına atıldıktan sonra göreceğiz bunları. (S27)
- [13] Hep bunu verelim olmaz, hep şunu verelim o da olmaz. Ama bizim bölüme anladığım kadarıyla CPSRT biraz daha iyi gidiyor, çünkü bilgisayar, activity-based, CPSRT hep activity based. IPSRT ise daha öğretmen-merkezli daha ondan sonra motivasyon, helping students gibi işte informing them, daha böyle öğretmenin bilmesi gereken şeyler var, diğerinde ise aktivitenin kendisinin içermesi gereken şeylere daha çok önem verilmiş. E tabii biz mesela ilk defa bir konuyu ben mesela Exceli ilk öğretiyorum formulu, burda IPSRT kullanmam şart. Yani en azından dersin hepsinde olmasa da başlarında ortalarında bunu kullanmam şart.....hep onlara ben öğrettim, bazen tamam sordum cevap aldım ama onlara bir yere kadar öğretmek zorundayım. Yüzmesini bilmiyorsa atsak suya boğulur yani. Biraz birşeyler öğrettikten sonra farklı teknikleri kendisinin keşfetmesini bekleyebiliriz. Ha gelecek hafta yapacağımızdaysa aktivite tabanlı olacak, çünkü artık öğrendiler formulleri onlara alıştırma çözdüreceğim, CPSRT olmalı. zaten bilgisayar da buna çok uygun bir alan, bizim alanımız. Böyle bir farkı var. Biri diğeri olmadan olmaz. Birbirini tamamlıyor, önce IPSRT gelmek zorunda, bu çok doğal, sonra aktivitelerimizde CPSRT kullanıp zenginleştirebiliriz. (S12)
- [14] Biz mesela açıkçası ilk planı hazırlarken hani bu daha bizim derslerimizde ilk kez yaptığımız bir şey, daha önce grup olarak ders anlatımı yapmıştık ama bu mikroteaching, tek başına herkesin ders anlatılması ilk kez sizin dersinizde oldu. Bununla da ilgili bizim bir bilgimiz de yoktu açıkçası. Dolayısıyla biz hani planlama sürecinde nerden başlanır, nasıl bu process devam edilir biz bunu bilmiyorduk. Hani mesela daha dersin girişini planlamadan sonunda şöyle de bir şey yapalım falan gibi hani yapabiliyorduk. Şöyle, bu güzel olur true false koyalım değerlendirmede falan. Hani halbuki önce anlatımını yapacaksın, aktiviyelerini kullanacaksın ondan sonra o aktivelere uygun nasıl bir değerlendirme olur? Bunu önce, yani hani sırayla hesaplamamız gerekirken bunu bilmiyorduk. Açıp sıradan bir Word sayfasına resim eklemek yerine bir concept verip böyle bir şey hazırlayacağız, ya da mesela davetiye hazırlayacağız gibi, "23 Nisanda kutlamalara davetiye hazırlayacağız hadi resim ekleyelim". O zaman hani çocuklar gerçekten uğraşarak yapıyor. Biz bunun farkını bilmiyorduk. [Önceden] Açalım ordan resim ekleyelim diye sıradan böyle anlatıorduk.(S44)
- [15] Sürekli bir feedback süreci olması çok güzel zaten. Çünkü hakikaten bu döneme kadar birşeyler yapıyoruz, ders planları hazırlıyoruz ama çok structured bir yapıya sahip oluyor. İşte bi tablo... tablonun içinde objektifler, kazanımlar, şunlar, şunlar şunlardır... Onları matematiksel şey gibi, bir tane kazanım yazacaksınız sadece işte ikinci bir beceriyi sağlamayacaksınız, bunlar subject mattera uygun olacak. Aktivite, ondan sonra. Ama bu aktivitede nelere dikkat edilecek? yani bu kadar ayrıntılı bir şey yapmamıştık. (S41)
- [16] Evet katkı sağladı. Çünkü ben orda değerlendirmede kendimi çok kısıtlı hissettim. Nasıl değerlendirme yapabilirim de ben onu mikroteachingde nasıl "ben burda değerlendirme yaptım diye gösterebilirim" in kaygısını taşıırken mecburen somut birşeylere yöneldim, garanti etmek

için. Ama sonradan soru-cevap yöntemiyle de bunun hoşgörülebileceğini ifade edince siz daha rahatladım, [planda değerlendirmeyi] o şekilde yaptım sonradan. (S41)

- [17] *Planlama sürecini öğrendik ya biz, o süreci öğrendiğimiz için hani bana bir gün de verseniz yine aynı süreçten geçeceğim ben zihnimde, 10 dakika da verseniz yine aynı şeyleri düşüneceğim. Yani ben yine, öğrencilerin dikkatini çekmeyi düşüneceğim, işte derse motive etmeyi düşüneceğim, ne bileyim, verdiğim örneklerin onların seviyesine uygun olup olmayacağını düşüneceğim, hani bunların hepsi aklımda artık yer etti. Onarı kullanmak için hemen birşeyler uyduruyorum. (S43)*
- [18] *Genel anlamda birkaç sayfalık bir fark vardı ☺. İlk başta getirdiğimiz... yanlış hatırlamıyorsam bayağı dar bir plandı. Yani nerde ne kullanacağımız ne yapacağımız falan belli değildi. İkincide öğrencilere hangi cümleler kullanacağımız, neler söyleyeceğimiz nasıl başlayacağımız nasıl bitireceğimiz hepsi açık açık yazıyordu, neyin kaç dakika süreceği falan yazıyordu. İlkinde yazmıyordu.(S27)*
- [19] *Bu ayrıntılandırma bir katkı sağladı, evet, ben öğretmenliği pek becerebilen biri değilim ama, mesela ne yapacağımız belli olmuyor ilk başta elinizde bir template olmadan, template olunca neleri yapacağımız yazıyor, yazdıkça aklınıza geliyor, dönüt aldıkça daha da düzeltiyorsunuz, daha da güzel oluyor. Herşeyi en ince ayrıntısına kadar derse başlamadan önce yapılmış oluyor. (S27)*
- [20] *Sizin çalışmanızı gördükten sonra [bu dersi] ciddiye aldım. Çünkü gerçekten sistematik. Toolları yapıyorsunuz, haftalık denetliyorsunuz. O kadar kişi, 50 küsur kişinin feedbacklerini yetiştirmeye çalışıyorsunuz. Sizden o çabayı gördükten sonra ben de bu dersi sallamaya açıkcası cüret edemedim. Onun için yani bayağı bi.. Ben bir kişilik iş yapıyorum siz kırk kişilik iş yapıyorsunuz yani o açıdan ciddiye aldım. Çünkü diğer derslerde de mesela var, grup yapılıyor. Hoca diyor işte “sizin projeniz var, ne zaman başlarsanız başlayın”. Sistematik bir şey yok anlıyor musunuz? Yani bize bırakılmış tamamen. Bir işi de öğrenciye bırakırsan en son haftaya kaydırır öğrenci bunu, ondan sonra sıkışır, hem hocaya sorun olur hem öğrenciye sorun olur. Sistemli olmadığı için sıkıştırma görülüyor diğer derslerde ama bu derste gerçekten sistematik gittiği için özellikle, böyle düşününüz zaman, iş bölündü, zaman böyle azar azar, kolay yaparsınız ve verimli olur, daha fazla şey öğrenirsiniz. Onun için de gerçekten kutluyorum sizi, çünkü çok iyi bir iş, başarılı bir iş çıkardınız. Daha önce öyle bir çalışma görmedim ben öğrencilik hayatımda. (S48)*
- [21] *Kesinlikle katkısı oldu. Direkt sizinle olan sözlü dönütleriniz aklıma geliyor, hani yazılıdan daha çok. Çünkü benim hatırlarsanız seçtiğim konuda yapacağım aktiviteden çok korkuyordum hani yapabilir miyim yapamaz mıyım diye. Hani o süreçte neler yapmam gerektiğini nasıl yapmam gerektiğini çok iyi anlattınız. “Böyle olsa daha iyi olur”, “şu şekilde olursa daha iyi olur” gibisinden. Yani sizin onayınızı aldıktan sonra onu yapabileceğimi hissettim açıkcası. O yüzden benim için çok faydalı olduğunu düşünüyorum. (S43)*
- [22] *Ben yaşamadım ama siz yaşamış olabilirsiniz ☺ Dönütlerimiz çok uzun sürüyordu. Çok büyük bir emek sarfediyordunuz siz herkese. Çok fazla zaman ve çaba gerektiriyordu. Biz de çok ayrıntılı bir şekilde yazmaya çalışıyorduk hani, diyelim ki öğrenciyi çok spesifik bir hale getirdiğimiz için onların özelliklerini belirlerken çok fazla literatür araştırması yapıyorduk mesela. Yine bu mikroöğretim planlarını seçerken hani uygulamalarını nasıl olur diye örnekler aradım bayağı bir çok hani daha farklı daha etkili nasıl bi uygulama yapabilirim, nasıl bunu kullanabilirim diye. Yani gerçekten biz de çaba gösteriyoruz. Mesela o kitabı[Actice Learning Strategies kitabı] iki kere falan okuduğumu hatırlıyorum ben, benim dersim için hangisi [aktif öğrenme stratejisi] daha uygun olur diye. (S43)*
- [23] *Bir kere her ikisinin de olması gerekiyor bence. Ben hatırlıyorum halen daha, geliyordum, sizinle aktiviteyi taşışıyordum yani, hani bunu konuşmadan yapamazsınız. Ya da MSN’de konuşacaksınız, birinden biri. Çünkü karşılıklı bir konuşma gerekiyor yani o konuda. Ben yazdığım bir raporu verdiğimde tamam şurayı şurayı düzelt diye siz bana dönüt verebiliyorsunuz ama ben hani daha aktif bir şey için konuşacaksam, hani bunu gelip konuşmak çok daha mantıklı, çünkü karşılıklı hani, “aa şöyle olsun”, “bak bu da olur” falan diye hani yeni fikirler çıkabiliyor. Gelip konuşmak bazı konularda daha iyi, hani rapor veya ders planı gibi şeylerde de*

bilgisayar üzerinden olması, maille falan da iyi. Yazılı şeyler üzerinde yazılı feedback çok daha iyi oluyor hani uçmuyor. (S46)

[24] *O 20 dakikalık sürede çok şeyi keşfettim. Öncelikle zaman denen şeyin su gibi akıp geçtiğini farkettim. Çünkü kazanımım çok geniş bir kazanımdı. Ben onun hepsini vermeye çalıştım bu 20 dakika içinde nelki 40 dakika da olsa veremeyecektim. Onun için kazanımı parçalamam gerektiğini öğrendim. İkincisi öğrencilerle göz temasının ne kadar gerekli olduğunu öğrendim çünkü bilgisayar dersi, öğrencilerin hemen ilgisi dağılabiliyor, hem bilgisayar dönebiliyor, benim söyleyeceğim şeyler kesinlikle havada kalabiliyor çünkü direkt o monitor kişiyi hipnoz edebilecek bir alet. Onu öğredim. Üçüncüsü, değerlendirme stratejisinin çok kritik olduğunu öğrendim. Çünkü öğrencilere “Anladınız mı?” deyince hep bir ağızdan “anladık” bir ağızdan diyorlar. Anlamamış olabilirler? Ya da ne kadar anladılar. Biz tek cümlede herşeyi tek kalemde bitiriyoruz. Onun için değerlendirmenin çok önemli olduğunu öğrendim. Dördüncüsü, verilecek örnekler kesinlikle [günlük] hayattan olmalı. Ben o zaman dördüncü sınıf öğrenilerini hedef öğrenci seçmiştim. Dördüncü sınıflara verilebilecek en güzel örneklerin ailesinden, okulundan, yolda yürürken karşılaştığı şeylerden verilecek örneklerdir. Son bir şey daha, kafamda herşeyi, planımda yaptığım herşeyi derste işlemek çok zor. Kafamda şunu şöyle yaparsam çok güzel olacak dediğim çok şeyleri insan unutabiliyor. Arkadaşlarımdan duydum çoğu unuttu, “ya unuttuk istediğimizi yapamadık” diye. Küçük küçük kartlar hazırladım kendime onu kullandım ve bunu kullanmakta hiçbir sıkıntı çekmedim. Hatta öğrencilerimden bir soru gelse diye önceden hazırladığım bir espirim bile vardı onları rahatlatmak için. Hiç çekenmeden. Çünkü maksadım orda öğretmekse... gerekirse öğretmen soytarı bile olur, o çocuğa bir şey öğretmek için. Ben de onu göze almıştım.....Bir de sahne korusu... herkesde var, sesimin titremesi, herkesde var. Orda onu yaşadım. O benim için bir tecrübe oldu biraz korkumu attım yani güzel oldu. (S12)*

[25] *Ya, arkadaşlarımdan verdiği feedback'te vardı. Orada hani tamamen doğaçlama bir şeydi, mesela Sevgi'nin o rahatsızlanması, yani onu hiç unutmuyorum, o çok büyük bir deneyimdi benim için, hani gözümün önünde rahatsızlandı, gözleri gözleri doldu, öksüremedi, beni rahatsız olmasını diye belki... çıkmasını istedim, gidip yüzünü yıkamasını istedim, hani evet olabilir, gerçek yaşamda bu çok rahat bir şekilde karşılaşılabılır, bu çok büyük bir deneyimdi. En büyük artı o, öğretmenlikte eğitimlikte doğaçlama olmalı, yani ne kadar hazırlanırsanız hazırlanın, ne kadar mükemmel bir plan yaparsanız yapın, doğaçlama olmalı yani. Onu öğrendim. (S21)*

[26] *Planlamaya yönelik birkaç belki B seçeneklerimiz filan olaabilir diye düşünüyorum. Çünkü biz karşıdaki arkadaşlarımızla danışıklı dövüş yaptık orda oynadık ama çocuklar çok farklı birşeyler söyleyebiliyorlar. Bazen çocuklar çok sıkılabiliyorlar altivite yaparlarken özellikle bilgisayar derslerinde ve kesinlikle bir ekstra B planı olması gerekiyor onlara vereceğimiz ekstra görevler olması gerekiyor. Yeni aktiviteler filan olması gerekiyor. Benim planlamada gerçek hayata uygulama aşamasında bunlara daha fazla dikkat edilmesi gerektiğini düşünüyorum. Onun dışında yeterli aslında, genel anlamda, planlama ve uygulama yeterli. (S41)*

[27] *[mikroöğretim için] bir plan hazırlıyorsunuz ve bu planı yapabileceğiniz çapta hazırlıyorsunuz falan. Teorinin bir uygulaması olarak kesinlikle nitelendirebilirim. Hatta budur yani zaten. Bir de zaten bu toolar yardımıyla da hazırladık bu planları falan. O teroik base'i de kesinlikle yakalamak zorundaydık zaten (S2)*

[28] *Aslında tam sağlamadı, çünkü öğrencilerimiz hayaliydi. Yani benim, Deniz, Nilgün, diğer arkadaşlar, hepsi 20 yaşın üstünde arkadaşlarım var. Onlara bir şey anlatınca anlıyorlardı, bazen anlamamazlıktan geliyorlardı rol yapıyorlardı, ki öyle yapmaları gerekiyordu, gerekci olmuyordu, [mikroöğretim] tamamen sunu kaldığı için iki sefer anlattığımda anlıyorlardı. Halbuki gerçek hayatta benim öğrencim, 10 yaşındaki öğrenci üç defa da anlatsam öğretmenim anlamadım diyebilir. O seviyedeki öğrenciler nasıl öğreniyor biz onların teorisini okuduk. Nasıl öğrenemiyorlar, onu da okuduk. Yani yeni abstract düşünmeye başlamışlar, yeni yeni, 10-11 yaşlarında başlıyorlar ama bu öğrenciler hayali olduğu için bunu tam geçmedi teoriler: gelişim... öğrenme teorileri [hayata] geçmedi, çünkü arkadaşların hepsi yetişkindiler yani. Yaptıkları şeyler de roldu zaten, ben de biliyordum onlar da biliyordu. (S12)*

[29] *Aslında olumsuz değil de daha olumlu etkileri, neden çünkü gerçek sınıfın karşısında heyecanlanabilirim ben mesela, çünkü ilk defa olabilir ama burda karşımda tanıdık simalar var,*

tanıdık isimler vardı sonuçta. Herhangi bir zorluk ve problem çıkaracaklarını düşünmediğim için rahat derse başladım. O avanataja dönüştü, dezavantajdan çok avantaja dönüştü..... benim için sorun olmadı açıkçası da, ama biraz böyle sahne korkusu olan insanlara öyle tanıdık simalar görmek daha avantajlıdır bence (S48).

- [30] *Mikroöğretimde sonuçta karşımızda gerçek yaş grubu yok, hani kendi arkadaşlarımız var. Onlarla tabi daha kolay sunum yapar gibi daha çok. Ya da işte hani bir soru sorduğunuz zaman cevabın geleceğini biliyorsunuz, normal öğrenci gibi değil. (S44) 16.34 O daha rahattı açıkçası, ilk yaşacağımız şey. İlk yapacağımızda direkt öğrencilerin karşısına çıksak çok daha heyecanlanırdık. Hani orda en azından kendi arkadaşlarımız. Çocukları tanımiyorsunuz, onların karakteristiklerini bilmiyorsunuz..... Mikroöğretimin olumlu bir transferi oldu, yani ilk denememizi gerçek bir sınıfta yapmamamız da çok olumlu bir şey bence işte. İlk öğretim deneyimimiz kendi arkadaşlarımızla. Ama bunun olumlu etkisi kendi kişisel deneyimize, farkı oluyor yani..... İlk sunumum benim daha da heyecanlı olurdu, elim ayağıma dolaşabilirdi gerçek ortamda.(S44)*
- [31] *Active Learning kitabımız vardı, orda 101 stratejiden bahsediyordu. Onlar biraz havada kalıyordu aslında. Yani uygulamadığımız için. Oysa ben derste, benim mikroöğretimimde guest speaker'ı uyguladım. Onun pratiğe dökülmüş halinde daha faydalı oldu. Yani sadece okuyup geçmedim onu bir de derste uyguladım. Daha farklı oldu benim için yani bir konuk geldiği zaman nasıl davranması gerekir, öğrenciyle etkileşimi nasıl olmalı, ne gibi bir atmosfer içinde bulunmalı bu epertin falan, onları- daha faydalı oldu yani onu yaşama imkanı buldum sadece okuyup geçme değil de...teroiden pratiğe dökülüştü, güncel hayata uyarlanması daha farklı oldu benim için. En azından ilerki senelerde kendi öğretmenliğim boyunca bunu nasıl kullanabileceğimi hayal edebilmiş oldum ya da düşünebilir oldum diyebilirim. (S10)*
- [32] *Ders planı hazırlama, özellikle ders planı hazırlama hocam, biz sizin dersinizden önce ders planı hazırlayın dediklerinde, birkaç kere oldu, biz kafamıza göre bir kazanım, curriculum falan yok kesinlikle, kafamıza göre işte, ne olacaktı işte şu kazanımım olsun, şu amacım olsun, şunlar da işte objektiflerim olsun şeklinde, hani tamamen kendi kafamıza göre çalışıyorduk. Ama şimdi ben curriculumu açtığımda nasıl bir ders planı hazırlayabileceğimi biliyorum. Yani şu başlıklara birebir uygun yazmasam bile bir ders planında bunların olması gerektiğini biliyorum. Yani bence bu da önemli bir şey (S46).*
- [33] *bilgisayar derslerinin çoğu uygulamalı olduğu için bu son zamanlarda stajda da gördüğümüz gibi, yani pek anlatım göremiyoruz. Sadece "şu şu yapılacak" ve uygulamaya geçiliyor direkt. Yani bu mikroöğretime biraz ters gelen bir durum olduğu için konu serbest de kılınabilir. İsteyen diyelim grup eğer kendisine uygun bir konu bulamıyorsa kendisini gösterebilecek başka bir konu da seçebilir. Çünkü sonuçta öğretmen performansı izleyeceğimiz için bizim için hangi konunun anlatıldığı sorun olmaz. (S48)*
- [34] *İlk gün, ilk anlattığımız zamanlarda yapay öğrenci olması biraz sıkıntılıydı. Çünkü- Raporumda da gerçi yazmıştım da- örnekleri mesela ben... sonradan öğrencilerin yüzüne bakarken anlayıp anlamadıklarını anlayabilirsiniz, yani ona göre dersi devam ettirebilirsiniz, yeni örnek gösterebilirsiniz. Ama ordaki arkadaşlar yani orda uygulama, ders sonucu uygulama yaptırmak için buldukları için benim kendi görüşüme göre, dersi anlayıp almadıklarını anlayamıyorsunuz zaten konuyu biliyorlar arkadaşlar, zaten konuyu biliyorlar. Anlayıp anlamadıklarını anlayamıyorsunuz, işte ne bileyim örnek versem daha iyi olur mu olmaz mı bunu düşünmüyorsunuz. (S24)*
- [35] *Tamamen hayali öğrenciler oldukları için onların seviyesine inme ihtiyacı da hissetmedim bazı yerlerde. Şu an stajımda geçen hafta ders anlattım. Öğretmenim vardı içerde, mesela o da beni seyrediyordu, tamamen istediğim herşeyi anlatamıyordum çünkü ben orda sınıfımla özel kalmak istiyordum öğrencilerimle. Bir ara herhalde fark etti ki dışarı çıktı, "biraz yalnız kal" dedi ve ben orda onlarla çocuklar gibi eğlendim yani. Herşey, istediğim örnekleri verebildim, çocukca konuşabildim, onlara anlayacağı dilden konuştm, çıkışta hepsi "Siz öğretmenimizden daha iyi öğretmensiniz" dediler. Çok kaygılandım ben çok utandım ama... İşte gerçek öğrenci olunca bu da başka bir yanı, insanın içindeki gerçek performans ortaya çıkıyor ama öğrenciler yapmacık*

olunca bazı şeyler de doğal olarak yapmacık kalıyor. Böyle bir sorunum oldu yani, performansımı etkiledi, öğrencilerin seviyesine inemedim tam çünkü öğrenciler hayalimdi. (S12)

- [36] Orda zaten ben sorum yaşadım da. O dört kişiyi görünce, ben onlara çocuk muamelesi yapamadım orda. Altıncı sınıflardı... ben onlara altıncı sınıf muamelesi yapamadım. Ben onları kendi sınıf arkadaşımın gibi gördüm, ondan sonra kafamdan geçen şey: “bunlar photoshop biliyor zaten, ben bunlara niye anlatıyorum ki” falan gibi oldu. Ondandan sonra derse girişi yapamadım, bitirişi yapamadım. Kameraya çekiyorlardı falan, bayağı bocaladım ben orada.... [Daha önce aldığımız bir] derste....bütün sınıf öğrenci rolundaydı, ortam kalabalık olduğu için herkes çocuk gibi davranabiliyordu. Şımarıklık yapıyordu falan. Ama burda dört kişi olunca ne yapsanız göze batıyor. Onun için herkes gayet resmi davrandığından dolayı ben adapte olamadım. Düşündüğüm hiçbir şeyi yapamadım. Hatta bir arkadaş yazmış, görünce hatırladım “sen gel de yap” demişim yani. Söylenmez öyle, bazı hocaları görüyorum söylüyorlar ama... ben söylemem şahsen normalde öyle. (S27)
- [37] Sonuçta, hazırladığımız o aktivitelere öğrencilerin nasıl tepki vereceğini bilemeyebiliriz. Ben mesela bir şey sorduğumda o aktiviteden bir sonuç çıkarmalarını bekliyorum. Hani o cevabı bir türlü bulamayabilirler. Hani bu belki mikroöğretimde kendi arkadaşlarımız olduğu için tabii ki hani onlar buluyorlardı. Ama bunu gerçek yaşamda yaptığımızda belki- o an mesela ne yaparım, nasıl ipuçları veririm, gerçeği buldurmak için, tam beklediğim cevabı almak için nasıl yönlendirmem lazım, bunu mesela bilmiyorum. (S44)
- [38] Orası çok sanal bir ortamdı, yani hani şunu keşfettim, bunu keşfettim diyemem. Ama şimdi staja gidiyorum orda keşfediyorum, o ayrı. Hani ortam çok farklı orda [MT'de], öğrencinin yaptığı role bağlı herşey. Hani şey bilmiyorum yani bana orda öğretmen becerilerimle alakalı çok fazla şey yapamadım [bir şey keşfedemedim]. Hani çok heyecanlıydım zaten. Daha farklı oluyor. Sonuçta bir de dediğim gibi gerçek öğrenci olmadığı için çok sanal bir ortam orası. Hani öyle bir şey aklıma bile gelmedi. Ne ne yapacağım, neyi geliştirdim geliştirdim mi bir şey falan diye böyle.. yok. Ama şimdi mesela stajda çok daha farklı... Küçük öğrenciler. İhtiyaç duyurma, hani bunu çok seviyorlar, bunu anladım. Orda öğreniyorum hakaten öğreniyorum. Ama mikroöğretim çok sanal bir ortam, öğretmenlik becerilerine dair ben bir şey kazanıldığına inanmıyorum o açıdan. (S46)
- [39]Yapay öğrenciyle [mikroöğretim] yapılmasının pek etkili olduğunu düşünmemiştim ilk sunumdan sonra, ama ders bitti, dönem bitti. İkinci dönem [spring] staja başladık. Bu dönem bizim ders anlatmamız gerekiyordu, hatta ben anlattım bu sabah. Dersi planlarken, hani, önceki tecrübelerimizin, o sınıftaki [microteaching] tecrübelerimizin, gerçekçi olmasa bile işimize yarayacağını ben şimdiden hissedebiliyorum bunları. [Gerçek sınıfta] ders anlatırken çok daha yararlı olacağını düşünüyorum yani. Gerçek bir performans olmadı diye bu etkinlik yapılmasaydı bizim için çok daha kötü olurdu. Gerçek öğrencilerle yapılırsa bizim için daha iyi olurdu ama hiç yoktan iyiydi, o andaki imkanlar bakımında gayet başarılıydı bence. Çünkü ilk dönem dediğim gibi ilk zaman dediğim gibi hani gereksiz gibi düşünsem de bu dönem ders anlatmaya, gerçek ders anlatacağım zaman, ordaki terübemi de düşünüyorum ben “o zaman nasıl olmuştu” diye düşünmeye başlıyorsunuz. Yani o da olmasa hiç tecrübeniz yok, yapacak birşeyiniz yok. O bakımdan gayet iyi olduğunu düşünüyorum şimdi. (S24)
- [40] Başka performansımı etkileyen...sürekli zaman aklımdaydı. O beni çok sıkıyordu, acaba yetişimi yetişmedi mi, kameraman arkadaşımın da uyarılar geliyordu şu kadar süre kadı, o benim performansımı etkiliyordu. Belki daha da hazmede hazmede vermem gereken şeyleri hemen sıkıştırdım. Bir stres içinde verdim, o tamamen etkiledi. (S12)
- [41]Kazanımla çok alakalı, kazanımla ve uygulanan stratejiyle. Yani tam olarak, verilen bilginin uygulanmasına yönelik stratejiler var, onlar belli bir süreyi kapsıyor, ister istemez. İşte Excelde bilmemne tablosunu şu şekilde oluşturmak gibi bir şey. Orda yardım ediyorsunuz öğrencilere işte bakıyorsunuz. Oraya zaten planda otomatikmen dört dakika filan gibi bir süre ayrılıyor. Benimkinde öyle bir durum yoktu. Benimkinde öyle bir uygulama gerektirecek bir şey yoktu. Ben süreyi daha fazla uzatılabileceğini düşünmüyorum. Belki bir buçuk dakika, babaannelerinizin evinde neşer vardı, eski şöle bir hatırlayın diye birkaç soru daha sorularak belki...(S41).

- [42] Arkada sınıf arkadaşların duruyor, önde aslında öğrenci olarak koyduğün dört-beş kişi duruyor, kamera çekiyor bir yandan, sen de dersi anlatıyorsun. Hakikaten çok sanal bir ortam olduğu için ben orda heyecandan konsantre olamadım, ...Dediğim gibi çok sanal ortam. Ama yani benimkisi heyecan biraz da kişisel bir şey.....Ben çok heyecanlıydım.....bir de ilk grup olmanın verdiği etki de var. (S46)
- [43] Hisler noktasında bir olumsuzluğu olabilir. Samimiyeti biraz kırıyor. Ben orda mesela değerlendiriliyorum hissiyatıyla bazı şeyleri yapabiliyorum, belki bir öğretmen bazen kaşlarını çatması lazım bazen, bazen belki bir öğrenciye sert konuşması gerekecektir sınıf huzurunu sağlamak açısından. Ama orda değerlendiriliyor olmam benim bazı hislerimi engelledi. Yani güzel not almaya çalışıyorsunuz. Bu sadece hocalarım açısından oldu. Diğer arkadaşlarım açısından, onlar biliyordum ki tamamen benim iyi taraflarıma artı, kötü taraflarıma eksi vereceklerdi, onu biliyordum. Not kaygısı da yok, beni seven sevmeyen arkadaşlarımdan hepsi objektif değerlendirecekti, onu da biliyordum, onun rahatlığı içindeyim. Ama hocalarımdan değerlendirmesi çok değil ama biraz bazı şeyleri engelledi, ama bu da olmak zorundaydı. (S12)
- [44] İlk sunu yapan kişi ne yapacağını bilmiyordu, direkt geldi sunumu yaptı. Ondan önce sizin kontrolünüzde bir yapay sunum olsaydı, mesela bir arkadaşımız bir konu anlatmaya çalışıyorsa, üç tane arkadaşımız öğrenci olsaydı. Bu normal bir anlatım değil de siz sunumun nasıl olacağını anlatıyorsunuz. Örneğin arkadaş giriş yapınca siz orda kesip siz "burda öyle yaparsanız daha iyi olur" diyorsunuz mesela. Soru kısmına geldi, bu sorulara diyelim ki "değerlendirmeyi yazılı yaparsanız daha iyi olur" falan tarzında, aynı anda sunum yapılırken değerlendirme yaparsanız daha etkili olabilirdi. Çünkü ilk sunumu yapan arkadaş için çok muallakta kaldı herşey. Son sunumu yapan artık herşeyi biliyordu, hatta son sunumlara doğru ordaki yapay olan arkadaşlar da daha havaya girdiler, daha etkili olmaya başladılar. İlk sunumda herşey havadaydı, kimse ne yapacağını bilmiyordu falan. O bakımdan bir oryantasyon süreci içerisinde bir deneme sunumu olabilirdi. Bu nasıl olacak, sunu, öğrenciler nasıl davranacak tarzı bir şey olabilirdi. İlk sunumu çok iyi hatırlıyorum. Yani direkt kalıyorsunuz işte, anlatıyorsunuz herşeyi, öğrenci arkadaşlar falan böyle tamamen onaylayan gibi duruyorlardı, veriyorsunuz tamam anladınız mı tamam tarzındaydı. Sonuna doğru havaya girdiler, Deniz falan, sonuna doğru. Hani bu ilk baştaki süreci atlatmak için bir oryantasyon olsaydı daha iyi olurdu. (S24)
- [45] Bu [değerlendirme formu] genel çerçeveyi verebilecek bir seviyede form. Yani 100 itemlik bir şey olsaydı, "Allahım herşeyi uydu mu uymadı mı" o amacına kesinlikle hizmet etmeyecekti; boş bir kağıt verseydiniz, sizin istediğiniz genel çerçevedeki bilgilerin gelmeme ihtimali vardı. Çocuk işte giriş hakkında commentlerini yazmıştır ama conclusion hakkında hiçbirşey yazmamıştır. Yani bunun hakkında da yaz diyen birşeylerin olması lazımdı. Bunda[formda] vardı yani sonuçta giriş, gelişme, sonuç bakımından bunları, en azından bunları yazın gibi bir şey önemli. (S2)
- [46]Form doldurmadan izlediğimizde tabi o zaman da aklımızda geliyor şeyler "aaa bak şunu yapmadı" veya "burası iyiydi burası kötüydü" falan diye. Ama formla uğraşmadığımız için hani takip daha kolay oluyordu.Formun olması mecburi. Sonradan aklımıza gelmez yani ders bitiminde "hadi arkadaşlar son 10 dakikanızı arkadaşınızı değerlendirdirin" şeklinde. Orda şöyle bir şey olabilir, unutulabilir yani. Hani, bir dersi dinlerken bile biz not alıyoruz sonuçta almak zorundayız bir şekilde yoksa unutulur gider herşey. O yüzden hani arkadaşımın yaptığı dersin iyi yönlerini, kötü yönlerini ordaki notları almam için bana bir şey bir şekilde lazım olacak, bir kağıt, bir kalem yani. O yüzden boş bir kağıtla bir kalem olmasındansa form olması daha iyi tabi. (S40)
- [47] Dersin en iyi olan iki yönü bir de en zayıf olan iki yönü var ya, hani bunlar iki diye söylenilmemeli bence. Çünkü bazılarında ben gerçekten ikinci en iyi yönü bulamadım. Hani artık başka bir şey eklemek durumunda kaldım. İşte mesela şey dedim, aktiviteleri falan dedim. Hani çok da böyle çok da iyi değildi mesela. Yani hani orda bazen üç dört de olabilir, bazen bir tane de olabilir dersin en iyi yönü. Hani o çok değişiyor. İki diye şey yapınca hani ben illa bir şey yazmam gerekiyor diye bir şey daha bulmaya çalışıyorum dersin iyi yönü olarak. Onlar daha esnek olabilir, benim tek şeyim o (S44)
- [48] Formun arkasındaki en zayıf iki yönü... Şimdi bunu da herkese yazamadım açıkcası yani. Yazmak istemedim belki de. Sonuçta bunu okuyacak, evet onun için yararı olacak ama o

özgüveni kendimde yakalayamadım. Onu nasıl yapabilirsiniz? bilmiyorum ama... Aslında siz o en zayıf iki yönü şurda biraz alıyorsunuz gibi bence, şurda eleştirilerde yani şurdaki [arkadaki] en zayıf iki yön sorusunu ben cevaplayamadım ama bu soruların cevabını fazlasıyla şurda [comments] verdim. Yani bana göre ne eksik sorusuna yani... En zayıf iki yönün formun ön kısmına yedirmek lazım diye düşünüyorum ben. Çocuğun en iyi yönlerini yazabiliyorsunuz, çünkü birçok iyi yönü olabiliyor, ama en zayıf yönüne gelince bir naming orada direkt oluşmuyor, ama burda [ön kısım-comments part], dolaylı olarak, tam name'ini veremeseniz de bazı eleştirilerinizi sunabiliyorsunuz. (S2)

[49] [praise, critics and suggestions part] onları hemen hepsinde kullandım. İşte “bu kullandığım materyaller iyiydi”, “bu materyallerin yerine bunu kullansan daha iyi olurdu”, “şöyle yapsan daha iyi olurdu” falan diye. Herşey güzel olunca “herşey güzel olmuş” falan yazıyordum. Hiç olmazsa bir cümle yazıyordum. (S27)

[50] Değerlendirici olarak izlemek tabii ki daha yararlı. Beklentileri anlamamız, kendimizi onun yerine koyup biz ne yapardık'ı test etmemiz kendi içimizde. Yeni şeyler de geliştirebiliyoruz “ben bunu böyle anlatırdım.” Yeni alternatifler de geliştirebiliyoruz: “Şunu şöyle yapmasaydı da böyle yapsaydı daha iyi olurdu” bu da bizim ilerdeki olası öğretmenlik hayatımızda hatırlayacağımız, yapabileceğimiz şeyler arasına eklenen artılar oluyor. (S41)

[51] Öbür türlü [form olmadan] gerçekten hani sıkıcı ders anlatanları hiç kimse dinlemez. Değerlendirme büyük bir faktör. Yani ben bunu izleyeceğim, değerlendirmem lazım deyip odaklanıp değerlendirmek, farklı bir şey, sadece hani izleyelim çok daha farklı bir şey. Mesela hangi aktif learning stratejiler çok işe yarıyor onları mesela... Çok text tabanlı şeyler dağıtmak öğrencileri sıkıyordu. Daha resimli falan şeyler öğrencilerin daha çok hoşuna gidiyordu, ya da hani böyle tabu tarzı, tombala tarzı oyunlar. Hani oyunlu şeyler falan daha çok hoşuna gidiyordu....Gerçek şu ki değerlendirdiğiniz zaman daha dikkatli izliyorsunuz. (S44)

[52] Formsuz işleyince dersi tamamen takip edebiliyoruz ama formlu izlemenin de şöyle bir güzelliği var, hani burda herşey detaylı olarak hemen hemen bütün öğeler kapsandığı için mesela benim aklıma gelmeyecek ya da hani dikkat etmediğim ayrıntıyı ya da dikkat etmediğim birşeyi burda yakalayıp “aaa hakaten bunu yapmıştı” ya da “bunu yapmamıştı” deyip formdan o şekilde bir şey alabilirim ki bu hem [değerlendirdiğim] arkadaşım için hem de benim için iyi bir şey. Yani dikkaten kaçan birşeyi burda form sayesinde yakalayabildim. (S40)

[53] Bazen şeyi düşünüyordum, hani sonuçta öğrenci olduğum için benim de katkılarımlı oluyor o derse. Sonuçta öğretmenin öğrenci ile iletişim sağlamak için benim bir soru sormam lazım ya da benim bir yeri “anlamadım” demem lazım. Hani başkası bu durumda bir şey demese nasıl çocukları konuşuracak falan diye düşünüyordum. Hani o zaman şey olur. Ama hani öğrenci durumundayken içinde olduğunuz dersin belki çok da objektif değerlendiremiyor olabilirsiniz..... Yani bakıyorum çok böyle sönük geçiyor artık hani bir şey sorayım da bari hani bir açıklama yapsın öğrencilerle konuşmuş olsun diye bir şey soruyordum. İster istemez o oluyor. Biliyorsunuz hani düşük not alacak şimdi diyorsunuz, şey olmuyor yani hiç öğrencilerle bir etkileşim yok. Ders bu yönden eksik olmasın diye ister istemez atlama gereği hissediyorsunuz yani ben hissediyordum açıkcası. (S44)

[54] Ya bunları doldurdum ama şey çok dürüst mü oldum sorusunun cevabı: evet dürüst oldum ama bazen de sıkılıp şey yaptığım rastgele işaretlemiş olduğum olmuştur. Özellikle şuralarda ben iyiyi hiç işaretlemedim. Ben hep çok iyiyi işaretledim. Tüm söylemlerimi şuralara yazdım. Yani kötü bir şey olmuştur, bunu hiçbir zaman şuraya yansıtmadım. Çünkü ilk bunu alanın değer yargısı şurda oluşuyor ve ben iyi bir değer yargısı oluşsun istiyorum. Daha anlamlı bir bakış atacaksa zaten buraya atacaktır. Benim söylemek istediklerimi burda anlasın diye düşündüm. İlk, yani onun için gerekli olan bir notsa falan öyle bir motivasyonları varsa, burdan hepsinin dört olduğunu görsün öyle bi güdülensin ama şurdaki benim nazizane notlarımı da... dikkat etsin diye [düşündüm]. Bu toolu öyle kullandım açıkcası. (S2)

[55] İlk önce şu duygu var, [değerlendirdiğim kişi] benim arkadaşım, ne oldu yani tamam bazı arkadaşlar yetersiz, hiç yok gibi notları verse de, benim arkadaşım. Ben[im] ona 3 ya da yani 2 den aşağı verdiğim not olmaz, yani hani ya çok iyi yapanları hep çok iyi dedim zaten, hani orta

yapanlara iyi dedim, yetersiz yapanlara da iyi dedim, mesela o değerlendirmem onu etkiliyor. Öğrenci, eğer hani mükemmeliyetçili insanlar var, arkadaşlar içinde mükemmeliyetçi insanlar olabilir, yani değerlendirirken objektif bakabilir, ama ben bakamam, o benim arkadaşım ya, o beni de değerlendirecek, çünkü o onu okuyacağı zaman, ben de bana gelen dönütleri düşünüyorum, çok iyi, çok iyi, çok iyi, iyi, iyi, iyi, çok iyi, çok iyi olsun, tamam, ama ne kadar gerçekçi o farklı, hani o [değerlendirmelerin] iyi olması çok güzel hissettiriyor insanı..... (S21)

- [56] Neye göre çok iyi, neye göre iyi neye göre orta. Aslında birçok insanda oluyor. “Çok iyi” kavramı iletişim becerileri çok yüksek olanlarda genelde. “Aa süper öğretmenlik yaptı”. Ama metodu uyguladı? Yani diğeri çok etkili olmayabilir iletişim becerisi olarak ama metodu çok net bir şekilde uyguluyor ama oraya çok iyi değil de iyi yazılıyor iletişim becerisi yüzünden. O konuda belki biraz sıkıntı olmuş olabilir. Heyecanı etkiliyor. Ama başka türlü de değerlendirme şansınız da yok. O da var.... Arkadaşlarımızı değerlendirirken çok fazla şeye bağlı kalmadık aslında. Metodu çok mu iyi uyguladı, aslında daha çok etkilendik, onun iletişim becerisinde etkilenerek bu formu doldurduk. Orda da dersin içeriği ile çok alakalı olarak değil de kişinin kendisi, kendi becerileriyle alakalı olarak değerlendirme yaptık. Bu da bazı arkadaşlarımız dersine çok iyi çalışmış olabilir işte metodu çok iyi uygulamış olmasına rağmen onlara birazcık haksızlık olmuş gibi geldi bana...Biraz da kendimizi çok onun yerine koyduk daha eee hatta orta yazıp da iyiye dönüştürdüğüm çok şey vardır benim mesela. Ben o kişisel özelliklerden arındırmaya çalıştım çoğunlukla. Metoda ağırlık vermeye çalıştım kendimce. Ama o etkilenmeden, o süreçte o etkilenmeyi en aza indirmek de, o etkilenmeden soyutlanmak da çok kolay değil aslında. (S41)
- [57] Sürekli forma da dikkat ettiğiniz için, sununun bir kısmında o havayı, o akışı kaçırdığınız yerler oluyor, ister istemez kaçırıyorsunuz. En azından ben öyle yaşadım. Çünkü bu forma çok aşına değilim. Bu formu ben hayatımın bir önceki stage’inde yüzlerce defa görmüş olsam, yani tanımış olsam bu formu, hiç bakmadan yani sürekli sunuma konsantrasyon olarak yapacağım ama haftada iki kez kullandığım bir form, şey şimdi okuyorum, işte bunu yaptı mı diye böyle bir kaygı oluşuyordu. Belki bunu minimize etmenin bir yolu , işte bu formu, aslında siz daha önce göndermiştiniz bize incelememiz açısından ama. Bu forma aşına olmak.. Yani tutup da birileri sunum yaparken, “Allahım”, işte “dersin amacını ve hedeflerini bildirdi mi?” Okumamak lazım. Burdaki genel frameworku bilip işaretleyip işaretleyip geçmek lazım sunumu kaçırmadan..... Bazen de sunuma çok iyi konsantrasyon olmadığında burayı okudum işaretledim, gerçekten bu flowa uyuyor mu, belki onu değerlendirdim. Biraz flow, contentten contentte döndü iş contenten. Akıyor mu ya da ne kadar aktı. Yani genel çerçeveyi [değerlendirebildim] ancak. (S2)
- [58] Formu doldururken biraz dikkatimiz dağılıyordu açıkcası. İşte bak şunu yaptı, bunla ilgili şunu yazayım derken başka bir kısmı kaçırma olayı falan vardı. O yüzden hani biraz dikkati dağıtabilirdi. Ama bir de şöyle bir şey var. Hani sonradan şey yapmak, akılda tutmak zor olduğu için, o yüzden derste simültane bir şekilde hani aynı anda doldurmanız gerekiyor. Ama tabi dersi bazen kaçırebiliyordum bir yeri yazayım, “bak şurada şöyle yaptı” “şuraya bir öneri ekliyorum” farzedelim, hani onu yazarken o sırada anlattığını kaçırıyor olabiliyoruz. Bir de kopukluk oluyordu yani açıkcası hatırladığım kadarıyla. Yani bir yandan formu dolduruyorken bir yandan da onun anlattığına şey yapmak [dikkat etmek] bazen kopukluklara neden oluyordu..... Kopuk olan yerleri birbirimizden tamamlıyorduk. İşte “Ece ben burayı kaçırdım sen duydun mu yaptın mı bunu” falan şeklinde. (S40)
- [59] Bence mutlaka uygulanmalı bu değerlendirme türü, çünkü hem motivasyon artırıcı bir faktör olarak görebiliriz bunu anlatan için hem de dinleyen insan biraz daha net, dikkatli dinlemeye başlayacak, yani her türlü her açıdan baktığınız zaman bir faydası vardır yani bunların ve çok da beğendiğim bir teknik ve strateji. (S48)
- [60] Devam etmeli, kesinlikle devam etmeli. Çünkü o zaman boşu boşuna seyrederdik yani, ders dinlenmeyecekti bile yani, herşeye dikkat edilmeyecekti. Yani burda ister istemez, diğer arkadaşlarımız [değerlendirme] yapmak istemeseler bile farkında olmadan çok şey kazanacaklarına eminim ben yani. Çünkü sunum sırası sana geldiği zaman bu forma dikkat ediyorsun, burda arkadaşların yaptıklarını falan not alıp açıklamalar falan yazdığınız için onlar

aklınıza geliyor, onlara dikkat ediyorsunuz o bakımdan çok faydalı oluyor. Yani farkında olmadan faydası oluyor bunların. (S24)

- [61] *Etmeli. Ne kadar benim gibi iyi ve çok iyiyi, ortayı mümkün olduğunca çok fazla kullanan biri olsa da, şeyler var, gerçekten objektif görenler var, bazen gıcık olanlar da ama, hani çok yetersiz, beğenmedim filan olanlar olsa bile....e başta eziyet gibi gözükse de bunları okumak güzel, çünkü hani, ne olduğunun farkına varıyorsun, bunu arkadaş gözüyle olsa bile, değerlendirme değerlendirmedir, hani çok hani çünkü o çok az, karşı taraf, hani bir arkadaşından gelip seni değerlendirme istesen, offfff filan der ama, bu çok güzel birşey yani, bulunmaz bir şey bence bu, bence kesinlikle olmalı yeniden. (S21)*
- [62] *Ben çok önem veririm böyle şeylere. Olumlu ya da olumsuz eleştiriyi almak isterim açıkcası..... Yaptığım bir sunu için sadece “çok iyiydi” demek yeterli değil bence. Sunuda eksik olduğum yanlar nelerdi, gerçekten güçlü olduğum yanlar nelerdi? Ya da benim yaparken bir yerde hatam oldu mu, çünkü o kadar çok emek veriyorsunuz ki, yarın başka bir iş yapınca ben ona da böyle emek vereceğim, eğer burdaki yanlışımlı bilmezsen hep öyle yanlış yanlış.. olarak gideceğim ya da buradaki iyi bir davranışımın gerçekten etkili olduğunun farkına varamazsam, çünkü bana göre etkilidir ama o kadar insana göre değildir belki, diğerinde de öyle yapacağım. O yüzden bu değerlendirmeleri tekrar tekrar okudum hani çok da hoşuma giderek okudum. Çok da iyi şeyler yazmışlardı. Çok da önemli olduğunu düşünüyorum. (S43)*
- [63] *Bir kere kriterleştirildi bazı şeyler. Yani ben önceden, “iyi bir ders yapacağım” diye gideceken şimdi “şu şu şu maddelere dikkat edip iyi bir ders yapacağım” demeye başlıyorum. Çünkü değerlendiriliyorum. Dikkat etmem daha küçük parçalara ayrılmış, daha küçük küçük güzellikler var. Onların hepsine dikkat etmem gerekiyor. Bir ikincisi, arkadaşlarımdan feedback alıyorum. İyi yaptığım noktalara daha cesaretim geldi, kuvvet kazandım. Eksik kalan noktalarımı öğrenme fırsatı buldum, diğer türlü belki hiç öğrenemeyecektim yani. Kabaca “bu ders iyi yapıldı 10 üzerinde 9” denecekti ama o bir nerden gitti? O bir nerden gitti, onu öğrenemeyecektim yani belki..... benim bazı hissetmiş olduğum şeyler vardı doğru veya yanlış yaptığım, onlar ıspatlanmış oldu. Onu gördüm yani. (S12)*
- [64] *Belki o ilk başlarda yaptığım hataları da çok takmayacaktım, çok önemsemeyecektim ama birçok insandan aynı şeyi almak onun gerçekten düzeltilmesi gereken bir şey olduğunu görmeme sebep oldu. Bu konularda aldığım dönütler- aldığım çok fazla negatif dönüt yoktu ama negatif aldıklarım da çok tutarlıydı, yani hepsiden var olan şeylerdi. O yüzden çok belirleyici oldu benim için. (S41)*
- [65] *“Temadan, namus ve 1980’i işlemekten daha ziyade çocuklara özel bir şey yapsaydın”... yani hemen hemen sizinki de dahil olmak üzere, genel olarak tüm commentlerde vardı bu. Bu belki de benim kabul etmek istemediğim bir gerçek. Sonuçta ben biraz da social side’i olsun istedim ama onun biraz dozunu ben ayarlayamadım..... Bu evaluationların bana sağladığı şey... birşeyde körü körüne ısrar etmemek lazım.....Şunlardan[feedbackler] ve okuldaki deneyimimden anladığım dünya görüşünüzden biraz orta yola gelmeniz gerekiyor. Yani çocuklara biraz da şeyi vermek vermek lazım. Ben evet çocuklar gerçekçi olsun, schools should be the real laboratories” falan diyorum ama şey. Biraz da çocukların doğası var. Eğlenmek durumundalar, gezmek, koşmak surumundalar, işte aşık olacaklar, şöyle olacak böyle olacak... birsürü şey var, çocuklar da rahat olmalı. Dolayısıyla, evaluationların sağladığı bana. O temayı çok iyi seçmek lazım. O temayı seçebilmek için de şeyi çok iyi tanımanız lazım, katıldığınız sınıfları. Mesela ben 5. sınıfta microteaching yapacaksam birkaç kere o beşinci sınıfa gitmiş olmalıyım. Yani onlar neden daha çok zevk alırlar, ben neden daha çok zevk alıyorum değil de. Çok uç noktalara gitmemek lazım. (S2)*
- [66] *Bir kere çok faydalı olduğunu hiç şüphesiz söyleyebilirim. Çünkü nasıl diyeyim, insan kendisi yaparken herşeyi iyi yaptığını düşünüyor, herşeye bir açıklama buluyor, hatta bende mesela çok az eleştiri vardı zaten benimkine. Onları okurken ilk önce hemen savunmaya geçiyorsunuz kendi kendinize sonra hani biraz düşününce haklı olabileceklerini, o açıdan seyredince haklı olabileceklerini düşünüyorsunuz. (S43)*

[67] Kalitesi bakımından arada inanılmaz bir uçurum vardı. Sonuçta bu alanda daha profesyonel olan birileri, bu alanda duygularını kullanmayan birileri vardı bir kısımda, işte öğretim görevlisi ve araştırma görevlisi. Yani bu alanda duygularını kullanma gereği duymuyorlar çünkü yeteri kadar profesyoneller. Yani neyi değerlendirmeleri gerektiğini biliyorlar. Bir tarafta da işte duygularımı kullansam mı, hangi açığa kadar kullansam, ne yapsamı düşünen birileri var. Oysa diğer tarafta tamamen bunlardan soyutlanmış bir kitle var... Ben iki boyuttan değerlendirdim kendi microteaching performansımı. Bir işte daha ekspertler ne düşünmüş benim hakkımda yani olmuş mu, genel havayı yakalayabilmişmiyim, bir de öğrenciler (arkadaşları) işte, onalara hitap edebilmiş miyim. Yani sizden aldığım değerlendirmenin kalitesi inanılmaz bir şekilde daha farklıydı, daha böyle şey...ııı.. cümle kuruş bile çok önemlidir. Yani şurada kurduğunuz cümle bile. Bir yerme cümlesini çok olumlu bir şekilde kurmak bir başarıdır, bu bir profesyonellik gerektirir. Çok kötü olmuş yerine iyileştirme gerekli yazmak gibi birşeydir bu. Daha böyle yapıcı eleştiriler aldığımı söyleyebilirim sizin tarafınızdan. ... Arkadaşlarımız çok profesyonel değiller bu konuda, duygularını kullanmak zorundalar... Yani bunlardan soyutlanabilmek, objektif bir değerlendirme profesyonellelikle sağlanır, bu da öğretim üyesi ile araştırma görevlisi tarafından verildi. ... Öğretim görevlilerinden gelen dönütlerinin kalitesinin daha yüksek olması gayet normal, dolayısıyla benim için çok daha önemli olan onlardı. Onların daha büyük katkısı oldu diyebilirim. Öğrencilerin commentlerine yaklaşımım ile öğretim üyesinden gelenlere yaklaşımım arasında devasa bir fark vardı (S2)

[68] *Övgü eleştiri ve öneriler kısmını siz “arkadaşlar doldurun” diyorsunuz. Orasını da çok insan boş bırakıyor. Bu da şeyi gösteriyor. “Burayı [rating part] doldurayım da kurtulayım.” Aslında hani burayı [comments part] doldurması da önemli. Çünkü feedback kısmı da önemli okuyan kişi yani, ben burda bunu yazmış, kimin yazdığı önemli değil ama bu cümle önemli yani. O yüzden hani neden diye vurgulayın bence hocam. Yazsınlar. Burdakiler için en iyisi neden en kötüsü neden diye yazsın nedenini de. Bu kısım optional gibi oldu ve çoğu insan boş bırakmış, gerçekten çoğu boş bırakmış. Ve bu da yani tamam buraya bakayım da hani böyle bir chart aldım [rating partın ortamala grafiği] sadece bunu okumak kaldı yani ama nedeni yok. Demiş ki “en kötü yönü uygun örnek vermedi”. Peki verdiğim örneğin kötü yönü ne idi? Mesela. Ha burda biraz zaman ama, yani belki üç tane mikroteaching olmaz bir derste iki tane olur, zamanı birazcık daha ara bırakırsınız. Beş dakika verirsiniz zamanı bunları doldurabilirler. (S9)*

[69] *Okuduğum feedbacklerde sürekli “geçmiş dersle bağlantı yapmadı”, “geçmiş dersle bağlantı yapmadı”... ben onu yaptım bir yerde, geçmiş derste ne yap- ama dersin başında yapmadım. Yani... bu konuda çok kısıtlı hissettim kendimi, feedbackleri okurken de orda biraz haksızlık olduğunu filan düşündüm aslında. Çünkü belli bir stratejim var ve çocukları motive etmek istiyorum. İlk başta “geçen hafta ne yapmıştık arkadaşlar”la başlamak istemedim. Yani onu daha sonradan söyledim. O da çok structured bir şey yaptığımız için belki araya kaynadı gibi oldu ama. Ama net bir şekilde tomografi cihazından şeye kadar hepsini hatırlatma yöntemiyle soru cevap yöntemiyle geçen ders neler yapıldığını 100% anlattığımı düşünüyorum ama işte böyle kafamızda bir şablon oluştu belki, önce bu yapılır sonra bu.. Ama bu da creativity’i öldürüyor. Orda belki planlamayla ilgili bir sıkıntı oldu diyebilirim. Çünkü benim dışımda herhalde kimse öyle bir şey yapmadı galiba ya da ona alıştık, ona alıtığımız için “orayı yapmadı, hiç değinmedi”. Assessment kısmında da aynı oldu. Orda bir cuiz sunsaydım “aa evet assessment yaptı”, diye yazılacaktı ama orda soru cevap yöntemiyle bunu sağlamaya çalıştığımda anlaşılmadı. Belki insanların çok dikkatli dinleyememesi, o uzun süre boyunca sıkılmış olma ihtimalleri de olabilir. Formun yapısı, belki de, bu şekilde bir sonuca neden oldu. (S41)*

[70] *gerçekçilik istiyorsak, yazılı olması gereken, form vermeyi... yazılının ilginç bir yanı var, sözle ifade edilemeyen bir çok şey ifade edilebiliyor, yazılıda daha rahat daha objektif davranılıyor, hani, bir insan yüzüne gülüyor, her insan yüzüne güler, yani bu gerçek hayat gibi, hani yüzüne gülüyorsa ama yani yazılı olsa o gülümseme olmayabilir. Yani, yazı çok ilginç bir şey, yani.....ama, hani gerçekçilik istiyorsak, orada objektif bir şey istiyorsak, yazılı olur, sözlü olmamalı, sözlü zaten var, aaa, iyi, aferin, çok iyi, başardın, iyi başarmasa bile arkadaşına yani, (S21)*

[71] *Yazılı daha güzel, yani çünkü yazılı daha güzel, çünkü orada aynı anda olunca sen de birşeyler yazarsın, yani gördüğün zaman hemen orada yazarsın ya da tiklersin. Ama sonradan olsa bazı*

şeyler unutulabilir ya da bazı şeylerin ağırlığı tam hatırlanamayabilir. Sözlü dönüt verecekseniz tekrar izlerken sözlü bir dönüt- ama o da çok vakit alır. Yazılı daha iyi. Mikroöğretim sonrası tartışma yapılması mikroöğretimi iyi yapmış olanlar için güzel olabilirdi ama kötü yapmış olanlar için çok kırıcı olurdu. Hem de bazı arkadaşların materyal problemi çıktı, mesela bir arkadaşın mikroöğretimi sırasında elektrik kesilmişti. O arkadaşın morali bozulmuş olabilirdi. Orada hemen dersten sonra bir tartışma yapılırdı pek iyi olmazdı (S47)

[72] *Form kullanılmayacaksa, diğerini [sözlü feedback, tartışma] de yapmayalım derim. O heyecanı atlatmış bir insanın karşısında “sen şunu yaptın”, “bunu yaptın” demek çok hoş olmaz. Hep övmeye kalkarsın kırılmasını diye. Sonuçta öyle yapılmıyor. Ya da kötülerini söylediği noktada ister istemez savunmaya gidecek “ama ben de böyle yapacaktım” filandı.....Ya da uzar gider çözüm çok net olmaz. Bir de bu kadar ayrıntılı alamayız belki dönütü. her insan özeleştiri yapamaz, öz eleştiri apayrı bir şey de, karşılık veremez, çekingendir, yani savunamayabilir ya da tam tersi olur. Orda yani tartışma çıkabilir o kötü olur. Yazılı devam etsin.Belki vakit kalırsa hani belki doldurulduktan sonra falan tekrar bir değerlendirme şeyi olabilir mi ki öyle bir vakit sadece bir kişiye ait? (S28)*

[73] *Mikroöğretim sonrası tartışma yapılması mikroöğretimi iyi yapmış olanlar için güzel olabilirdi ama kötü yapmış olanlar için çok kırıcı olurdu. Hem de bazı arkadaşların materyal problemi çıktı, mesela bir arkadaşın mikroöğretimi sırasında elektrik kesilmişti. O arkadaşın morali bozulmuş olabilirdi. Orada hemen dersten sonra bir tartışma yapılırdı pek iyi olmazdı (S47)*

[74] *Yani değerlendiren kişilere bu değerlendirmenin önemi bayağı bir hani anlatılarak, açıklamaları uzun uzun yapmaları ya da işte feedbackleri gerçekten feedback gibi vermeleri, [Comments kısmına] hani oraya işte mesela söylediğim bir cümle, en çok mesela ilgilisi çeken, işte “öğrencilere şöyle şöyle şöyle” diyerek motive etti”. Mesela, bunu yazabilir, hani daha spesifik. Yani öyle değerlendirme yapılırken bunlar belirtilse çok daha iyi olur. (S44)*

[75] *Birşeyler havada kalıyor eğer bu sonucu çıkarmazsak hani, bana bu kadar kişi bunu demiş şu kadar kişi şunu demiş ama genel olarak hani en sonunda bir toparlamaya gerek varsa hani, “benim dersim güzeldi, benim dersimin eksik yanları vardı” o yüzden self-reflection önemli bir şey. Çünkü yazdığının hani benim için bir anlamı olması lazım, sadece bir rakam ifade etmemesi gerekiyor benim için. Sadece self-reflection yazın deseydiniz, bu format olmadan olmazdı, bin tane soru gelirdi size sanırım. Çünkü çok fazla bilgi vardı, biz bunları... bir de ilk defa böyle bir şey yaptık biz sınıf olarak. Mesela ben ilk defa bir bilgimi, bütün herşeyimin notlarını girdim, onları sizin verdiğiniz şeye [yönerge] göre istatistiğini buldum, bir grafik çizdim şeylere göre, u yani bunları toparlamayı hiç bilmiyordum. Eğer o yönergeyi vermeseydiniz, yapamazdım yani (S43).*

[76] *Şeyi söyleyeyim, şu self-reviewin her türlü iş için must olduğunu düşünüyorum ben.....neyi yaptım, ne öğrendim, ne öğrenmeliyim, nerde eksikim falan gibi. Bunun öyle bir boyutu var işte bir sürecin sonucunda bir summary yani ne kazandım, ne kaybettim, ne kazanmam gerekiyor, neye daha fazla odaklanmam gerekiyor. Bunun o amaca hizmet ettiğini düşünüyorum. Bu bir gerekliliktir.....Bunun ders içerisinde koşullanması, yani bir assignment olarak verilmesi benim için biçilmiş kaftan, sonuçta ben bunu zaten yazıyorum ama biraz daha profesyonel olarak yazıyorum. O açıdan ben bunu beğenmiştim. Yazma gereği duymuştum. Ya bir sürecin sonucunda duygularınızı ifade ediyorsunuz. (S2)*

[77] *Formları verseydiniz, bıraksaydınız, aaa bu da bunu demiş, şu da şunu demiş, ama şunu da yapabiliyordim diye sadece düşünecektik o anda ve o orda kalacaktı. Kalıcı bir şey olmayacaktı bizim için. Ama bunu ciddi ciddi oturup analizler yaparak, işte ordaki ciddiyeti görüp, yani bunları sonuçta bir tablo haline dönüştürüp ona daha ciddi yaklaşmamıza sebep oldu. Sonuçta öğrenci yetiştireceğiz ve bunlar çok büyük hatalara sebep olur bizim orda sadece “hm” çok önemsemeden “bunu da şöyle yapsaydım daha iyi olurdu” dememiz. Ama süreçte, onları değerlendirirken, onların [hatalarımızın] ciddiyetinin farkına vardık. Onları analiz ederken, “gerçekten burda hatalıyım ben” dedik. Ve yine söz uçar yazı kalır olayı oldu. Daha farkındalığımızı artırdı bunu yapmak. Gerektiği yerde kabul ettik, burda hatalıydık bunu yapmamalıydık, şöyle yapmalıydık. Ha, alternatif de geliştirmemize sebe oldu, o konuda da çok yararlı oldu. Tamam burda iyi değildim ama nasıl iyileştirebilirdimi düşünmeyecektik diğer*

türlü. Bunu yazıya dökcek bir plan oluşturmayacaktık. Şimdi, bu sayede burda kötüydük, arkadaşlarımız da şu şu yorumları yapmışlar, evet ben de kabul ediyorum, bu şöyle şöyle yaparak daha iyi hale getirebilirim. Hatayı farketme olacaktı diğer türlü, ama şimdi hatayı fark edip düzeltme... ki bu ödevi yapmamış olsaydık o farkındalık da çok alt seviyede kalacaktı bana göre. (S41)

[78] *Gerekliydi, çünkü benim yaptığım microteaching'i burada bir daha şeyaptım [gözden geçirdim] iyi oldu çünkü mesela biz microteaching yaptık, bazı şeyleri dahil etmiştik aslında ama bilmiyorduk yani. Mesela burada compare and contrast sorusu var. Yani şimdi ben düşünmemiştim mesela, yani yaptım mikroteching, compare and contrast gelince bir daha izliyorum mesela ve artık orda birşeyleri compare and contrast ediyorum. Siz bir dönüt verdiniz, ben ona göre değiştirdim. Ama bu yaptığımın ne kadar katkı verdiğini düşünmemiştim yani. Ama soruya göre artık bakıyorum, acaba.. haa demek ki hakkaten burada bir değişim oldu daha iyiye doğru. O yüzden bence bu format iyi yani, güzel yani...Böyle bir formatla daha somut ürün çıkıyor, değerlendirme adına daha somut bir şey çıkıyor. Bu format da devam etsin yani, iyi oluyor yani. değerlendirme adına. (S47)*

[79] *Şimdi bizim en kötü eksiğimiz şu template yoksa ortada bir şey yapamayız. Yani ne yapacağımızı bilememek gibi bir şey yani. Bunu veriyorsunuz [ödev] "biz bunları neye göre dolduracaktık? Şimdi nasıl yapacaktık?" Yani çok fazla farklı sonuçlar çıkabilirdi, ama bu verdiğiniz feedbacklere göre falan yapınca, siz dönemin başından beri yaptığımız şeyleri elimize verince rahat oldu çok daha rahat oldu hem de. Ne yapacağımızı biliyorduk en azından. Yani ben kendi adıma. Yani bugün bile bana bir hocamız "bir analiz raporu yaz" dediğinde "hocam bir örneğiniz var mı?" falan diyor. Hani ne istiyor, ne bekliyor, gerçekten o yani hani. Bir ders alıyorum, hoca rapor yazın diyor, template sorduğumuzda kafanıza göre yazın, template falan takılmayın diyor, yazıyorsun ama 70 geliyor, niye işte burası eksik... Tamam da bana istediği bütün noktaları verse unutmayacağım belki, belki şu anda bana sorduğun zaman her nokta aklıma gelmiyor, ama bana istediği bütün noktaları verse ben o noktaların üzerinden teker teker geçip ben raporu yazarım. Öyle bir şey iyi olur yani. (S9)*

[80] *Yine hep bir sıra vardı ya, bu sıralar hep önemlidir raporu toparlamak için. ...Bu assignment 5'in ben çok düzgün hazırlanmış olduğunu düşünüyorum. Çünkü şeydi, bir sıra önemliydi ya hani. Burdan verilerimi girdim. Ne yazacağım belliydi hani, neye dayandıracağım da belliydi. Rakamları falan kullandığımı hatırlıyorum, şunun ortalaması buydu falan diye. O yüzden çok düzgün düzenli gittiğini düşünüyorum hani bu çok zamanımızı almadı hocam, bir karmaşa yaratmadı. Ki bilgi o kadar çoktu ki hani sizden gelen, bizim işte önceden yaptığımız, kendi görüşlerimiz, doldurduğumuz form... çok fazlaydı ama toparlanması açısından bir düzene konması açısından çok yararlıydı. Hiçbir sorunla karşılaşmadım bunu yazarken. (S43)*

[81] *Format sağlamasaydınız, en fazla iki sayfa yazardık. "Ben derse hazırlanırken şunu yapmıştım, bunu yapmak istedim, ama bu oldu" deyip bıraktık iki sayfada. Burda ne yapmışız, hangi aşamada hangi hataları yaptık nelerle karşılaştık hepsini açık açık yazıp- yazarken de biraz uzun oluyor ama neler yaptığımızı görüyoruz. Keşke şöyle yapsaydık, keşke böyle yapsaydık diyoruz. Bir de işte o şeyleri, bu dataları[formlar] bilgisayara girmesi bir 20 dakika falan sürüyor ama ben bir birbuçuk iki saat baktım böyle datalara hepsini okudum böyle baştan. Tekrar tekrar okudum, işe yarıyor hocam sonuçta yani. Boş değil bunlar ... Gerçekten insanın kendini değerlendirmesi bazı şeyleri görmesi için yardımcı oluyor. Çok zor birey benim kendimi değerlendirmem ama, birşeyleri görmemiz için yardımcı oluyor bence. (S27)*

[82] *Yani bunu ben geliştirmek için ne yapabilirim diye bir düşünmemizi sağladı. Sonuçta oraya öyle bir cevap yacağız. Bize gelen feedbackleri süzdük, demek ki bu gerçekten önemli, o zaman ben bunu nasıl yapabilirim gibi. Hani burda tamam eksiğimiz var "amaaan onu da şöyle yaparım düzelir" diyorsunuz ya elinizdeki [formlara] bakınca, onu raporda yazarken öyle yazamırsunuz işte. Oraya gerçekten temeli olan bir şey yazmanız lazım, hani gerçekten yapabileceğiniz bir şey yazmanız lazım yani. (S44)*

[83] *Teorilere çok fazla bağlanıp kalmamak gerektiğini düşünüyorum. İlle de onlarla ilişkilendirmenin çok doğru olmayacağını düşünüyorum. Yani elbette değinmeliyiz ama çok da bağlanıp kalmamalıyız. O var. Öğrenci karakteristiklerini belirlemek açısından onlara*

[teorilere] çok bağı kalmamız gerektiğini düşünüyorum ben. Çok belirleyici olmuyorlar artık, şu aşamada (S41)

[84] *En güçlü yanlarımı motivasyon, iletişim olarak, işte iletişimde göz teması falan bunları belirtmiştim, kendini sevdirmek falan. Çünkü teorilere baktığımda motivasyonda John Keller, bir numaralı kişi. İlk önce nasıl motivasyon sağlamam gerekiyor, ilk A harfinden başlamıştım, kişi bir kere dikkati çekilmeli, yani dikkati çekilmezse artık motivasyon denen şey gitmiştir. Dikkati çekildikten sonra, bu kişi o işin gerekliliğini bilmeli. “Ben bu tabloyu öğreniyorum ama ders için öğreniyorum” dese, ders geçtikten sonra biter, ya da derse verdiği kıymet kadar tablo öğrenme konusuna kıymet verir. Ama ben onlara demiştim ki “bakın arkadaşlar designcılar hepsi bunu kullanıyor, ilderde web işlerinde çalışırsanız bunları kullanacaksınız, hani web sitelerine giriyorsunuz ya, onlarda hepsi kullanılıyor, matbaacılarda kullanılır, kitabınızda var, etiketinizde bile var, bunu designcılar kullanıyor” demiştim. Haaa gerekliliğini vermiştim. Bunu nerden biliyordum ben Keller’dan biliyordum. Böyle bağdaştırdım. Bunu böyle teorilerle bağdaştırınca ne oldu, yani kendi bildiklerimi bilimsel bir zemine oturtmayı öğrendim. Mesela yarın öbürün belki bir makale yazacağım, aynı şey, benim fikirlerime kimse kıymet vermeyecek. Çünkü ilk başlayınca kendi fikirlerim çok da şey ifade etmez. İspatlanmış fikirlere ne kadar paralel? Değil mi. Ondan sonra ben ispatlanmış fikirlere paralel gidebiliyorsam, sonra kendi fikirlerimi bir akademik camiada ortaya koyma cesaretini gösterebilirim. Onu öğrendim. İlgi çekme noktasında da, işte bu yaştaki çocuklar ne kadar şey sever, neyi bilirler neyi bilmezler. Malum Pigaet, en çok onu gördük. Vygotsky’inin ZPD’i görmüştük. Bazen çünkü onları sorularla sıkıştırmak da gerekiyor bilmediği şeyleri öğretmek için. Bunları zaten biz daha önceden öğrenmiştik, biliyorduk. Bölümümüz bunları bize vermişti. Sadece kendi yaptıklarımızı onlarla ilişkilendirdim, akademik bir zemine oturtmuş oldum ve oturtmayı da öğrendim. Yaptığım şeyleri, konuştuğum şeyleri, bildiğim şeyleri bildiğim şeyleri akademik bir zemine oturtmayı öğrendim. Bu çalışmanın amacı bana en çok orda faydası oldu yani. (S12)*

[85] *Bunu yaparken aslında çok zorlanmadım, çünkü şeyden dolayı, çünkü biz planlamanın en başında seçtik ya hani yöntemimizi, neyi kullanacağımızı, hani ben böyle bir yaklaşım izleyeceğim demiştim mesela. Onu belirterek yaptığım için planımı, bu yönlerimi zaten ben buna göre yapmıştım deyip onları yazmıştım ben burda, o şekilde yaptığım için çok zorlanmadım. (S43)*

[86] *[mikroöğretime hazırlık bizim açımızdan çok zaman ve emek alıcı olsa da] onun da yarar sağladığını düşünüyorum. Çünkü hani dediğim gibi şimdi staja gidiyoruz, hani hoca bana kalkıp şey diyor şimdi dersi sen anlat diyor, hiçbir hazırlığım yok hiçbirşeyim yok, ama beş dakikada inanın, hani tenefüste söylüyorsa ben hemen aktivite hazırlıyorum, uygun bir giriş için dikkatlerini çekecek bir şey düşünüyorum, ondan sonra değerlendirme için onlar aktivite yaparken başka bir şey düşünüyorum. Hani öğrendiğim bu sürecin çok faydalı olduğunu düşünüyorum. Ders hazırla dendiğinde bunlar hemen aklıma geliyor. (S43)*

[87] *Geçen hafta field teaching yaptım. Bu formu kullandım ve çok faydası oldu. Bu form iyi bir form.... Derse hazırlanırken rubrik olarak kendim kullandım, kendimi ölçtüm en azından. Bu form cidden iyi bir form..... Dersin akışını bizzat yaşattırıyor. Öğretmene öğrenciye de de yaşattırıyor, önemli bir form diye düşünüyorum. Dersi anlatım. Bu mikroöğretimde yaptığım hataların hiç birini yapmadımı düşünüyorum. Hoca da (mentor teacher) bu güne kadar bir çok öğrenci geldi, hiç AA vermemiştim demişti. Sağolsun beğenmiş, oranın hocası. Bayağı, yani bunun faydasını orda gördüm ben, yani mikroöğretimde yaptığımızın hemen hemen benzeri, tabi yaş grubu farklı, 9. sınıflardı, konu farklıydı ama mantık aynıydı. Yani derse nasıl girilir, öğrencinin günlük hayatıyla nasıl paylaşılır, ondan sonra ders nasıl sonlandırılır, öğrencinin dikkati dağıldığı zaman ne yapılır, onların enerileri nasıl derse kanalize edilir gibi soruların cevaplarını bu formda buldum. Yani yaptığım mikroöğretime de buldum yani o anı tekrar yaşadım, “ben dersi çok hızlı anlatmıştım” dedim dedim oraya geldim işte rahattım, öğrencilerle birer birer ilgilenerek, sorularını yanıtlayarak, gelecek derse referans göstererek, geleceği düşünüp geçmişle bağlantı kurarak, bayağı bunu aynen yaşadım.....Çocuklar da mutlu oldular, iyi bir ders işledik, ben de mutlu oldum iyi anlatım ve iyi notlar aldığım için. Bayağı faydası var hocam bu formun... böyle bir rubrikle ders anlatmak hiç rubriksiz plansız anlatmaktan çok daha faydalı. Ne yapacağımızı biliyorsunuz, elinizde bir yol haritası var. Burdan gideceğinizi biliyorsunuz. (S10)*

- [88] Bu mikroöğretim planı hazırlama süreci o kadar fayda sağladı ki, hani bu ders [382] olsun, şu an mesela yine ders anlatırken burda yaşadığım süreci takib ediyorum. Değerlendirmedeki, mesala kriterlerimizi kendimde uygulamaya çalışıyorum ben, işte uygun bir dönüt yapacağım mı, uygun bir değerlendirme stratejisi kullanacak mıyım, öğrencinin motivasyonunu sağlayabilecek miyim, bunları hani düşünerek yapıyorum. Hatta bu toolu [değerlendirme formunu] kullanıyorum. Çünkü çok kişiyi değerlendirdik, sınıftaki herkesi değerlendirdik sanırım. Hani bir dersin iyi olup olmadığını anlamamız için hakaten belirlenmiş kriterler, hani öğrenciye mesela eski bilgilerini hatırlattı mı, geçmiş dersle ilgili ya da gelecek dersle ilgili bağlantı yaptı mı hani bunlar önemli şeyler. Öğrenciye bir dersi anlaması için gerekli şeyler daha doğrusu. O yüzden, hani ben de kendimde arıyorum yani anlatacağım derste bu özellikleri. O yüzden faydalı olduğunu çok düşünüyorum. (S43)
- [89] Hatta sizinle o hazırladığımız uzun mikroöğretim planlaması döneminden sonra hani ben böyle bir gecede [field teaching] planımı yaptım, hatta onu referans alıyorum. O bayağı etkili bir yöntem. Bir de hocam, öğrencilerin seviyesine uygun hazırladım mı diye plan yaparken kendinizi de değerlendirmiş oluyorsunuz. Yani o bayağı etkili bir yöntem bu toollar, IPSRT ve CPSRT. Hazırlarken bakıyorum en azından steplerinden atladığım var mı diye. Hani bunu da yapmış mıyım bunu da yapmış mıyım diye o bile farketiriyor plan hazırlarken..... (S44)
- [90] Geçen hafta ders anlattım, 6. sınıflara anlattım ... ben sevecekleri örnekleri buldum. Kendi dilimi nasıl kullanmam gerektiğini fark ettim. Onların önüne de bir plan hazırlayıp çıkınca, işte sahne mesleği yarısı biliyorsunuz. Bazen soytarırlık yapmak da gerekiyor. Soytarırlık dediğim. Mesela büyük bir adam küçük bir çocukla konuşurken çat pat ederek konuşmazsa çocukla arkadaş olamaz. Misal değil mi. Onların düzeyine inmek. Bazen öyle yapmak lazım. Öyle başarılı geçti. Baştan ümitizce başlamıştım, yani ben, çünkü çocuklar çok sıkılıyor derste yani hep oyun oynayalım diyorlar falan. Ödül de koydum onlara, bitirenler erken bitirenler internette istediği siteye girebilirler falan diye serbest bıraktım onları. Zaten bitirdikleri anda 4-5 dakika vakit kalmıştı. Onu da düşünmüştüm yani hemen şak diye bitirip bütün zamanlarımı İnternette geçirecekse, onu hayır engellemiştim onu, ona göre bir alıştırma hazırlamıştım. Güzel oldu yani çok hoşuma gitti. (S12) ...Tabi ki olmaz mı. Bir kere dediğim gibi yani, motive etmeyi biliyordum, girdiğimde yani en başta öğrenci ne yapacak onları biliyordum. Yani instructional goalleri, onları tek tek açıkladım yani. Gerekli yerde ?? for feedback onu biliyordum yani, çünkü onlara feedback verdim, bazen genel, bazen özel ilgilenmem gerektiğini de biliyordum. Bunları hep bilerek çıktım ben oraya. Yoksa zaten o dersin birinci dönem verilip ikinci dönem staj stenmesi de çok mantıklı bizden yani. Yoksa sizde yaşadığım o sıkıntıları işte time management, time managementta hiç sıkıntı yaşamadım. Acayip- yani gene sonuçta bu ikinci üçüncü sefer oluyor, yani gene de biraz yaşamam gerekirdi diye düşünüyorum aslında ama hiç yaşamadım tam istediğim herşey yolunda gitti. Bu da aslında ideal bir durum yani istediğin herşeyin yolunda gitmesi, o oldu. Bazı bir iki tane misbehaving öğrenciler vardı işte çok zeki olmalarından kaynaklanan şeylerdi onlar da... zeki ve zengin ailelerin çocukları onu da gözardı etmemek lazım. İşte onları da biraz özel- bazen onları ihmal ederek, bazen ignore, çünkü her hatalarını görme[me]k, işte classroom management derslarondan de gördüğümüz şeyler. Onları uygulayınca çok güzel birey çıktı ortaya. Ama tabi ki yani o geçmişteki mikroöğretim tecrübem, o da çok faydalı oldu yani. İlk olmadı en azından, hiç bir şey olmasa bile bir ilk olmadı yani. Nasıl bir plan yamam gerektiğini biliyordum gitmeden önce hem kafamda, hem kağıt üstünde. Onları bilerek gittim. Bu tooları kullanamadım, ama biliyordum mesela, instructional goal olacak dedim, role of students olacak, benim rolüm olacak, objektiferim olacak, kazanımı nasıl bölmem gerektiğini biliyordum, nasıl bir aktivite kullanacağım, onları biliyordum, öğrenmiştim çünkü. Ama tek tek işte toolu kullanıp yes no yes no koymadım, aldım kalem kağıdı elime bu bildiğim bilgileri bir sıraya koydum. Şurda şunu vercem, burda bunu vercem, burda bunu böyle yapacağım. Bunları bunları vermeliyim ki, çünkü çocuğun buna ihtiyacı var, bu yaştaki çocuk bundan anlar diye hepsini hazırlamıştım. En sonunda da şöyle bir assessment yapacağım demiştim. Ki gidip bütün bilgisayarlara o assessment yapacağım şeyi yükledim, o assessment yapacağım alıştırmayı. Ve onlara da çözdürttüm. Çözdüler de çok da sevdiler. Sonra tek tek gene kontrol ettim, öğretmenler bırakır gider ondan sonra, çünkü notlandırılmıyor bu ders, seçmeli ve sıfır kredi. Ben gene de aldım kalemi kağıdı tek tek baktım, yazdım. Şimdi gelecek hafta gideceğim onları söyleyeceğim. Diyeceğim ki bu arkadaşlar böyle yapmış, bu arkadaşlar böyle yapmış, ki öğretmenler böyle bir şey yapmıyorlar. Öğrenci “bana kıymet veriyor, yaptığım şeyi kontrol ediyor” diyor..... Not tuttum, gideceğim “bu arkadaşınız full yapmış, bu arkadaşınız

şuraya dikkat etse daha iyi olur, bu işte fena değil ama renkleri daha güzel seçsin.....” onları tek tek söyleyeceğim yani. Hoşlarına gidecektir. Öğretmenleri hiç yapmıyor.....pratikte hocalar sadece dersin core kısmına gidiyorlar, ama biz gördük ki burası ders- bu sadece bundan ibaret değil. Belki bu dersin yarısıdır evet ama geri kalan yarısı? Değil mi bir goalları söylemek var, kendi kafamızda benim ve onun rolunu, yerimizi tespit etmemiz, en sonunda da closure var yani, gelecek haftanın konusu söylenecek, çocuk neyi bilecek, en azından hiç bakmasa bile zihinel olarak bir cümle var kafasından “Ha gelecek hafta şunu yapacağız”. Bu bile yeter ona yani. Bunu bilerek gelecek. Ve ben onların yaptıkları şeyi değerlendireceğim yani. Ama öğretmenler şuan maalesef üzülerek, sadece core kısmını işleniş kısmını dikkate alıyorlar.....çocuk psikolojik olarak onu kabulleniyori hazırlanıyor. (S12)

[91] Yani dediğim gibi, şu anda staj dersinde sırf bu planı [microteaching] yaptığımız ve bu mikroteachingi bu kadar feedback alarak, bu kadar iletişim içerisinde yaptığım için şu anda eminim yani bir nevi neyin doğru olduğundan. Assess teaching'ingimi çok rahat yapacağım gibi geliyor sırf bunun verdiği rahatlıkla. Daha önce olsaydı, tamam, bir kağıda plan hazırlıyoruz, tabloya yerleştiriyoruz verileri ama bunu nasıl uyguluyoruz ve nelere dikkat edip nelere daha çok dikkat etmemiz gerekiyor, o kısımlar muallaktaydı. Bizim kişisel becerilerimizle belki doldurmamız gereken şeylerdi ama şimdi net. Verilerimiz var, şekillenmiş. (S41)

[92] Çok faydalı olduğunu düşünüyorum. Yani bunu size söylemiş olmak için söylemiyorum. Cidden faydalıydı. Bir de yaşayıp gördüğüm için daha faydalı olduğunu düşünüyorum. Yani, sonucunu almak bir şeyin, bu bir feedback gibi yani. 11 tane arkadaş değerlendirdik. Cidden oturdu yani bazı şeyler rayına girdi diyebilirim. Daha rahat olduk, kendimize güvenimiz arttı. Böyle bir şey olmasaydı mesela hiç müfredatı incelemeseydik, hiç ders planı yapmasaydık şimdi daha başka olurdu diye düşünüyorum. Daha yoz, yoz diyeyim yani, daha yapay daha biraz daha uzak ol[urduk]. Ama şimdi sanki daha olayın içindeyiz, işte ders olanları yaptık, sunumlar, mikroöğretimler yaptık. Daha sanki içerdeymişim gibi hissediyorum şu anda, daha bilgili ve daha kolay aşabilecek problemleri. Mesela derste bir şey olsa daha kolay aşabileceğimi düşünüyorum. Böyle faydaları olduğunu düşünüyorum. (S10)

[93] Bilgisayar öğretmenliğine yönelik tam kapsamlı bir ders oldu (S44)

APPENDIX M

CODE LIST FOR INTERVIEW DATA

(RQ 2.1) MICROTEACHING PLANNING PROCESS WITH COGNITIVE APPRENTICESHIP APPROACH

Contributions

1. Providing to learn the process of lesson planning in order to design “an applicable plan”
2. Enabling to master the components of an instructional plan
 - pupil characteristics (psychological development level, SES, readiness level, and age)
 - intro to lesson (introducing lesson due to the characteristics of pupils)
 - activities (selection and correct use of strategies, methods, techniques; questions; examples; instructional materials; narrowing plan to 20-minute period; making the topic concrete)
 - assessment
 - plan B
3. made critical contributions to their instructional planning skills
 - gaining know-how in lesson planning
 - retention of instructional planning skills
 - transferability of planning skills
 - transforming theory into practice
4. leading to more structured, organized, clear and detailed microteaching plans
5. systematic preparation for microteaching and attitudes towards the course
6. positive effect on self-confidence regarding teaching

Challenges

1. requiring instructor to spend too much time and effort for preparation to microteaching
2. requiring preservice teachers to spend too much time and effort for preparation to microteaching
3. delay in giving written feedback
4. scheduling problem in oral feedback

Suggestions

1. Feedback
 - Oral feedback
 - it is better, necessary at initial stage of planning, more key in selecting topic, activities, and strategies from textbook and
 - taking less time, being easily-remembered and appropriate for dynamic documents like lesson plans
 - being forgettable for them and taking too much time for the instructor
 - Written feedback
 - being retentive
 - necessity for static documents like reports
 - Mixed feedback
 - necessity of mixed feedback
 - oral feedback in early stages and written feedback on written documents
 - first written then oral feedback
 - frequency of feedback
 - customized feedback
2. Microteaching planning guide
 - need of a guideline to make plan B

(RQ 2.2) MICROTEACHING PERFORMANCE

Contributions

1. Getting aware of aspects in instructional planning and teaching skills
 - the necessity of lesson plan
 - characteristics of lesson plan (dividing learning outcomes into teachable parts, giving real-life examples and assessment process in lesson plan)
 - originality and multifaceted of real classroom (impossibility of exactly implementing the plan, necessity of plan B)
 - time management,
 - characteristics of teacher (calmer, less excited, gentle, self-confident, continuously active, impromptu, empathic, monitor and controller; should have a good diction, communication (eye contact, mimics, and gestures) and discussion skills)
2. Lessons learned
 - carefully designing teaching and learning activities, examples before the session
 - controlling instructional materials before the session
 - considering time-limitation on activities due to the time restriction of microteaching
3. Other contributions
 - Giving opportunity to implement lesson plans
 - transforming theory into practice
 - helped to overcome stage fright and anxiety regarding teaching
 - provided to recognize their strength and weaknesses, importance of teaching procedure and activities
 - enabled to form a concept of teaching in their minds
 - provided them to meet, implement and learn the active learning strategies
 - enabled to meet and work with Computer Education Curriculum for 1st-8th grade

Challenges

1. inauthentic pupils
 - impeded to present real and authentic teaching performance, but rather led to just make a presentation
 - inauthentic pupils' not behaving naturally in front of others;
 - due to inauthentic pupils, not learning anything in terms of teaching skills, not knowing how to apply some teaching methods in real classroom
2. anxiety and nervousness (due to)
 - existence of recording video camera,
 - existence of friends acting as not only pupils, but also audience,
 - existence of instructor and teaching assistants,
 - being assessed for grading and/or feedback,
 - time management
 - (resulted in)
 - forgetting to do some planned things
 - losing concentration even in any small problem
3. Problems with instructional materials
 - not controlling materials or equipment
4. being assessed (casued)
 - to act in conformity with assessment form
 - to act as be pleasant

Suggestions

1. giving a lesson to authentic pupils lead to real performance, which is more realistic
2. if inauthentic pupils will be taught, to make the environment more authentic:
 - increasing the number of peers acting as pupils,
 - assigning all peers to acting as pupils,
 - assigning certain talented peers in role playing to acting as pupils in all sessions,
 - specifying roles of peers acting as pupils before microteaching sessions
 - audience just observing or assessing microteaching should be removed from microteaching environment
 - duration of microteaching should not be so strict in time restriction
 - to implement microteaching in computer laboratory environment
 - a consecutive course to this course could be put in the CEIT curriculum
3. suggestions for orientation prior to microteaching sessions
 - a sample (model) microteaching and its assessment should be demonstrated before microteaching activities
 - to watch sample videos for microteaching
 - to listen to an experienced teacher as a colleague
 - provide theory related supplementary course book

(RQ 2.3) ASSESSING PEERS' MICROTEACHING PERFORMANCE BY USING THE MICROTEACHING ASSESSMENT FORM (MAF)

MAF

1. strengths

- understandable, user-friendly, structured, and appropriate in terms of the criteria in the form
- assessing with form is better than assessing with a blank paper

2. suggestions to improve MAF

- about back side of the form (to reduce the number of strongest and weakest sides from two to one on the back page of the form, cancelling the strongest and weakest sides, cancelling weakest sides)
- about ratings part (space to write general properties of the microteaching episode such as grade level and learning outcome, to make the items (statements) detailed so as to explain exactly what they mean, changing the order of items, inserting additional items on individual differences, on educational technology used, and a part asking "something else that you want to add", making rating part more accurate by decreasing intervals, adding an option of "leave blank", needing to focus on teacher's behaviors and strategies rather than on that of students)
- about comments part (adding "leading questions" to facilitate filling the comments part in more detail)

3. strategies of assessing peers with MAF

- filled the rating part simultaneously while observing microteaching
- took notes during microteaching and then assessed the performance
- filling the back page at the end
- trying to write reasons of scores at comment part for items rated
- writing prescriptive comments at comments part
- after microteaching, writing the important behavior and developments as comment
- trying to be as objective as possible during the filling
 - focusing on teaching procedure and behaviors rather than content performer's individual characteristics

Contributions of assessing peers with MAF

1. contributions to their knowledge and skills about instructional planning and teaching

- this process gained them critical thinking skills
- frequently using assessment form taught them lesson planning process
- comparatively observing the others' microteachings in the point of one's view provided them to model and internalize strong points and to draw lesson from weak points in others' microteachings
- the empathic approach for putting oneself in performers' position in assessing process, and its positive effect on one's own microteaching

2. provided to keep their attention to microteaching, thus for enabling them to follow the microteaching episodes

- enabled the assessors to become cognitively active observers
- to be motivated to observe others' microteaching
- observe even uninteresting microteaching episodes

3. assessing peers with assessment form provided more detailed and cautious assessment

- more objective assessment when assessing with assessment form
- the understanding of teacher qualifications expected from them
- gave chance to examine the whole teaching process with its details
- in the case of not using MAF, but just observing, the following issues emerged: focusing only on discourse and communication skills, not observing carefully, but getting so bored and giving attention to the just successful microteachings.

Issues in assessing peers' microteaching with MAF

1. not being able to assess friends fairly

- tending to give higher marks than a performer deserves for the criteria in rating part because of friendship, empathetic approach and not to discourage the performer.
- Assessing under the influence of performers' communication skills

2. not completely understanding whether students in the role of pupils did activities or not

3. getting bored if activity parts were unvoiced and too long

4. difficulty to find the two strongest and two weakest sides for every microteaching

5. the corruption of observation because of form filling.

6. internalization of the template of rating part in the assessment form confined their creativity

Suggestions in assessing peers' microteaching with MAF

1. the applications of assessment with microteaching assessment form should be continued in this course

2. all preservice teachers should go on to assess only one performer in each session

3. to keep attention on the microteaching sessions, all preservice teachers should assess all microteachings with assessment form

4. peers should not give offensive feedback to performers
5. instructor and teaching assistants should behave empathic give slightly higher scores than microteaching performers deserve

(RQ 2.4) BEING ASSESSED BY PEERS ABOUT MICROTEACHING PERFORMANCE THROUGH THE MICROTEACHING ASSESSMENT FORM (MAF)

Contributions of being assessed with MAF

1. providing fair assessments in the ratio of around ninety percent
2. improving ultimately teaching skills and performance
3. providing of analytic or detailed feedback
 - function of negative feedback to recognize weak points and mistakes
 - function of positive feedback to encourage them and increase self-confidence
4. facing up to one's own or self-evaluation
5. contribution of using rating part to prepare microteaching
6. motivation of microteaching performer due to being assessed
7. getting aware of others' different viewpoints

Feedback from instructor and teaching assistants

1. getting professional, correct, useful, and detailed feedback from instructor as expert
2. more corrective, guiding, realistic and effective feedback from instructor and teaching assistants
3. the most objective assessment from instructor and teaching assistants
4. seeing feedback from instructor more important than that of others

Comparing feedbacks from instructor, teaching assistants and peers

1. consistent and parallel feedbacks by instructor, teaching assistants and peers
2. overlapping of feedbacks if they were given by peers, who think critically and filled the form studiously, with that of instructor and teaching assistants
3. overlapping of feedbacks for salient and certain parts in microteaching
4. complementary of feedbacks from the academic staff and peers in terms of indicating deficiencies

Feedback from peers

1. peers' bringing different viewpoints in feedbacks about microteaching
2. peer feedbacks' creating opportunity to understand strengths and weaknesses about microteaching
3. studious and careful explanations in feedbacks given by the majority of peers
4. existence of few peer assessment forms filled carelessly with inadequate feedback
5. remote friends' filling assessment forms more fairly

Issues in being assessed with MAF by peers

1. contradiction in feedbacks
 - surprising
 - originating from different viewpoints of peers
 - contradiction between assessments done by observing from real class and from video
 - assessors' not understanding or following microteaching in some occasions
2. problematic form filling habits
 - peers' leaving blank or filling superficially the comments part
 - not explaining the reasons of ratings in comments part
 - not clearly specifying the missing points in microteaching, rather generally specifying superficial points and striking things
 - perceiving this part as optional
 - problems regarding filling the rating part
 - not using the choice of "not applicable" at all
 - expecting from microteaching performer to explicitly display and verbalize or emphasize criteria in the assessment form
 - expecting from microteaching performer to employ a "formal" assessment
 - expecting certain sequence in instructional events because of the structure of the form
3. unfair assessment
 - not assessing fairly
 - behaving emotionally and not knowing to assess
 - criticizing as if microteaching performer taught to authentic pupils
 - writing always positive and excellent things and giving higher ratings to close friends

- giving higher ratings to performers due to possibility of negative effect of low ratings on grading policy
- filling assessment forms under the influence of communication skills and individual characteristics of performers
- harmfulness of assessing microteachings too much optimistically in the future

Preferences of written or oral feedbacks to microteaching

1. written feedback as a must and more preferred
 - retentive and contributed to write self-reflection assignment
 - more objective, anonymous, possession/holding of unspeakable things
2. need of oral feedback with limitations in mind
 - need of 5-10 minute discussion/comments after each microteaching performance and its assessment with form,
 - need of recording oral feedback
 - discussing the critical points in assessments in the next meeting
 - problems with oral feedback
 - not as detailed as in written format, be more general
 - some anxieties about oral feedback to make peers speak unfairly
 - possibility of negative influence of offensive words and negative comments
 - possibility of defending mood of presenter
 - possibility of engaging preservice teachers in long lasting discussion

Suggestions

1. increasing fairness of assessments
 - necessity of emphasizing fair assessment
 - possibility of more fair assessment if one selects peers to assess one's microteaching
 - high appreciation of exclusion of peer assessments in grading policy
 - increasing fairness and trueness of both assessment and feedback
 - peers not being experts
2. orienting/training preservice teachers about assessing and corrective feedback
 - frequently explaining the importance of assessment and the necessity of corrective feedbacks
 - stressing the necessity of explaining the reasons of ratings
 - clearly informing them about exclusion of peer assessment (ratings) in grading policy

(RQ 2.5) A SELF-REFLECTION ASSIGNMENT, WHICH INVOLVES ANALYZING FEEDBACK GIVEN BY THE INSTRUCTOR, TEACHING ASSISTANTS AND PEERS

Contributions and Challenges of Doing the Self-reflection Assignment

1. necessary of self-reflection assignment to complete microteaching process for recapping and coming to a conclusion
 - internalization and retention of what they learned about instructional planning and teaching skills
 - making them aware of the meaning of feedback they received in microteaching planning process
 - providing to express oneself like a self-review
2. well-designed, well-structured, prepared professionally, comprehensive and effective in the proper sense
 - providing a complete understanding of what were expected from them, which eases their assignments
 - with its detailed guide, leading to easily write detailed and organized self-reflection assignment
 - with seriously demanding analysis, leading preservice teachers to take the assignment seriously
 - shortening the period of completing the assignment

Watching One's own Microteaching Performance from Video

1. Contributions:
 - Providing to put microteaching performer in assessor's shoes
 - recognizing one's own intonation
 - giving opportunity to get aware of one's strengths and weaknesses
2. Challenges:
 - not very useful and important, enabled just to focus on intonation, gestures and postures

Analyzing Assessments and Feedbacks and Responding to them

1. Contributions:
 - enabling to evaluate themselves
 - helping to get aware of one's own deficiencies after conducting data analysis
 - promoting to develop alternatives for compensating one's own deficiencies
 - guiding how to analyze quantitative data
 - opportunity of deeply understanding strong and weak points
 - opportunity to respond criticisms and defending oneself
 - providing to think on the feedbacks to compensate their weaknesses
 - contributed to one's own teaching style by means of responding peers' and instructor's comments
 - providing self-criticism, to self-evaluation, and self-reviewing
 - helping to decide strong and weak points of microteaching performance to discuss in the self-reflection essay
2. Challenges:
 - peers' not seeing the responses to feedbacks, but only the instructor's
 - waste of time since it is enough to read strong and weak sides in the forms

Writing Self-reflection Essay

1. theoretical framework
 - necessary and useful to give clues for theories and their founders
 - important as a guide not to lost
 - a summary of what they have learned for years and it reminded prior knowledge
 - it is not necessary to connect practice to psychological developmental theories
2. writing self-reflection essay
 - making aware of which theoretical approach underlies their microteaching
 - nice to expect from them to realize the relationships between theory and practice
 - no difficulty in combining research and theory once teaching strategies are selected in conformity with certain theoretical approach
 - being challenged with relating theory and their strongest and weakest sides
 - finding writing self-reflection essay boring
 - not paying much attention on to theories
 - not understanding what was expected and what exactly to do in terms of relating practice to theory

Suggestions for self-reflection assignment

- implementing it in next semesters
- dividing into two parts since it is cognitively loaded
- focusing only on negative feedback when analyzing feedbacks and responding to them
- giving information and implementation of theories before the microteaching planning, then associating theory and practice can be done better

APPENDIX N

STRONG SIDES AND WEAK POINTS OF 12 INTERVIEWEES' PERFORMANCE IN TEACHING PRACTICE

(stated by teaching assistants)

	<i>Strong Sides</i>	<i>Weak Sides & Suggestions</i>
Introduction to lesson	<p>Made an appropriate intro to lesson S2, S41, S46 Good introduction to the lesson by talking about daily events with pupils S10, S44 Used an animation to warm up pupils S27 Informed objectives of the lesson S10, S43 Gave handout which illustrates the final product student will do at the end of the lesson was good since students understood what was expected from them S24 Provided pupil motivation by introducing the lesson with an interesting, hot topic S9, S46 Motivated students very well S10, S12, S44 Made the learning activity meaningful by presenting it as a solution to a real life problem S41 Played game with kindergarten pupils. They enjoyed the lesson a lot S21 Connecting with and reviewing the previous lesson S10, S2, S27, S43 Recalled prerequisite skills through reviewing them S9</p>	<p>Realized that pupils have low motivation but he could not motivate at all. The activity was not enjoyable and the lesson was in the last week of the semester. He should have developed strategies to increase motivation of pupils S24</p> <p>Did not give enough time to pupils to think on correct answers of questions, and answered herself (at the beginning) S41</p>
Core of the lesson	<p>Learning activities Taught in accordance with students level very successfully S10, S21, S43 Made pupils play a game which gained attention of pupils; Sometimes he made pupils play game with hand-arm movements. He made the course enjoyable. S21 Kept pupils' attention by asking different questions to each pupil. She did not ignore any questions from the pupils. Activities and transitions in the lesson components were appropriate for pupils' level S43 Good endeavor to gain attention by giving examples from students' daily life S47</p>	<p>The activity should have been more attractive 24</p> <p>Talked while the video was being watched, thus pupils could not understand what he talked and got bored S47</p> <p>Presented only one example in the activity, no more example during the lesson S24</p>
	<p>Teaching strategies, methods & techniques, Used methods very well, effectively S10, S44 Used question and answer method effectively S10 Asked questions which enhanced pupils' thinking after her anxiety had diminished S41 Gave the lecture perfectly S12</p>	<p>Applied a totally behaviorist approach S12 Not variety in teaching methods, but using the same method (only demonstration but not question-answer etc.). Using demonstration technique without necessary guidance, not controlling whether students understood or not, and not repeating demonstration while necessary S24 Erroneous use of question and answer method Asked new questions without taking responses for the previous one, he should have waited for responses and he should have asked more motivating questions S2 Preferred to give directly the right answer rather than making students find the answer S9</p>

Appendix N continued

	<p>Materials The materials are appropriate for the instructional purpose and understandable and attractive for pupils, they are well-prepared and effective materials (visuals, slides, etc.) S10, S2, S47, S41, S44, S46</p>	<p>The sample material would be more effective if its theme was related to the activity that students done S2 There were no materials that he prepared S27</p>
	<p>Practice and feedback Provided active participation of all the pupils S27 Guided them in finishing the activity S44 Coached pupils who need help one-by-one S10, S27, S21, S9 Gave appropriate feedback S27, S44 Provided positive reinforcement who correctly answers questions (e.g. saying well-done) S10 Gave effective feedback S10 Provided pupils to realize their mistakes without offending them S43</p>	<p>Very inadequate monitoring and feedback to practice of pupils S24 Was a bit slow and inadequate in giving feedback S2 Lost time with explanations to individual pupils. Should have made explanations to the whole class for common problems, Interests of pupils who need feedback diminished since they could not take the answer to their questions immediately, thus they began to talk each other S9</p>
Assessment and Closure	<p>Assessment Used question and answer method S10 Glanced the presentations that pupils developed S2 Assessed through observation S27 Gave homework and made explanations about it S10</p>	<p>Limited assessment due to time restriction S2 Changed assessment strategy that he stated at the beginning towards the end of lesson. This resulted in students' not seriously considering the work for assessment. There was no a ready form for assessment (lack of rubric) S47 Did not use a clear assessment strategy. Question-answer method was useful for assessment during lecture part, but the assessment in activity part was inadequate S9</p>
	<p>Summarizing Summarized the topic, underlined major points of the lesson S10, S2</p>	
In general	<p>Classroom management Classroom management was perfect S12, S21 Used effective strategies to stop noise in the classroom (talking to students who make noise and keeping the game close until the silence is provided, saying them he would open it if they behave smartly). He made two pupils who were fighting conciliated by using quite appropriate methods S21 Controlled the classroom easily because of small number of students in the classroom S27</p>	<p>Has lack of classroom management strategies and skills S24 Could not get rid of problems stemming from the structure of the classroom. Most of the time he turned his neck to most of the students S9</p>
	<p>Communication skills Communication with the pupils was very good S10, S46, S21 Communicated each pupil individually S46, S44 Established eye-contact S10, S2, S44 Calling students with their names S10 Teaching in standing position S10 Speech Intonation was good S10, Intonation was very soft S21, S44 Emphasized important parts with intonation S10</p>	<p>Could not communicate pupils. Teaching and presenting skills are inadequate S24 Communication with students were not fluent S2 Speech (voice tone, mimics, intonation, diction) were very inadequate, should be developed S24 At the beginning he had difficulty in adjusting intonation S9</p>
	<p>Anxiety</p>	<p>Had high anxiety S2 Had some anxiety S41</p>
	<p>Mannerism Her attitudes toward pupils were positive S44, S43 Called pupils with lovely words S46 There was a harmonic collaboration between her and pupils. The classroom atmosphere was untroubled S43</p>	<p>Not warm towards students S24 Very authoritarian S12</p>
	<p>Dress and posture Dressing and posture was smart S2, S43</p>	

Appendix N continued

	<p>Time management Used time effectively and efficiently. General flow and speed was very successful S43 Tailored flow and speed of lesson to students' responses and questions, Prepared well S2</p>	<p>Experienced problems with time management S2 Not a well-prepared lesson S24</p>
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APPENDIX O

MICROTEACHING ASSESSMENT FORM (REVISED)

Değerlendirenin Öğrenci Numarası:

Mikroöğretim yaparın Adı, Soyadı:
Hedef sınıf: Dersin amacı:

MİKROÖĞRETİM AKRAN DEĞERLENDİRME FORMU

Sınıf arkadaşınızı mikroöğretiminin lütfen mümkün olduğunca bir **objektif** biçimde değerlendirmiz. Aşağıdaki tabloda verilen kriterlere göre arkadaşınızın performansının ne derece iyi olduğunu ilgili kutuyu "X" ile işaretleyerek belirtiniz. Eğer bir performans kriterinin uygulanması bu derste mümkün değil ise o kriter için "Uygulanamaz" seçeneğini işaretleyiniz.

DERSİN ASAMALARI VE PERFORMANS KRİTERLERİ	Çok İyi (4)	İyi (3)	Orta (2)	Yetersiz (1)	Hiç yok (0)	Uygulanamaz	DÜZELTİCİ DÖNÜTLER Lütfen, verdiğiniz puanları gerekçelendiriniz! (En az beş kriter için)
Dersin Giriş							
Öğrencileri öğrenmeye motive edecek strateji(ler) kullandı							
Uygulama (Dersin işleniş ve etkinlikler)							
Uygun* örnek kullandı							
Uygun* öğretim yöntemleri ve teknikleri kullandı							
Uygun* öğretim materyalleri kullandı (sunum, çalışma kağıdı, görseller, vb.)							
Uygun* örnekler verdi							
Dersi Sonlandırma ve Değerlendirme							
Uygun* bir değerlendirme stratejisi kullandı (örnekleme/sofomal)							
Dersin önemli noktalarını özetledi/vurguladı							
Gelecek dersle bağlantı yaptı (Açıklama, Ev ödevi vb.)							
Genel Olarak							
Dersin amacını ve hedeflerini bildirdi							
Öğrencilerin ön bilgilerini hatırlattı							
Konuyu öğrencinin günlük hayatı ile ilişkilendirdi							
Öğrencilerin aktif katılımını sağlayacak stratejiler kullandı							
Uygun* dönüt verdi /düzeltilme yaptı							
Zamanı etkili kullandı							
Kılık – kıyafet (gizim, duruş, tarz?)							
Öğrencilere yönelik davranışları, yaklaşımı (tavır ve tutumları?)							
İletişim (konuşma, göz teması, mizah, el ve kol hareketleri)							
GENEL OLARAK DERS NA SİLDİ?							

* Bu değerlendirme formunda bütün "uygun" sözcükleri, "dersin öğretim amaç ve hedefleri ile öğrencilerin seviyesine uygun" anlamında kullanılmıştır.

Bu mikro öğretim performansının, sence, **en iyi kısmı/kısımları** neydi/nelerdi?

Bu kısmı/kısımları **neden** iyi buldun, açıklayabilir misin?

Bu mikro öğretim performansının, sence, **en zayıf kısmı/kısımları** neydi/nelerdi?

Bu zayıf kısmı/kısımları **neden** zayıf buldun? Bu kısmın/kısımların güçlendirilebilmesi için **arkadaşına önerilerde bulunabilir misin?**

Arkadaşına mikro öğretim performansı hakkında söylemek istediğin başka **övgü, eleştiri veya önerilerin** varsa, buraya yazabilirsin:

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Şahinkayası (Yıldırım), Hamide
Nationality: Turkish (TC)
Date and Place of Birth: 02 July 1976, Ankara
Marital Status: Married
email: hsahinkayasi@gmail.com

EDUCATION

Degree	Institution	Year of Graduation
Ph.D.	METU – Comp. Educ. & Inst. Tech.	2003-2009
MS	METU – Comp. Educ. & Inst. Tech.	1999-2002
BS	METU – Computer Education	1994-1999
High School	Bolu Anatolian Teacher High School	1990-1994

WORK EXPERIENCE

Year	Place	Enrollment
2009-	Mustafa Kemal University	Part-time instructor
2006-2007	The Ministry of National Education	Computer teacher
1999-2006	Faculty of Education, METU	Research assistant

FOREIGN LANGUAGES

English (advanced level), Italian (elementary level)

PUBLICATIONS

M. S. Thesis

Yıldırım, H. (2002). Student perceptions on a web-enhanced introductory chemistry course: a case study. Unpublished MS, METU, ANKARA.

Proceedings

Yukselturk, E., Top, E., & Sahinkayasi, H. (2005), Instructional Design Model for Online Certificate Programs (OCEP-ID), *Proceedings of Association for Educational Communication and Technology*, International Convention - Exploring the Vision 2005 (pp 558-563), Orlando, FL, USA: (AECT)

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Şahinkayası, H. (2004). Web-destekli bir genel kimya dersi hakkında öğrencilerin algıları: bir durum çalışması. Paper presented at *XIII. Ulusal Eğitim Bilimleri Kurultayı*, 6-9 Temmuz 2004, İnönü Üniversitesi, Eğitim Fakültesi, Malatya.

SPARE TIME ACTIVITIES

Performing Turkish folk music, traveling, and playing tennis.