

LEARNING HOW TO CREATE LESSON PLANS: FIRST YEAR PRESERVICE
MATHEMATICS TEACHERS' EXPERIENCE IN UNIVERSITY WITHIN
SCHOOL MODEL

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ABSTRACT

LEARNING HOW TO CREATE LESSON PLANS: FIRST YEAR PRESERVICE MATHEMATICS TEACHERS' EXPERIENCE IN UNIVERSITY WITHIN SCHOOL MODEL

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The aim of this study was to examine how first year preservice mathematics teachers (PSMTs) in different levels integrate feedback given by a course instructor and classmates into their lesson plans. Moreover, the study investigated how PSMTs evaluated their performance during lesson planning process. The case study design was used to get detail information about first year PSMTs' experience in University within School Model. Seventeen freshmen preservice mathematics teachers who were enrolled in Undergraduate Programme in Mathematics Education Department at a foundation university were selected via purposive sampling method. According to third draft of lesson plans, PSMTs were categorized as high and low levels. Data was collected in the fall semester of the 2018-2019 academic year through three drafts of lesson plans, voice records of meetings with the course instructor, field notes from observations, semi-structured interviews, and survey. These data collection tools except semi-structured interviews were applied to all participants in the study. At the end of the semester, semi-structured interviews were conducted

with two pairs. An existing theoretical framework of Fink's integrated course design (2003) was used to analyze data.

The findings of this study explored that a vast majority of given feedback by the course instructor focused on selecting appropriate teaching/learning activities and consideration for possible problems including students' different thinking. In this regard, University within School Model was suggested to implement since this model encourages freshmen PSMTs via one-to-one teaching. Therefore, PSMTs who are enrolled in a university implementing this model gain experience in the field earlier.

Keywords: Lesson Plans, Lesson Planning Process, Mathematics Education, Preservice Mathematics Teachers, University within School Model

ÖZ

DERS PLANI OLUŞTURMAYI ÖĞRENME: ÜNİVERSİTE BİRİNCİ SINIF MATEMATİK ÖĞRETMEN ADAYLARININ OKULDA ÜNİVERSİTE MODELİ DENEYİMLERİ

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Bu çalışmanın amacı, farklı seviyelerdeki üniversite birinci sınıf matematik öğretmen adaylarının, ders öğretmeni ve sınıf arkadaşları tarafından verilen geri dönütleri ders planlarına nasıl dahil ettiklerini araştırmaktır. Ayrıca, matematik öğretmen adaylarının, ders planlama süreci boyunca kendi performanslarıyla ilgili değerlendirmeleri de incelenmiştir. Üniversite birinci sınıf matematik öğretmenlerinin okulda üniversite modeli deneyimleriyle ilgili detaylı bilgi elde etme amacıyla durum çalışması yöntemi kullanılmıştır. Bir vakıf üniversitesinin İlköğretim Matematik Öğretmenliği Bölümü'ne kayıtlı olup üniversite birinci sınıfta olan on yedi matematik öğretmen adayı amaçlı örneklem yöntemiyle seçilmiştir. Öğretmen adayları, ders planlarının son haline göre yüksek ve düşük seviyeli olarak gruplandırılmıştır. Veriler, 2018-2019 akademik yılının güz döneminde ders planlarının üç farklı taslağı, dersin öğretmeniyle yapılan görüşmelerin ses kayıtları, yapılan gözlemlere dayalı alan notları, yarı-yapılandırılmış görüşmeler ve anket aracılığıyla toplanmıştır. Yarı-yapılandırılmış görüşmeler haricindeki tüm veri toplama araçları, çalışmadaki katılımcıların hepsine uygulanmıştır. Dönem sonunda,

öğretmen adaylarının iki çiftiyle yarı-yapılandırılmış görüşmeler yürütülmüştür. Fink (2003)'in kuramsal çerçevesi olarak ortaya çıkan bütünleştirilmiş ders tasarımı, verilerin analizi için kullanılmıştır.

Çalışmanın bulguları, dersin öğretmeni tarafından verilen geri dönütlerin çoğunlukla uygun öğretme ve öğrenme etkinliklerini seçme ve öğrencilerin farklı düşünme yollarını içeren olası problemleri değerlendirme üzerine olduğunu ortaya çıkarmıştır. Bu bağlamda, Okulda Üniversite Modeli'nin uygulanması önerilmiştir çünkü bu model, üniversite birinci sınıf matematik öğretmen adaylarını birebir öğretme aracılığıyla destekler. Bundan dolayı, bu modeli uygulayan bir üniversiteye kaydolan öğretmen adayları, alanda tecrübeyi daha erken kazanır.

Anahtar Kelimeler: Ders Planları, Ders Planlama Süreci, Matematik Eğitimi, Matematik Öğretmen Adayları, Okulda Üniversite Modeli



To My Family

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LIST OF ABBREVIATIONS

ABBREVIATIONS

PST	Preservice Teachers
PSMT	Preservice Mathematics Teachers
PCK	Pedagogical Content Knowledge
METU	Middle East Technical University
MoNE	Ministry of National Education

CHAPTER 1

INTRODUCTION

Lesson plans are the first step to begin teaching, so learning and teaching are supported by means of lesson plans prepared by teachers. It has been revealed that well prepared lesson plans increase the effectiveness of a lesson (Jalongo, Rieg, & Helterbran, 2007). While designing these lesson plans, teachers as authorities follow a path developed by experts in the field of lesson planning. Even though different steps are suggested to be followed in different lesson planning models, these models actually include similar important components. In this regard, Tyler's (1949) rational-linear model is seen as a base to construct a lesson plan. According to this model, four main points are defined as follows: objectives, selection and organization of learning activities and evaluation methods in lesson plans (Richards, 1998). Other lesson planning models are mostly developed in accordance with Tyler's model by giving more details under these main steps. Purgason (1991) claims that components of a lesson plan are categorized as content, materials, activities, sequence among given activities, and timing. Moreover, Yinger (1980) collects steps of the lesson plan under three main points including objectives and problems' solutions, as well as evaluation and application of the plan.

Brown (1988) states that lesson plans are designed by experts. Teachers as authorities in classrooms focus on multiple points which can be changed in different circumstances. For example, size of a classroom and number of students are significant factors to be considered for effective learning and teaching. Therefore, teachers organize the most appropriate lesson plan to make learning efficient for students by considering the relation between physical situations of classrooms and

number of students in these classrooms. Also, lesson plans are created to support effective teaching in the classroom environment (Rusznyak & Walton, 2011).

Another essential point in the process of lesson planning is to realize the significance of students' role. Therefore, teachers focus on students in terms of their learning levels, ages and grades, their thinking ways, and their needs (Ignatovich, Cusick, & Ray, 1979; McCutcheon, 1980). During lesson planning process, PSTs take students' thinking into consideration. According to the results of a study on lesson planning, identifying students' different thinking ways is seen as the most challenging part of lesson planning (Sahin-Taskin, 2017). While deciding activities, teachers think about students' interests so they select suitable activities to raise students' attention during the lesson. Furthermore, identifying examples, materials, and teaching strategies placed in lesson plans is based on students' developmental learning process (Brown, 1988).

Lesson plans help to organize flow of a lesson during teaching and learning period (Richards, 1998). Therefore, lesson plans play an important role by describing the flow of the lesson (Richards, 1998), which means that lesson plans affect lesson design to a great extent. According to the literature, researchers construct various types of lesson designs via lesson plans such as integrated course design developed by Fink (2003). In this design, there are three key components: learning goals, teaching and learning activities, and feedback and assessment. Moreover, the integrated course design has three phases including twelve steps related to lesson planning. It starts with initial phase involving the combination of situational factors, learning goals, feedback and assessment procedures, and teaching and learning activities. Also, the integrated course design continues with intermediate phase including integration of structure for the course and teaching strategy. The last phase named as the final phase is related to evaluation by means of grading system, possible problems and syllabus. These steps are explained in Chapter 2 in detail and the integrated course design is selected as a framework while analyzing the data in the present study. This means that only the steps related to the data are chosen to categorize the data.

In brief, even if lesson plans are seen as basis of an effective teaching, lesson planning is challenging especially for preservice teachers. During the lesson planning process, PSTs should think about lessons from all aspects including internal and external factors which affect students' learning. It means that lesson planning involves consideration of different situations related to learning and teaching (Richards, 1998). In learning and teaching processes, students and teachers play an important role together. According to the literature, PSTs generally prepare lesson plans by using a template presented by a course instructor (Zingir Gulten, 2013). During designing a lesson plan, they may organize lesson plans in a group with 2 or 3 PSTs without feedback from a course instructor. At the end of this process, the course instructor evaluates these lesson plans in accordance with a rubric given to PSTs before the lesson planning process. On the other hand, some studies include feedback from PSTs about lesson plans via classroom discussions. Therefore, all PSTs give feedback about lesson plans prepared by PSTs in another group. By considering this feedback, lesson plans revised after classroom discussions are checked. When literature is reviewed, it has been observed that studies in the field of lesson planning process including both meetings with the course instructor and classroom discussions with PSTs' peers are quite limited. Therefore, the present study shows how to integrate feedback given by the course instructor and classmates into lesson plans.

1.1. The Purpose of the Study and Research Questions

In the present study, PSMTs' lesson planning experience in University within School Model was presented. In the context of the study, it includes meetings with the course instructor and classroom discussions with preservice mathematics teachers (PSMTs) in the same classroom. The first step of the study is meetings with the course instructor. These meetings are helpful to define revisions on lesson plans prepared before and after meetings with the course instructor. The second step of the current

study is related to classroom discussions at the university. It helps to see revisions on lesson plans prepared during their engagement in classroom discussions at the university. It means that feedback given by the course instructor and PSMTs' peers is the most important point in the current study. Therefore, main purpose of the present study is to investigate how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans. The second main purpose of the current study is to examine PSMTs' evaluation about their lesson plans and their performance during lesson planning process. Therefore, research questions constructed in parallel with these two main purposes are addressed below:

- 1) How do first year PSMTs integrate given feedback into their lesson plans?
 - 1.1) What kind of differences are seen between constructed lesson plans by PSMTs in high and low levels?
- 2) How do first year PSMTs evaluate their performance during their engagement in lesson planning process?

1.2. Significance of the Study

Lesson plans provide a flow of a lesson by following steps of a path (Whitton, Sinclair, Barker, Nanlohy, & Nosworthy, 2004). By considering the steps of a lesson, lesson planning is defined as a complicated process (Sahin-Taskin, 2017). The importance of lesson plans in education is described as necessary to create an effective learning environment (Sahin-Taskin, 2017; Johnson, 2000). According to previous studies, there is a significant relation between preparing a qualified lesson plan and creating an effective learning-teaching environment for both students and teachers (Sahin-Taskin, 2017; Rusznyak & Walton, 2011). Thus, teacher education programs should focus on preservice teachers' lesson planning skills to support an effective learning environment for students (Sahin-Taskin, 2017). From this point of view, the findings of the study could yield an overall view of important components of an effective lesson plan and steps of lesson planning process. In the light of the findings of the present study, important information and implication might be given

to teacher educators and program developers in terms of improving preservice teachers' lesson planning.

Moreover, recent studies generally focus on understanding how to plan a lesson, how to construct a lesson planning process, how to compare different teacher groups in terms of lesson planning and how to handle with struggles teachers face while planning a lesson. In order to identify the lesson plan's steps, Tyler (1949) suggests the most popular lesson plan model called as rational-linear model. This model includes four main points related to "specifying objectives, selecting learning activities, organizing learning activities, and specifying methods of evaluation" (p.31) respectively (Richards, 1998). The present study gives an opportunity to see how preservice mathematics teachers in high and low levels prepare a lesson plan by considering different components of an effective lesson plan. The findings of the current study might be helpful for teacher educators in terms of interpretations of lesson plans prepared by PSMTs.

Meetings and discussions are important factor in order to create a lesson plan. Fink emphasized that people make meanings via their experience and this meaning-making process might be accomplished effectively via spending time with other people in the community (2013). People live in a society and they understand other people's ideas and feelings by means of discussions. In literature, Namdar and Kucuk (2018) conduct a study with 51 second year preservice science teachers. The purpose of their study was to investigate PSTs' skills while discussing about lesson plans prepared in accordance with 5E lesson plan model. According to Bybee et al. (2006), there are five phases of a lesson plan which start with the letter 'E': Engage, Explore, Explain, Elaborate, and Evaluate. In this study, PSTs evaluate lesson plans designed by other groups of PSTs. Findings of their study support the idea that classroom discussions are helpful to improve lesson plans (Namdar & Kucuk, 2018). However, there is no result to examine how meetings with the course instructor and classroom discussions with other PSTs play a role in PSTs' integration in terms of organization of lesson plans during their engagement in lesson planning process. In the present study, during lesson planning, PSTs interact with their peers and the course

instructor. Therefore, it is believed that the present study will contribute to the literature through the investigation of PSMTs' integration into lesson plans via meetings with the course instructor and classroom discussions with their classmates.

In addition, preservice teachers claim that lesson planning process is challenging (Sahin-Taskin, 2017). The reason of this challenging process is that PSTs might not have enough experience to understand how students think and how students feel. Therefore, PSTs should spend time with students to realize students' needs during learning and teaching period (Sahin-Taskin, 2017). The most difficult part while planning a lesson is seen as possible students' thinking, which shows the significance of internship programs during teacher education. In the light of the results of the present study, internship programs presented with the help of "University within School Model" might be helpful to PSMTs in terms of identifying possible students' thinking. This model is appeared when programme developers need to construct a new teaching/learning method for preservice teachers. University within School Model was planned to support preservice teachers in terms of gaining a new perspective as a teacher and realizing students' needs via internship program. Therefore, it helps to develop pedagogical content knowledge (PCK) of preservice teachers. Shulman (1986) defined PCK as "the ways of representing and formulating the subject that make it comprehensible to others" (p.9). This model gives an opportunity to PSTs to feel like a teacher in a real classroom by means of one-to-one teaching and tutoring students, which encourages pedagogical content knowledge of preservice mathematics teachers. According to the model, each preservice teacher tutors students during each semester in their education year. Therefore, even freshmen PSTs have an opportunity to study with students. Implementation of internship program is not usual for freshmen PSTs at each university since most of universities have internship program just for senior PSTs. Thus, PSTs' experience in University within School Model is so important to see applications of teacher education programs at a university implementing University within School Model. In accordance with the model, freshmen PSTs have experiences to apply lesson plans prepared by themselves. To sum up, University within School Model supports

integration of lesson planning and internship programs for PSTs (Özcan, 2013) from the first semester they are admitted to the program. Thus, participants in the current study are selected from a university which applies “University within School Model”. This model makes the current study significant in terms of teacher education program among 90 programs in Turkey. In the light of the findings of the present study, this model might be used in teacher education programs at various universities.

To sum up, the present study is an important endeavor to fill the gaps from all these perspectives into consideration. In the next chapter, literature review is provided.



CHAPTER 2

LITERATURE REVIEW

The purpose of the present study was to reveal how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans. Moreover, it was investigated how first year PSMTs evaluate their performance during their engagement into lesson planning process. In this chapter, lesson planning and teacher education, and previous studies are presented. Also, literature including definitions of terms used in the current study is shown in the part of conceptual framework in this chapter. At the end of the chapter, a summary of the literature review is provided.

2.1 Lesson Planning

Lesson plans include some steps to follow while constructing a lesson. Lesson plans can be categorized as yearly, term, unit, weekly, and daily lesson plans (Yinger, 1980; Farrell, 2002; Ornstein, 1997). Richards (1998) claims that lesson planning gives an opportunity to “resolve problems and difficulties, to provide a structure for a lesson, to provide a ‘map’ for the teacher to follow, and to provide a record of what has been taught” (p.103). McCutcheon (1980) examined reasons of lesson planning under two categories: internal and external reasons. Internal reasons include “to feel more confident, to learn the subject matter better, to enable lessons to run more smoothly, and to anticipate problems before they happen” (Richards, 1998, p.31). On the other hand, the principal’s expectation for effective lessons and consideration for students’ needs are seen as external reasons (McCutcheon, 1980). For these reasons, researchers constructed lesson planning models.

Even though different lesson planning models include various components, these components actually are similar. Literature reveals that Fink's integrated course design model support the transition from teaching to learning (Zhang, Purcell, & Zhang, 2012). Therefore, it helps to construct student-centered lessons in order to improve students' learning (Allen & Tannert, 2007; Fallahi, 2011). In order to enhance student learning, Zhang, Purcell, and Zhang (2012) applied Fink's integrated course design. During their study, students usually face with real-life scenario in order to supply a student-centered learning environment. The findings of this study show that Fink's integrated course design model was insightful guidance in terms of identification of teaching/learning strategies and learning outcomes. According to the students' feedback, this process prepared them for real-life since students felt confident by means of daily-life scenario (Zhang, Purcell, & Zhang, 2012). In order to compare a traditional lecture-based course and course redesigned usign Fink's integrated course design, Fallahi (2008) also conducted another research. In this study, there were two participant groups in terms of course designs. One of the group took traditional course while another group took the Fink's integrated course. Before and at the end of the study, both of the groups had same pre- and post-test. Fallahi's (2008) research considered course goals and domains of advanced learning for two participant groups. The findings of this study demonstrate that students in the course including Fink's integrated course design showed significantly improvement in terms of achieving goals and advanced learning (Fallahi, 2008). Therefore, components of Fink's integrated course design were considered while analyzing data in the current study. In the following section, Fink's integrated course design is explained in detail.

2.1.1 A Conceptual Framework for Lesson Planning

Literature shows that lesson and course planning basically includes same components such as "considering the students, thinking of the content, materials and activities that could go into a course or lesson" (Woodward, 2001, p.1). In order to

enhance planning a course or lesson, models were improved and one of this model is integrated course design (Fink, 2003). Fink (2003) developed integrated course design by considering three key features: learning goals, teaching and learning activities, and feedback and assessment. These components are represented in Figure 2.1.

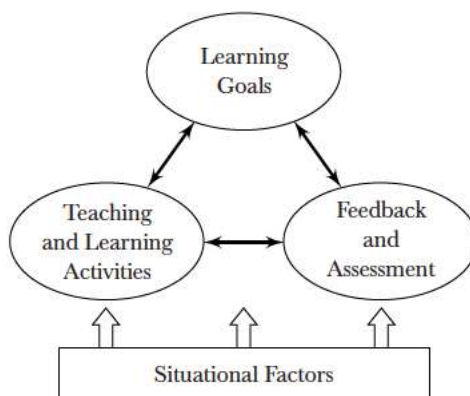


Figure 2. 1: Key components of integrated course design (Fink, 2003)

According to this design, literature suggests that feedback and assessment stage comes before teaching and learning activities, which is named as “backward design” by Wiggins (1998). In this design, a teacher seeks an answer first for “What is it I hope that students will have learned, that will still be there and have value, several years after the course is over?” (Fink, 2003, p. 63). Answers of this question are labelled as “learning goals”. After this stage, the teacher explores an answer for “What would the students have to do to convince me that they had achieved those learning goals?” (Fink, 2003, p. 63). This question helps to see evaluation of learning, which means that the answer to this question represents “feedback and assessment”. Moreover, after getting the answer for evaluation, one stage would be back to clarify the course. Therefore, the teacher explains clearly the answer of the question which is “What would the students need to do during the course to be able to do well on these assessment activities?” (Fink, 2003, p. 63). Fink (2003) developed the integrated course design in accordance with this backward design

(Wiggins, 1998). In the present study, all these three key components of integrated course design were used to analyze lesson plans prepared by PSMTs.

While designing a course by considering the integrated course design, there are three main phases: build strong primary components, assemble the components into a coherent whole, and finish important remaining tasks (Fink, 2003). Furthermore, twelve steps under these main phases are represented in Table 2.1.

Table 2. 1: The Twelve Steps of Integrated Course Design (Fink, 2003, p. 1)

Initial Phase: BUILD STRONG PRIMARY COMPONENTS	
1.	Identify important <i>situational factors</i>
2.	Identify important <i>learning goals</i>
3.	Formulate appropriate <i>feedback and assessment procedures</i>
4.	Select effective <i>teaching and learning activities</i>
5.	Make sure the primary components are <i>integrated</i>
Intermediate Phase: ASSEMBLE THE COMPONENTS INTO A COHERENT WHOLE	
6.	Create a thematic <i>structure for the course</i>
7.	Select or create a <i>teaching strategy</i>
8.	Integrate the course structure and the instructional strategy to create an <i>overall scheme of learning activities</i>
Final Phase: FINISH IMPORTANT REMAINING TASKS	
9.	Develop the <i>grading system</i>
10.	Debug the <i>possible problems</i>
11.	Write the course <i>syllabus</i>
12.	Plan an <i>evaluation</i> of the course and of your teaching

Initial Phase: Build Strong Primary Components

This phase consists of three main components of the integrated course design: learning goals, feedback and assessment measures, and teaching and learning activities in accordance with Wiggins' backward design (Fink, 2003). Also, in order to construct a lesson, the initial phase includes five steps presented in Table 2.1.

The first step of the initial phase is about identifying situational factors. Situational factors play an important role to construct an effective lesson so these factors should be specified before designing the lesson (Fink, 2003). Fink (2003) suggests that there are six significant components of situational factors: specific context of the teaching and learning situation, expectations of external groups, nature of the subject, characteristics of the learners, characteristics of the teacher, and special pedagogical challenge. In the current study, situational factors are not used in data analysis process.

The second step of the initial phase is labelled as "learning goals" (p.73) which includes the taxonomy of significant learning. According to this taxonomy, there are six important areas to be considered while constructing learning goals. These areas are defined as "foundational knowledge, application, integration, human dimension, caring, and learning how to learn" (Fink, 2003, p. 74). Fink (2003) also claims that being creative and using learning activities play a significant role while identifying learning goals. In the current study, "learning goals" is used to label given feedback including objectives identified by MoNE.

Formulating feedback and assessment procedures is the third step of the initial phase. This step includes evaluation of learning with different methods like traditional methods such as midterms and finals (Fink, 2003). Fink (2003) suggests that assessment may be developed by means of changing perspective to the learning goals. It means if teachers see the learning goals in different ways, assessment for learning may have various techniques. For example; identifying criteria and grades for each part of students' work as well as self-assessment activities may be improved while evaluating students' learning (Fink, 2003). In the present study, given feedback

and assessment is divided into two groups: forward-looking and backward looking assessment.

Teaching and learning activities represent the fourth step in integrated course design. Fink (2003) claims that when students have experience by “doing” and “observing”, students would have a chance to improve. Also, teaching and learning activities are prepared by realizing importance of students’ thinking such as what they think and what they feel (Fink, 2003). Fink (2003) also supports active learning in the classroom and outside of the classroom. From this aspect of view, activities involving students’ learning process and students’ performance in the current study are categorized under teaching/learning activities. Next step is about integrating the primary components. In this step, teachers should make sure that first four steps are placed into the integrated course design (Fink, 2003).

Intermediate Phase: Assemble the Primary Components Into a Coherent Whole

Intermediate phase consists of three steps: course structure, teaching strategy, and overall set of learning activities.

In order to construct an effective lesson, significant steps related to the topic should be identified and a sequence among these steps should be constructed (Fink, 2003). Therefore, Fink (2003) claims that course structure is mostly about sequence from basic to complex to provide improvement of a lesson gradually. Similarly, in the present study, order of questions, examples, and activities from simple to complex is analyzed as lesson structure.

Teaching strategy is the next step for the integrated course design, which is “a particular combination of learning activities in a particular sequence” (Fink, 2003, p. 130). According to given definition of teaching strategy, the most important detail is to explore an integration of learning activities in terms of sequences and to create an effective learning environment in the classroom (Fink, 2003).

Last step of intermediate phase is “overall scheme of learning activities” (Fink, 2003, p. 138). Like integrating the components step in the initial phase, overall set of learning activities represents combination of course structure and teaching strategy (Fink, 2003).

Final Phase: Four Tasks to Finish the Design

The final phase includes four steps: grading system, possible problems, write syllabus, and evaluation of course and teaching.

“Grading system” is a representation of feedback and assessment system explained under the initial phase (Fink, 2003, p. 142). In order to construct the grading system, Fink (2003) points important rules such as considering differences among students, appropriateness to learning goals, and significance of teaching and learning activities. Another step is to identify possible problems. Fink (2003) focuses on the importance of specifying what may create a problem during the lesson but detecting possible problems may be hard. In the current study, given feedback related to unexpected scenario in a classroom is categorized as consideration for possible problems.

Writing the syllabus is the next step of integrated course design, which focuses on giving knowledge about the course to the student (Fink, 2003). A syllabus is supposed to involve general information, aim, structure, learning activities, grading system, and course policies of the lesson (Fink, 2003). Last step shows assessment of the course and teaching, which consists of midterms and various sources to evaluate by formulating efficient and powerful questions related to the course (Fink, 2003).

To sum up, integrated course design has three main phases: initial phase, intermediate phase, and final phase. This course design includes twelve steps shown in Table 2.1. All of these steps are related to each other and sequence among these steps exists to build a feasible course design. According to steps of the integrated

course design, it is said that all of these steps provide construction of a lesson so these steps are considered to create a lesson plan. Therefore, while defining categories in the current study, components of the integrated course design are discussed to identify related components of this design with data. As mentioned above, learning goals, teaching/learning activities, feedback and assessment, lesson structure, and consideration for possible problems were identified as categories in the current study.

2.2 Lesson Planning and Teacher Education

Lesson planning represents combination of teaching and learning in a path including sequences from basic to complex. Results show that when teachers think about lesson planning, they also engage a mental process (Anfara Jr., Lenski, & Caskey, 2009; Clark & Peterson, 1986) . Therefore, lesson planning is not just writing about steps of a lesson, it also includes in-depth examination of all steps in the lesson. Jalongo, Rieg and Helterbran (2007) claim that “Effective planning is an essential element of good teaching and of promoting student achievement” (p.42).

Lesson plans prepared by teachers should investigate thinking process and steps in detail rather than giving a systematic way for objectives (Ignatovich, Cusick, & Ray, 1979). According to combination of studies, McCutcheon (1980) suggests that courses on planning should be focused on mental process to understand how students learn and which activities are helpful. While planning a lesson, teachers should be able to realize differences among activities and problems so teachers should be aware of sequence among these activities (McCutcheon, 1980). Furthermore, teachers should select suitable materials to teach a topic effectively. Also, unexpected situations such as students’ misconceptions, students’ excessive interests to the topic, and external factors like classroom organization should be considered during lesson planning (McCutcheon, 1980).

Literature presents that lesson plans prepared by teachers depend on curriculum, books, and policies identified by administrators (Brown, 1988). Brown (1988) conducted a study with 12 middle-school teachers. In this study, participants prepared lesson plans in accordance with instructional design model of lesson planning. As a result of this study, it is found that teachers plan a lesson in terms of their past experiences, availability of materials and students' interests (Brown, 1988). Brown (1988) suggests that while planning a lesson, teachers focus on activities instead of given objectives. Therefore, courses on teacher education programs can be based on selecting and organizing appropriate activities in terms of students' age and their learning level. In the present study, PSMTs integrate a teaching/learning activity into their lesson plan. Therefore, what kind of activities PSMTs select to encourage students' developmental process is examined in the current study.

2.3 Research Studies Related to Preservice Teachers' Lesson Planning

When literature was reviewed to explore research about preservice teachers' lesson planning, many studies were appeared in the field of lesson planning all around the world. However, research in Turkey was so limited and most of them were conducted in the last five years. In recent studies in Turkey, it is generally found that preservice teachers generally face with problems while planning a lesson (Sahin-Taskin, 2017; Zingir Gulden, 2013; Taylan, 2018). For example; Sahin-Taskin (2017) conducted a research with 18 preservice teachers (PSTs) to see PSTs' viewpoint toward lessons and their thoughts about the relationship between lesson plans and teaching-learning process. In order to get in-depth investigation, semi-structured interviews were conducted with voluntary participants. These interviews last 30 minutes for each session. Sahin-Taskin (2017) applied semi-structured interviews in order to explore PSTs' opinions about lesson planning and lesson plans' roles in terms of learning and teaching. It was found that PSTs had problems especially in order to select an appropriate activity for students. Participants also claimed that they could not spend

enough time with students to realize children's needs for effective learning as the reason of this difficulty. Moreover, PSTs expressed preparing lesson plans was helpful to teach a topic and to apply the activity correctly in proper time (Sahin-Taskin, 2017).

Zingir Gulten (2013) conducted a study to investigate how PSTs experience preparation of their first lesson plans and how they react during this lesson planning process. A hundred and fifty, second year, prospective teachers who were studying at the English Language Teaching enrolled in a course requiring lesson planning. During the course, information was given to prospective teachers about lesson planning such as lesson steps and various approaches to lesson plans. After that, texts from course book of prospective teachers were administered to help them while preparing a lesson plan. These texts comprised of pre and while-reading activities and they did not include post-reading activities (Zingir Gulten, 2013). According to given texts and lesson planning approaches, every prospective teacher would prepare a lesson plan by considering suitable objectives and activities, ordering among lesson parts like examples, activities, as well as lecturing. Lesson plans prepared by prospective teachers who enrolled this course were analyzed into two categories including two different aspects of lesson planning: writing clear and well-defined objectives, selecting appropriate post-reading activity in accordance with given assignment. From the first perspective which included examining of objectives, it was found that 89 prospective teachers (59%) wrote suitable objectives for their tasks. Moreover, most of prospective teachers (113 participants) faced with problems while deciding a post-reading activity appropriately for given task. On the other hand, the rest of the prospective teachers (37 participants) assigned suitable activities for the task in their lesson plans prepared by themselves. The study showed preparing a lesson plan in accordance with objectives is one of the biggest problems in teacher education (Zingir Gulten, 2013). Therefore, it suggests that prospective teachers should be supported for lesson plans prepared by themselves and they should be directed to think about other lesson plans to develop themselves.

Taylan (2018) conducted another research to examine the relationship between lesson analysis of preservice teachers (PSTs) and their lesson planning skills. Twenty-six senior PSTs participated the study and they were enrolled in a course which included lesson planning and lesson analysis reports. During the semester, PSTs wrote several lesson analysis reports including their observations in a real classroom by considering students' thinking ways and teachers' teaching methods. While PSTs were writing their lesson analysis reports without instruction in the beginning of the semester, examples of productive reflections and a reading with Lesson Analysis Framework were presented after a few weeks. Also, PSTs prepared a lesson plan protocol as the last assignment at the end of the semester. When PSTs' lesson analysis reports at the end of the semester were compared with the reports in the beginning of the semester, it was found that there was improvement in terms of giving explanations based on PSTs' observations considering students thinking. Lesson plan protocols were analyzed in terms of four different categories which were defining objectives, expecting students' thinking correctly, anticipating students' incorrect thinking, and preparing questions which helps to widen student thinking. According to the research result, anticipating students' correct thinking was found to be the most challenging aspect of lesson planning because most of PSTs could not give meaningful explanations for the situation that students show correct thinking. For this dimension, only 6 PSTs' interpretations were scored fully. Findings showed there was a positively relation between lesson planning skills and lesson analysis. It was suggested that more effective lesson plans may be prepared with the help of working with students by getting experiences to comprehend how students think about mathematical topics. Furthermore, the way of presentation of effective examples was criticized. Therefore, classroom discussions at the university may help PSTs to see students' possible thinking.

Literature also reveals lesson planning differences among preservice teachers from various levels like elementary and secondary levels. For example; Kagan and Tippins (1992) conducted a study with 12 student teachers in total as 5 elementary and 7 secondary student teachers. In this study, usefulness of different kinds of lesson plans

and differences of elementary and secondary student teachers about evaluation of lesson plans were investigated. Results showed that five secondary student teachers preferred to apply memorization of lesson plans while teaching. Also, only one elementary student teacher connected a relation with memorization and lesson plans. On the other hand, four elementary student teacher claimed that lesson plans are helpful to organize a lesson (Kagan & Tippins, 1992). Moreover, two secondary teachers felt comfortable while adapting the lesson in terms of students' curiosity, attention and questions. All secondary novice teachers had problems in the process of assessment. Also, each elementary student teacher stated that lesson planning was boring (Kagan & Tippins, 1992).

2.4 The Nature of Learning

People construct a society in a common group by interacting with each other via talking, acting, and thinking (Malle, 2004). In the current study, PSMTs meet with the course instructor and discuss with classmates as part of their learning process of lesson planning.

Vygotsky is one of the most popular educational psychologist. Vygotsky claimed that "The social dimension of consciousness is primary in time and in fact. The individual dimension of consciousness is derivative and secondary" (Vygotsky, 1979, p. 30). Two important points are defined by Vygotsky, which are "internalization" and "zone of proximal development" (Wertsch, 1985, p. 61). Vygotsky's internalization is based on "speech" related to social issues and connection among people in the community (Wertsch, 1985, 1991). Vygotsky creates a bridge between internal and external expressions by means of internalization so Vygotsky's theory gives opportunities to explain what people think by means of speech (Wertsch, 1985). Vygotsky also focuses on the significance of "adult-child interaction" by creating a relation between a child's behavior and an adult's response (Wertsch, 1985, p. 64). According to the adult-child interaction, children keep the reaction of adults toward an action through "the interpsychological

plane”. After that, by considering children’s previous experiences with the adults, children begin to have experiences on “the intrapsychological plane” (Wertsch, 1985, p. 65).

The second point is defined as “the zone of proximal development” (p.67), which represents improvement of children by means of problem solving with qualified assistants and peers (Wertsch, 1985). The zone of proximal development gives an opportunity for evaluation in terms of interpsychology and intrapsychology. Therefore, Vygotsky claims that adults create assessment instruments for each child (Wertsch, 1985). Furthermore, Vygotsky suggests that children are supported by means of effective instructions in appropriate with the zone of proximal development of children. It means the zone of proximal development is changed from child to child so instructions are defined by means of children’s developmental level (Wertsch, 1985). In this perspective, the course instructor plays a role as a qualified assistant in the field of teacher education, which is explained by Vygotsky’s zone of proximal development. Therefore, meetings with the course instructor and classroom discussions with classmates play an important role in order to design a lesson plan.

Fink (2013) assumed that people learn from their experiences by making meaning. In order to prepare a lesson plan, PSMTs gain experience via one-to-one teaching in the present study. Fink (2013) also claimed that learners can be supported with other people during their meaning-making process. Therefore, in the current study, meetings with the course instructor and classroom discussions with classmates are significant in order to guide PSMTs during lesson planning.

2.5 Summary of Literature Review

Lesson planning is seen as the main step to provide effective teaching (Zhu, Du, Chen, & Li, 2015; Zazkis, Liljedahl, & Sinclair, 2009; Jalongo, Rieg, & Helterbran, 2007). Literature reveals that existence of different models of lesson plans such as 5E lesson plan model, Gagne’s instructional design and Tyler’s rational-linear model

(Namdar & Kucuk, 2018; Ornstein, 1997; Tyler, 1949). According to the studies, various models of lesson plans improved by authorities consist of different steps to shape a course.

In order to see lesson plans and lesson planning process from different perspective, studies are conducted with teachers and preservice teachers from various groups including their field, grade, and experience. However, there are no studies conducted by considering education system of universities. It means that “University within School Model” was not seen as a criteria in order to define participants. In the current study, preservice teachers who study in a university implementing this model are selected to fill this gap. This model gives importance to experience teaching and learning process in the field. From freshmen to senior year, preservice teachers practice to be a teacher in a real classroom and they receive lesson planning experience from first semester of the eight-semester program. This is unique compared to about 90 programs in Turkey.

In the chapter of literature review, previous research related to the current study was presented. According to results of the studies, preservice teachers face with a problem of detection of students’ possible thinking while planning a lesson (Sahin-Taskin, 2017). Even though literature focuses on lesson plans’ assessments at the end of planning process (Zingir Gulden, 2013), research about evaluation of lesson plan drafts is quite limited. In this regard, University within School Model includes meetings and classroom discussions in order to support freshmen PSTs during their lesson planning process. In order to consider lesson planning process via meetings and discussions, the current study focuses on PSMTs’ lesson planning experience in University within School Model.

CHAPTER 3

METHOD

This research investigates how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans. Also, this study examines how first year PSMTs evaluate their performance during lesson planning process. Therefore, this chapter was divided into eleven main categories which were called as research questions, research design, participants, context of the study, data collection procedure, data collection tools, data collection process, data analysis, trustworthiness, researcher role and bias, and limitations of the study.

3.1 Research Questions

This study includes two main research questions and the sub-question presented below:

- 1) How do first year PSMTs integrate given feedback into their lesson plans?
 - 1.1) What kind of differences are seen between constructed lesson plans by PSMTs in high and low levels?
- 2) How do first year PSMTs evaluate their performance during their engagement in lesson planning process?

These questions are taken as a guide to design this research so all steps for the research are explained in the following sections.

3.2 Research Design

Qualitative research was conducted to examine research questions. Silverman (2016) defined qualitative research by stating “Qualitative research as much about social practices as about experience (p.3)”. Taylor and Bogdan (1984) claimed qualitative

research focuses on understanding of a social situation from the aspect of real participants who experience it. Furthermore, Denzin and Lincoln (2008) explained qualitative research by giving the definition below:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (p. 4).

Moreover, Patton (2005) claimed that a qualitative researcher presents data with the help of observations and interviews by considering natural settings. Qualitative studies are categorized in five groups which are narrative, case, grounded, phenomenology, participatory-action research (Creswell, Hanson, Clark Plano, & Morales, 2007). In this study, I, as the researcher, conducted the study in participants' natural settings by observing and taking notes. Therefore, qualitative case study was applied to answer research questions in the study. In order to explain properties of case study, it is mentioned in detail in next section.

3.2.1 Case Study

Stake (1995) considered that case study investigates “complexity of a single case (p. xi)”. Thomas (2011) worked on the definition of case study and he described it by referring historical unity with “the subject” and analytical frame with “the object” (p.513).

Creswell et al. (2007) also constructed a definition for case study as follows:

Case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports) and reports a case description and case-based themes (p.245).

According to the given definition, case study involves an observation of a situation including individuals by examining details (Creswell, 2012). Merriam (2013) also mentioned about the importance of explanation of detail in a situation or an activity in a qualitative research.

Horner et al. (2005) claimed single-subject studies give detailed information about participants in the research. Single-subject studies include less number of participants when it is compared with other research types. A single case study may include members of a group who are in a common situation (Stake, 2006). In the current study, I wanted to study single case and thus conducted qualitative case study. In order to obtain in-depth information of meetings with a course instructor and classroom discussions with their classmates during preservice mathematics teachers' lesson planning process, I collected data from seventeen preservice mathematics teachers in the current study. In order to identify participants, I focused on a university implementing University within School Model since even freshmen PSTs can experience internship program via this model. Therefore, PSTs in a university implementing University within School Model (Özcan, 2011) spend more time when their internship program is compared with other universities' internship program. In a university without University within School Model, just senior PSTs receive teaching experience in the field. Thus, I considered University within School Model while identifying participants. These participants were first semester freshmen who did not have neither field nor mathematics teaching pedagogy background. The course was an introductory course for the profession. Therefore, observing and investigating their learning journey in this course is a unique case. Detail information about the sampling and selection process of the participants is presented in the following section.

3.3 Sampling and Selection Process of Participants

The purpose of this study is to investigate how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans and how first year PSMTs evaluate their performance during their engagement in lesson planning process. This research was conducted in the scope of Introduction to Mathematics Teaching Course at the Undergraduate Programme in Mathematics Education department at Education Faculty in a foundation university in Turkey. Purposive sampling method was used to select participants for the research. Oliver and Jupp (2006) stated purposive sampling method as:

A form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue, or capacity and willingness to participate in the research (p.244).

In purposive sampling, there are some preselected criteria to define participants and availability of participants who will be selected for the research is one of the most important point in this sampling method (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). In this research, preservice mathematics teachers in their first semester at the university in 2018-2019 Education Year was intended to be selected. Being freshman was the first criteria to provide that PSMTs in this research do not have much experience to design a lesson plan with detail including learning goals, teaching/learning activities, lesson structure, feedback and assessment, and consideration for possible problems. Second criteria was determined by considering teaching applications and procedures in the university. Participants were freshmen in this foundation university implementing “University within School Model”. According to the “University within School Model”, preservice teachers experience being a teacher in real classrooms during their university program (Özcan, 2013). Detail information about this model was given under the context of the study. The reason why participants were selected from the university implementing this model

was that these freshmen also would find a chance to apply the lesson plans prepared by themselves. In the current study, each PSMT would teach one or two sixth grade student(s) each week. Thus, PSMTs would also be the part of teaching by interacting with students in real classrooms. Moreover, they would start to get an experience to plan a lesson, which is a significant point for the study because PSMTs in many universities generally prepare their first lesson plan in third or fourth year. In Turkey, teacher candidates experience school life as a teacher in their internship experience which is usually in their senior year. However, University within School Model emphasizes on gaining more experience starting from first semester in the university. Third criteria was about the course including lesson planning. For this research, participants would be selected from PSMTs who were taking the course of Introduction to Mathematics Teaching Course because in this course, PSMTs would design a lesson plan by meeting with the course instructor and their peers at the university as a part of this course.

As shown in Figure 3.1 below, the current research consisted of seventeen freshmen PSMTs who enrolled in the course of Introduction to Mathematics Teaching in Fall Semester of 2018-2019 Education Year. These seventeen PSMTs constructed lesson plans by working with their peers. Therefore, there were eight pairs and one PSMT planned a lesson alone. Participation was voluntarily. According to third draft of their lesson plans, the PSMTs were grouped by high and low levels at the end of the semester. Four pairs (eight PSMTs) were labelled as high level while another four pairs and one PSMT (nine PSMTs in total) were labelled as low level. During lesson planning process, PSMTs who mostly consider lesson plan components of Fink's (2003) integrated course design were named high level. On the other hand, PSMTs who mostly ignore these components were categorized into low level. In accordance with these components, criteria for description of PSMTs' different levels were focused on including students' different thinking in the plan, selecting appropriate teaching/learning activities, ordering questions from simple to complex, and giving feedback and assessment for students learning. These criteria were presented on

Table 3.1 in consideration of third drafts of lesson plans. Also, evaluation rubric was presented in Appendix B.

Table 3. 1: Criteria for Description of PSMTs' Levels

High Level PSMTs	Low Level PSMTs
Generally include students' different thinking in the plan	Rarely include students' different thinking in the plan
Generally select appropriate teaching/learning activities	Generally select inappropriate teaching/learning activities
Generally order questions and activities from simple to basic	Rarely order questions and activities from simple to basic
Generally give feedback and assessment for students learning effectively	Generally give feedback and assessment for students learning ineffectively

As summary, in order to examine PSMTs' integration into their lesson plans during lesson planning process, seventeen PSMTs participated the current study. As seen in Figure 3.1, one pair from each level also was selected among high and low levels in order to get in-depth information about similarities and differences between various levels.

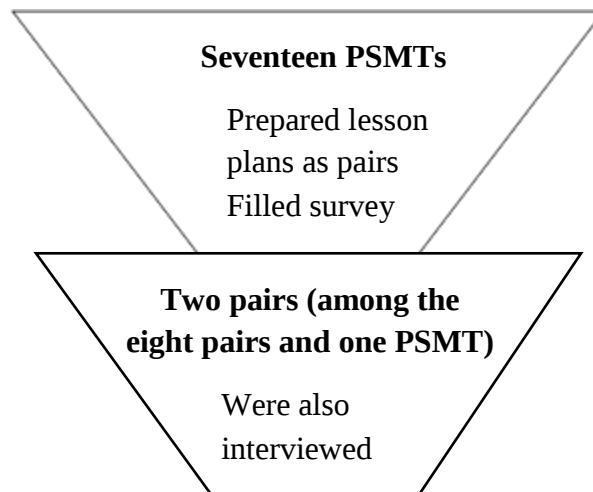


Figure 3. 1: Participants of the study

3.4 Context of the Study

The vision of Turkish Education System is to improve Turkey in accordance with standards of modern civilizations. Therefore, the first aim is to educate preservice teachers (PSTs) as qualified, talented, international teachers. In Turkey, preservice teachers study at universities during four years of teacher education programs. In the fourth year of their education life, preservice teachers experience being teachers in real classrooms. It shows preservice teachers gain experience by means of internship programs in their senior year at the universities. University within School Model depends on collaboration among schools and universities, which offers to combine theory and practice in teacher education (Özcan, 2013). This model re-structures teacher education programs in Turkey. According to University within School Model, teacher education programs are based on university-centered education during first and second years of the program. Moreover, last two years of teacher education program are depended on school-based education via internships. When preservice teachers are third-year, this model suggests an internship program that PSTs are as teacher assistants in real classrooms. Preservice teachers are placed in two different schools to complete their internship program as teacher assistants. In senior year, PSTs are placed as teachers in the real classrooms. During this

internship, preservice teachers will be guided by experienced teachers at schools and university supervisors at the university. According to the present model, preservice teachers gain experiences every year even though first two years of teacher education program are mainly university-based (Özcan, 2013). University within School Model also supports a social responsibility project. While identifying schools for internship, programme developers select low socio-economic schools. In order to develop students in these schools, preservice teachers might teach students voluntarily although they complete duration of internship program. Different than other programs in the faculty, middle school mathematics education program has a course called Introduction to Mathematics Teaching. This course has both theoretical and also practical part (Tunç-Pekkan, Karagöz-Akar, & Akçan, 2019). Freshmen PSMTs experience one-to-one teaching via this course. Some universities apply University within School Model and in the current study, participants are selected from one of these universities implementing this model. Therefore, participants in the current study get an opportunity to teach one or two sixth grade student(s) by means of their constructed lesson plans.

3.5 Data Collection

Before collecting data from participants, the official permissions were received from Ethics Committee at METU and the foundation university which participants study. These permissions as the ethical aspect of the study were necessary to conduct the study by protecting participants. Ethical permissions are shown in Appendix A. Fraenkel et al. (2012) investigated ethical concerns into three categories named as protecting participants from harm, confidentiality of the research data, and deception. Before the study, participants' approval was taken via voluntary participation approval form including explanations of objective of the study, process, confidentiality, and voluntary participation. Pseudonyms were assigned for the participants to protect personal information of all participants. This study lasted 9 weeks. According to the course, each pair of PSMTs would prepare a lesson plan

and different pairs would plan a lesson every week. Table 3.2 represents the time schedule of lesson planning process for each pair separately. Data collection tools are presented in the following section.

Table 3. 2: Time Schedule of PSMTs' Lesson Planning Process

Group Number	Date for submitting of the first draft (First Draft)	Date for meeting with the instructor (Second Draft)	Date for classroom discussion (Third Draft)
First Group	October 5, 2018	October 8, 2018	October 12, 2018
Second Group	October 12, 2018	October 15, 2018	October 19, 2018
Third Group	October 19, 2018	October 22, 2018	October 26, 2018
Fourth Group	October 26, 2018	October 29, 2018	November 2, 2018
Fifth Group	November 2, 2018	November 5, 2018	November 9, 2018
Sixth Group	November 23, 2018	November 26, 2018	November 30, 2018
Seventh Group	November 30, 2018	December 3, 2018	December 7, 2018
Eighth Group	December 7, 2018	December 10, 2018	December 14, 2018
Nineth Group	December 14, 2018	December 17, 2018	December 21, 2018

3.6 Data Collection Tools

In a qualitative research, interviews help to realize “a vivid picture of the participant’s perspective on the research topic” (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). Moreover, observation gives an opportunity to identify a small group among participants to investigate the purpose of the study explicitly (Slavin, 2007). Also, documents provide a means of exploring background information of participants and creating new questions in accordance with participants’ approaches to the topic of the study (Bowen, 2009). In the current study, data was gathered via semi-structured interviews and documents such as survey and lesson plan drafts.

The aim of the present study is to examine how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans. Moreover, another purpose of this study is to investigate first year PSMTs' evaluation about their performance during their engagement in lesson planning process. Therefore, data was collected through (1) three lesson plan drafts to reveal PSMTs' integration into lesson plans, (2) a survey to obtain PSMTs' evaluation of their engagement in lesson planning process, (3) semi-structured interviews with one pair of PSMTs from high level and one pair of PSMTs from low level in order to follow their integration into lesson plan drafts.

3.6.1 Lesson Plans' Drafts

Different pairs planned the lesson every week in order to answer the questions, which are "*How do first year PSMTs integrate given feedback into lesson plans?*" and "*What kind of differences are seen between constructed lesson plans by PSMTs in high and low levels?*". At the beginning of the semester, Table 3.1 to prepare lesson plans was presented to PSMTs by explaining each category with points. In the process of lesson planning, each pair prepared three drafts of a lesson plan. These three drafts were categorized by considering steps of the lesson planning process. This categorization was appeared in order to identify participants' levels as high and low levels. Therefore, four pairs (eight PSMTs) were considered as high level in accordance with the third draft of their constructed lesson plans. Also, four pairs and one PSMT (nine PSMTs in total) were evaluated as low level. In the current study, the lesson planning process includes two steps: group meetings with the course instructor for examination of the first draft and classroom discussions of presentations of the second draft. These steps are explained in detail in the following section.

3.6.1.1 Group Meetings with the Course Instructor for Examination of the First Draft

The version of the lesson plan without feedback was called as the first draft of the lesson plan. While PSMTs were planning a lesson and shaping their lesson plans, meetings with the course instructor were organized once for each pair before their classroom presentations. It means every week, a pair of PSMTs who planned the lesson for that week consulted with the course instructor about necessary alterations in the lesson plan. These meetings helped PSTs to discuss how lesson plans should have been changed to make topics clear for students by considering students' thinking ways, their knowledge levels, and their solution paths. Therefore, the course instructor would give feedback by considering these components to guide PSMTs while designing a lesson. The version of the lesson plan revised after meeting with the instructor was named as the second draft of the lesson plan. The meeting with the course instructor mostly concentrated on lesson plan preparation category including objectives of the lesson, references, students' different thinking, solutions of the problems, instructions for PSMTs, expectations, and format. Furthermore, the second category consisted of appropriateness of worksheets with the lesson plan and quality of the questions on handouts. During meetings with the course instructor, worksheets were rarely discussed because of time limitation. Therefore, most pairs could not get feedback about their worksheets. However, worksheets were presented during classroom discussions, which are explained in the following section. These meetings were voice recorded. Then, voice records were transformed into written documents and coded. Codes are explained under data analysis section.

3.6.1.2 Classroom Discussions of Presentations of the Second Draft

The second drafts of the lesson plans would be presented in the classroom in the university to the other PSMTs. The version of the lesson plan after presentation to the other PSMTs was defined as the third draft of the lesson plan, which was also

called as the third draft of the lesson plan. PSMTs' lesson planning process was presented via Figure 3.2 below.

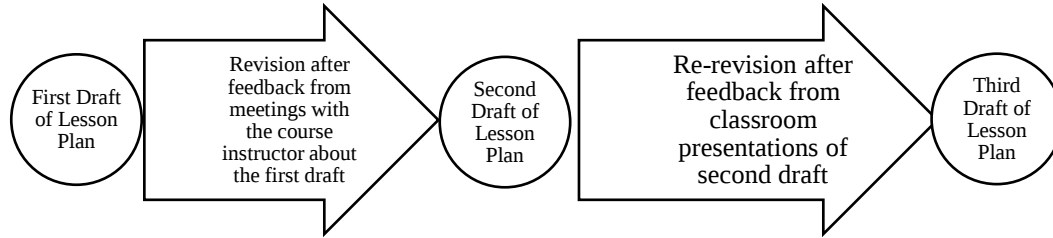


Figure 3. 2: PSMTs' lesson planning process

After preparation periods of the lesson plans, these plans would be implemented on sixth grade students the following week. These students studied at a local, close, and low socioeconomic status public school in Istanbul. Therefore, each PSMT would teach one or two student(s) every week by following the steps into lesson plans of that week. While planning the lesson, group members worked collaboratively.

3.6.2 Survey

After getting three various drafts of the lesson plans from all PSMTs, survey was administered to all PSMTs at the end of the semester. There were seven open-ended questions in this survey in order to investigate how PSMTs evaluate their performance during lesson planning process. Survey questions were prepared to understand PSMTs' thoughts about lesson plans and lesson planning process (Chong & Kong, 2012). Therefore, PSMTs' ideas were questioned about important points and parts while preparing a lesson plan in the first two questions. In the next question, sources used to construct their lesson plans were asked. Then, PSMTs' lesson planning sufficiency and deficiency from the perspective of PSMTs was explored. Lastly, efficacy of meetings with the course instructor and classroom discussions with their peers were examined by means of the survey. These questions help to see lesson planning process from PSMTs' perspective by giving opportunities to express their thoughts. Therefore, PSMTs' responses to survey questions reveal the answer

of the second research question which is “*How do first year PSMTs evaluate their performance during their engagement into lesson planning process?*”. Table 3.3 presents each question asked in the survey. The Turkish version of these survey questions are presented in Appendix C.

Table 3. 3: Survey Questions

1	What do you think about planning a lesson?
2	Which points did you consider while preparing a lesson plan? Why?
3	Which sources did you use for your lesson plans? How?
4	What do you think about your strength and deficiency to plan a lesson? How can you improve yourself to handle with your deficiency in terms of lesson planning?
5	What do you think about meetings with the course instructor during lesson planning process? What do you think about feedback given by the course instructor about your lesson plans?
6	What do you think about the relation between classroom discussions and its effect on lesson plans? If you made changes on your lesson plans after your presentation in the classroom, what kind of changes did you make? Give example(s).

3.6.3 Semi-structured Interviews

In accordance with the PSMTs’ scores from the third drafts of their lesson plans, each pair of PSMTs was categorized under high and low levels. As the last step of data collection procedure, at the end of the semester, semi-structured interviews were implemented with one focus group among PSMTs’ pairs labelled as high level and another focus group among PSMTs’ pairs labelled as low level. Moreover, these two focus groups were selected intentionally to explore the viewpoints from participants who were in different levels. Interview questions consisted of 8 main

questions with sub-questions shown in Table 3.3 and all questions were shaped with the help of two experts in the field of Mathematics Education. Interview questions were prepared in consideration of lesson planning and PSMTs' lesson planning process including differences and similarities among drafts of their lesson plans. Also, these interview questions were identified by applying two interviews with two voluntary PSMTs as pilot interviews. Interviews were conducted at the end of the research to obtain in-depth information from PSMTs in 2 focus groups after they experienced lesson planning during the semester. Interview questions were also about changes into their lesson plans by referring to meetings with the course instructor and discussions among PSMTs during the lesson plans' presentations. The reason of asking this kind of questions was to see what these two focus groups considered while making changes in their lesson plans. Moreover, parts of a lesson plan, references PSMTs used during preparing the lesson plan, their feelings before, during, and after designing the lesson plan, the roles of interactions with the instructor and their peers on planning a lesson, and parts PSMTs were not satisfied in their lesson plans were answered to PSMTs from these two focus groups. Interview gives detail information (Merriam, 1998). These interviews were conducted to seek an answer for the research question of "*How do first year PSMTs integrate given feedback into lesson plans?*". By defining these focus groups with different levels, the study provides detail investigation to show similarities and differences of evaluation of lesson planning process and lesson plans by PSMTs from focus groups. Therefore, interview questions support in-depth evaluation of lesson planning process and lesson plans among different levels.

In total, one pair from each level was interviewed. Every session lasted 35-45 minutes by depending on PSMTs' answers. These interviews were voice recorded with their permissions. Before interview, I talked with PSMTs from focus groups to be sure that they felt more comfortable. Table 3.4 presents interview questions. The Turkish version of interview questions are shown in Appendix D.

Table 3. 4: Interview Questions

1	Have you ever prepared a lesson plan before this course? If you have, when and why did you plan a lesson?
2	Which steps did you follow while planning the lesson? • Firstly, what did you decide on your lesson plan? • What was the next move? (It was expected PSMTs would say objectives. If they would say different thing, try to hear objectives by asking about objectives like “Did you identify the objectives?”) • What was the next move? (It was expected to hear about introduction parts of the lesson plans. Some pairs had different activities to introduce a lesson in their last two versions of their lesson plans) How did you decide to change introduction on your lesson plan? • (If they would say feedback from meetings with the instructor or classroom discussions as a reason of changes on the lesson plan) Who suggested to make changes on introduction? What was the feedback? How did you decide about introduction on second draft of the lesson plan?
3	(All drafts of their lesson plans should be presented to PSMTs as paper) • Why did you add/remove this part? Who did you give feedback to you for this part? What was the feedback?
4	Did you satisfy about third draft of your lesson plan? Is it sufficient to teach a topic? • Which part(s) in your lesson plan make your plan strong/efficient? • Which part(s) in your lesson plan is weak? What do you think which part(s) should be changed?
5	How did you feel yourself in terms of lesson planning before preparing your lesson plan? • What kind of weakness did you feel about yourself before planning the lesson? • How did you feel yourself about lesson planning after preparing the lesson plan? Did you feel sufficient after lesson planning? • What kind of weakness did you feel while preparing the lesson plan? • What do you think about the source of the feeling of your weakness?

Table 3.4 (Cont'd)

6	Who helped you while planning the lesson? • What do you think about feedback? Are they helpful? • How did you make changes in accordance with the feedback? • (Some pairs ignored the feedback) There was a suggestion to change this part in your lesson plan but you did not change it. Why? • How do these meetings trigger differences among your lesson plan drafts?
7	What do you think about classroom discussions? • Which topic(s) should be discussed to become this conversation more efficient in the classroom? What is/are your suggestion(s)? • How should classroom environment be to make this conversation more beneficial? What is/are your suggestion(s)?
8	How did you feel when you applied your lesson plan by one-to-one teaching in a real classroom? • What do you think about the situation which includes teaching a topic without preparing a lesson plan? • What kind of differences can be happened between teaching the topic with the lesson plan and without the lesson plan?

3.7 Data Collection Process

The purpose of the present study was to investigate how first year PSMTs integrate given feedback by the course instructor and classmates into lesson plans. For this purpose, it was need to integrate given feedback via meetings with the course instructor and classroom discussions with classmates. Also, another aim of the study was to examine how first year PSMTs evaluate their performance during their engagement into lesson planning process. Data collection process in consideration of these two main purposes was presented in detail in Figure 3.3 below.

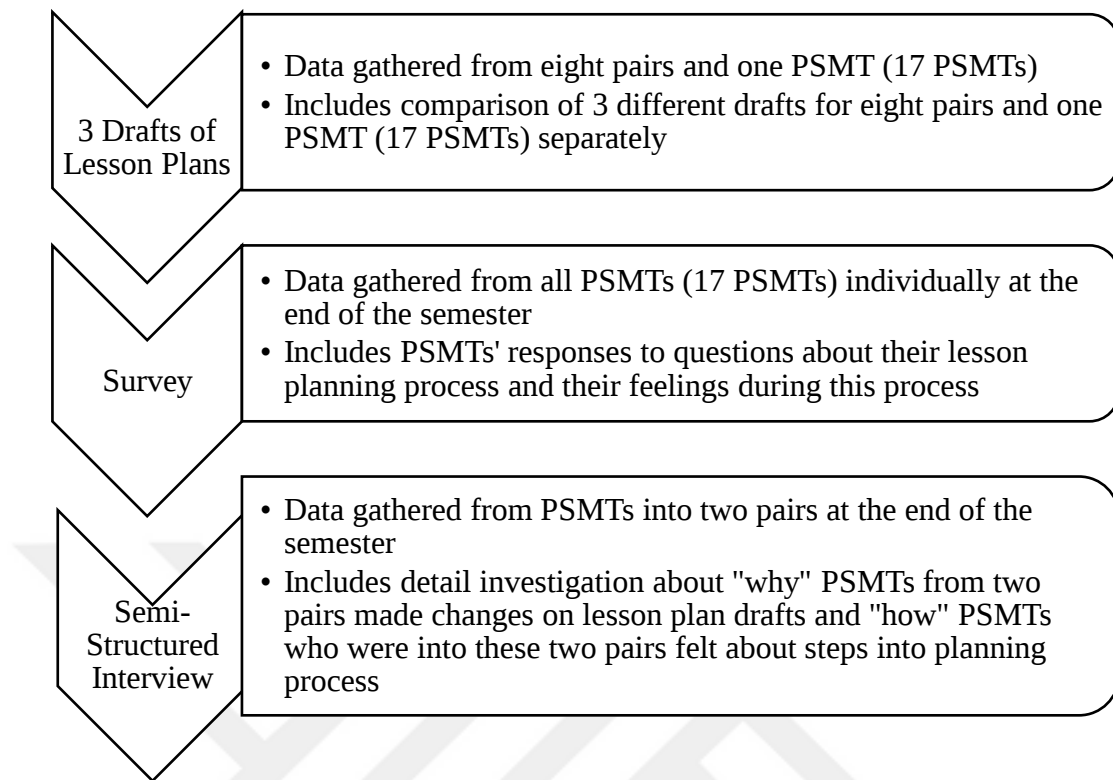


Figure 3. 3: Data collection process

As shown in Figure 3.3, lesson plan drafts were collected from eight pairs and one PSMT because pair-work was applied during PSMTs' lesson planning process. As seen in Figure 3.3 above, each pair prepared three different drafts of a lesson plan after the meetings with the course instructor and classroom discussions with classmates at the university. In the scope of the course which was named as Introduction to Mathematics Teaching Course, three drafts of the lesson plans from each pair were collected to analyze the changes among three various drafts. Voice records were taken during meetings with the course instructor. Moreover, all three drafts of lesson plans prepared by each pair of PSMTs are analyzed to find revision parts on each draft of lesson plans. After all lesson planning process was ended up for each pair at the end of the semester, all PSMTs (seventeen PSMTs) evaluated their performance during their engagement into lesson planning process via survey.

At the end of the semester, in order to get in-depth information of PSMTs' integration into lesson plans, semi-structured interviews were applied to one pair of PSMTs from each level: low and high levels. These two pairs were identified in appropriate with their scores from the third draft of their lesson plan. A meeting room at the university was preferred to conduct the interviews so PSMTs could feel comfortable.

3.8 Data Analysis

In this study, collected data via qualitative data collection methods such as observation, meetings, document reviews, and interviews were analyzed by means of descriptive and content analysis techniques. Content analysis was investigated and defined differently by researchers. Content analysis was defined as “the systematic examination of communicative material” (Mayring, 2004). Literature shows that content analysis can be applied while coding open-ended questions in surveys (Weber, 1990; Berelson, 1952). Moreover, content analysis can be used to “identify the intentions and other characteristics of the communicator” and to “reveal the focus of individual, group, institutional, or societal attention” (Weber, 1990, p. 9). Even though content analysis can be applied by different methods, coding is used in the present study.

Coding categories should be created in appropriate with data and these categories can be organized by means of examination of collected data (Lyons, 2000). The model developed by Miles and Huberman (1994) includes three main steps: data reduction, data display, and conclusion drawing and verification (Creswell, 2003; MacDonald, 2001; Miles & Huberman, 1994). In Figure 3.4, the steps of coding model developed by Miles and Huberman (1994) are given.

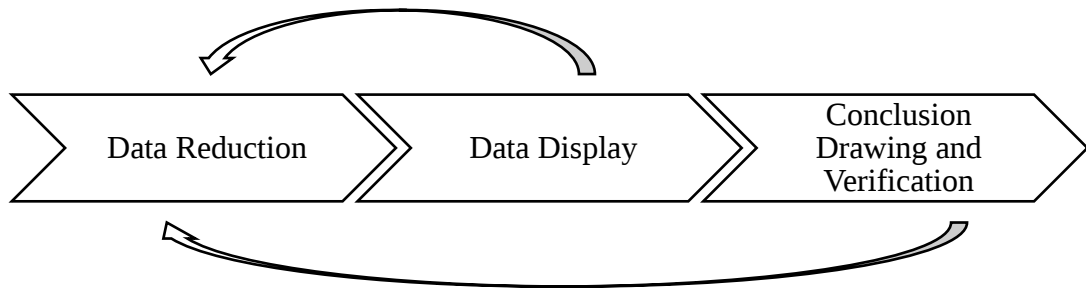


Figure 3. 4: Miles-Huberman model (Miles and Huberman (1994), Baltacı (2017))

In a qualitative study, data should be organized systematically by detail analysis (Strauss, 1987; Poggenpoel & Myburg, 2003; Baltacı, 2017). In data reduction, data should be categorized and coded in terms of related parts so this is the first step to organize data (Baltacı, 2017). These categories and codes are important to define themes in appropriate with data. Moreover, during data reduction process, researchers can apply different strategies by checking identified codes and themes in each data analysis step (Baltacı, 2017). According to Miles-Huberman Model as shown in Figure 3.4, data reduction covers all data analysis process to obtain results from data (Miles & Huberman, 1994). In order to analyze data, coding and taking notes are strategies examined under Miles-Huberman Model. Coding includes different steps until reaching meaningful explanations so coding follows a path from general perspective to specific perspective (Marvasti, 2004; Miles & Huberman, 1994; Baltacı, 2017).

In order to investigate how first year PSMTs in high and low levels integrate given feedback by the course instructor and classmates into their lesson plans, I focused on different drafts of lesson plans. In the present study, there were eight pairs and one PSMT. Each pair of PSMTs prepared a lesson plan in different subjects of mathematics. During PSMTs' lesson planning process, they revised the lesson plans in accordance with given feedback by the course instructor so each pair had three drafts of their lesson plans. I read these three lesson plan drafts so I checked twenty-seven lesson plan drafts of nine different subjects for eight pairs and one PSMT in total. In order to analyze data via in-depth investigation, I transcribed the voice

records of all meetings with the course instructor and semi-structured interviews with PSMTs in high and low levels. Moreover, I collected each PSMT's answer via survey to examine how they evaluated their performance during lesson planning process. Data analysis of each document was presented in the following section.

3.8.1 Data Analysis of Lesson Plan Drafts and Semi-Structured Interviews

PSMTs' integration into their lesson plans was categorized in consideration of Fink's integrated course design (2003). According to Fink's (2003) integrated course design, there are three phases with twelve steps in total as presented in Table 2.1. The voice records of meetings with the course instructor and semi-structured interviews with two pairs were transcribed. Also, different drafts of the lesson plans were analyzed via content analysis. Some changes were made in the components of Fink's framework. As seen in Figure 2.1, three components including learning goals, teaching and learning activities, and feedback and assessment are main components of this design. In the scope of these main three components, I realized different components on the lesson plan drafts and PSMTs' answers during interviews. Therefore, some components were excluded in accordance with differences and similarities among various drafts of PSMTs' lesson plans.

Three main components of Fink's (2003) integrated course design and two other components of the same design are used in order to analyze the data. Therefore, in the current study, lesson plans' five components in total are identified for analysis which are *teaching/learning activities*, *learning goals*, *feedback and assessment*, *lesson structure*, *consideration for possible problems* by modifying Fink's (2003) integrated course design. This modification includes development of Fink's framework in terms of identifying students' possible thinking ways via given feedback by the course instructor and classmates. The components used in the present study are shown in Table 3.5 below.

Table 3. 5: The Properties of Lesson Plans' Components

Lesson plans' components	Sub-components (except PSMTs' levels)	Properties of lesson plans' components
Teaching/Learning Activities		Involving students in learning process via teaching/learning activities Improving students' performance
Learning Goals		Focusing on what students will be able to learn after the lesson
Feedback and Assessment	Forward-Looking Assessment	Constructing a scenario including daily life situations and problem solving skills
	Backward-Looking Assessment	Using direct questions without daily life situations and problems solving skills
Lesson Structure		Following questions from basic to complex Constructing an order among examples, questions, and activities
Consideration for Possible Problems	Timing	Giving enough time for each part in lesson plans including presentation of a topic, activities, examples, assessment parts
	Student Thinking	Thinking about possible student thinking regarding to different ideas and misconceptions

In the present study, each component is basically divided into two groups: integration of PSMTs in high level and integration of PSMTs in low level since this study

includes two different levels of PSMTs. Also, these levels are identified in accordance with their final lesson plan. Table 3.1 shows description of low and high level PSMTs in detail.

According to teaching and learning activities in Fink's (2003) integrated course design, students experience "doing" and "observing" activities. In the current study, teaching and learning activities include activities integrated into PSMTs' lesson plans in consideration of students' possible thinking ways. The first component of lesson plans, which is teaching and learning activities, is analyzed into two levels of PSMTs as presented in Table 3.6 below.

Table 3. 6: PSMTs' Integration of Teaching/Learning Activities

PSMTs' Levels	PSMTs' Integration of Teaching/Learning Activities
High Level	The PSMTs integrate teaching and learning activities properly after meeting with the course instructor
Low Level	The PSMTs integrate teaching and learning activities improperly after meeting with the course instructor or they do not integrate

In the second component, which is learning goals, three resources are appeared as mathematics book, text books, and Internet. In the present study, these resources used by PSMTs while preparing their lesson plans are considered into learning goals since they play a role for foundational knowledge. Learning goals are coded for PSMTs' integration in high and low levels separately as shown in Table 3.7 below.

Table 3. 7: PSMTs' Integration of Learning Goals

PSMTs' Levels	PSMTs' Integration of Learning Goals
High Level	The PSMTs integrate learning goals properly after meeting with the course instructor
Low Level	The PSMTs integrate learning goals improperly after meeting with the course instructor or they do not integrate

Third component is presented as feedback and assessment. Fink's (2003) integrated course design includes two categories which are *forward-looking assessment and backward-looking assessment* for feedback and assessment. In the current study, I coded assessment parts of lesson plans in consideration of these two types of assessment. Table 3.8 shows details of feedback and assessment.

Table 3. 8: The Features of Feedback and Assessment into Lesson Plans

Categories of Feedback and Assessment	Features of Feedback and Assessment
Forward-Looking Assessment	If a lesson plan includes a scenario including daily life problems, it is coded as forward-looking assessment.
Backward-Looking Assessment	If it consists of direct questions without daily life problems, backward-looking assessment is used for categorization.

Feedback and assessment is also coded for PSMTs' integration in high and low levels separately as shown in Table 3.9 below.

Table 3. 9: PSMTs' Integration of Feedback and Assessment

PSMTs' Levels	PSMTs' Integration of Feedback and Assessment
High Level	The PSMTs mostly integrate forward-looking assessment properly after meeting with the course instructor
Low Level	The PSMTs mostly integrate backward-looking assessment even after meeting with the course instructor

In the current study, lesson structure is used as fourth component of lesson plans and in order to illustrate PSMTs' integration into the lesson plans. According to Fink's (2003) integrated course design, lesson structure mostly includes order from basic to complex questions to support students learning gradually. As seen in Table 3.10, it is shown as PSMTs' levels: high and low.

Table 3. 10: PSMTs' Integration of Lesson Structure

PSMTs' Levels	PSMTS' Integration of Lesson Structure
High Level	The PSMTs order questions from basic to complex goals properly after meeting with the course instuctor
Low Level	The PSMTs order questions from basic to complex improperly after meeting with the course instuctor or they do not integrate

When lesson plan drafts were analyzed, consideration for possible problems were shown up among drafts. Therefore, the last component is specified as consideration for possible problems and it is divided into two categories: timing and student thinking. PSMTs' integration of specifying time for introduction to the lesson, activities and assessment is placed under the category of timing. On the other hand, PSMTs' integration of different way of thinking for lesson parts, especially for activities, belong under student thinking. This component also is categorized in accordance with PSMTs' levels as shown in Table 3.11 below.

Table 3. 11: PSMTs' Integration of Consideration for Possible Problems

PSMTs' Levels	PSMTs' Integration of Consideration for Possible Problems
High Level	The PSMTs integrate timing and students' possible thinking properly after meeting with the course instructor
Low Level	The PSMTs integrate timing and students' possible thinking improperly after meeting with the course instructor or they do not integrate

3.8.2 Data Analysis of Survey

In the current study, survey was used to see PSMTs' evaluation about their lesson plans and their lesson planning process. In order to analyze PSMTs' answers on survey, the process intended for analysis of lesson plan drafts and semi-structured interviews were conducted. In the scope of Fink's (2003) integrated course design, there were three categories appeared and some changes were made in accordance with PSMTs' answers. These categories were discussed with intercoder and they were identified as PSMTs' self-evaluation of their performance during lesson planning process, PSMTs' self-evaluation of context of lesson planning and PSMTs' evaluation of meeting with the course instructor. These categories and their sub-categories are modified in consideration of Fink's (2003) integrated course design. First category, which is PSMTs' evaluation of their performance during lesson planning process, is extended in accordance with PSMTs' answers and it is divided into four sub-categories as weakness of situational factors, weakness of teaching/learning activities, weakness of consideration of possible problems and sufficiency of lesson planning as seen in Table 3.12. These answers were collected via the survey question which is "*What you think about your strength and deficiency to plan a lesson?*". When PSMTs expressed their deficiencies related to lesson plans' steps of Fink's (2003) integrated course design, these answers were categorized as

weakness. On the other hand, when the PSMTs explained that they felt enough to prepare a lesson plan, these answers were appeared as sufficiency. Similarly, second category which is PSMTs' self-evaluation of context of lesson planning is come up with the survey question which is "*Which points did you consider while preparing a lesson plan? Why?*". From PSMTs' answers, three sub-categories which are situational factors, teaching/learning activities, and lesson structure are appeared as context of lesson planning. PSMTs' answers related to clearness of lesson plans are categorized under situational factors. PSMTs' responses including selection of activities are placed into teaching/learning activities while PSMTs' responses that provide organization of questions' order into lesson plans belong under lesson structure. Finally, third category includes PSMTs' answers to survey question which is "*What do you think about meetings with the course instructor during lesson planning process? What do you think about feedback given by the course instructor about your lesson plans?*". PSMTs' explanations about their integration into the lesson plans after the meeting with the course instructor focus on two sub-categories: consideration for possible problems and teaching/learning activities. PSMTs' comments including identifying students' possible thinking ways and problems during classtime are categorized under consideration for possible problems. On the other hand, PSMTs' responses about integration of activities into lesson plans are categorized as teaching/learning activities. According to the coding of PSMTs' engagement in lesson planning process, the properties of each category is shown in Table 3.12 below.

Table 3. 12: The Categories in PSMTs' Engagement in Lesson Planning Process

PSMTs' engagement in lesson planning process	Sub-categories	Properties of each category
PSMTs' self-evaluation of their performance during lesson planning process	Weakness of situational factors	Including PSMTs' weakness and sufficiency while planning a lesson including lesson plans' components
	Weakness of teaching/learning activities	
	Weakness of consideration for possible problems	
	Sufficiency of lesson planning	
PSMTs' self-evaluation of context of lesson planning	Situational factors	Including necessary points for a lesson plan such as situational factors, teaching/learning activities, and lesson structure
	Teaching/learning activities	
	Lesson structure	
PSMTs' evaluation of meeting with a course instructor	Consideration for possible problems	Including PSMTs' responses about efficiency and deficiency of the meeting with the course instructor
	Teaching/learning activities	

In order to answer two main research questions and the sub-question, coding tables including same framework are constructed in accordance with Fink's (2003) integrated course design by modifying with respect to current data in the study. After ensuring modifications and the inter-rater reliability, the properties of each category are explained. PSMTs' each integration into different drafts of the lesson plans is coded by means of modified lesson plan components as shown in Table 3.5. In order to see PSMTs' evaluation about their lesson planning, the categories are used to code PSMTs' answers as seen in Table 3.12. Frequency analysis was done for each category separately by calculating their percentage and presented in next chapter. This analysis helps to see the general frame of PSMTs' lesson planning process via meetings with the course instructor and classroom discussions with classmates and PSMTs' evaluation of their own lesson planning process. In the following section, trustworthiness of the study is explained.

3.9 Trustworthiness

Reliability in a quantitative research is seen as a concept to test and to evaluate collected data (Golafshani, 2003). The aim of a qualified qualitative research is to understand complex situations by finding relations and by preventing confusion (Eisner, 1991). While reliability in a quantitative research gives an explanation about situations, reliability in a qualitative research depends on "generating understanding" (Stenbacka, 2001, p. 551). Validity and reliability are defined as two important factors to conduct a qualitative research in accordance with designing a study, analysis results and judging the quality of the study (Patton, 2002; Golafshani, 2003). Validity in a quantitative research is identified as "appropriateness, meaningfulness, correctness, and usefulness of the inferences" (Fraenkel, Wallen, & Hyun, 2012, p. 147). In a qualitative research, reliability and validity are based on trustworthiness to provide confidence of results (Lincoln & Guba, 1985; Mishler, 1990). According to Lincoln and Guba (1985), trustworthiness is a concept to provide reliability and validity in a qualitative research, which includes four criteria: "credibility

(paralleling internal validity), transferability (paralleling external validity), dependability (paralleling reliability), and confirmability (paralleling objectivity)” (Guba & Lincoln, 1994, p. 114). In the present study, trustworthiness is explained under four criteria: credibility, transferability, dependability, and confirmability respectively.

3.9.1 Credibility

Credibility is one of components to support trustworthiness of a qualitative study, which is related to internal validity in a quantitative research (Lincoln & Guba, 1985). Credibility represents “truth” and “believability” of results in a qualitative study (Leininger, 1994, p. 105). Nine validity procedures are claimed for credibility, which are triangulation, disconfirming evidence, researcher reflexivity, member checking, prolonged engagement in the field, collaboration, the audit trail, thick, rich description, and peer debriefing (Creswell & Miller, 2000). Triangulation, member checking, and peer debriefing procedures are applied in the current study.

Firstly, triangulation means that “researchers search for convergence among multiple and different sources of information to form themes or categories in a study” (Creswell & Miller, 2000, p. 126). According to the literature, four various triangulation are shown as data triangulation, investigator triangulation, theory triangulation, and methodological triangulation (Creswell, 2007). In order to provide credibility in the present study, data triangulation, methodological triangulation and investigator triangulation were applied. This study was conducted with seventeen PSMTs to make data triangulation because there is more than one participant in the current study. Moreover, methodological triangulation was achieved with the use of multiple sources such as lesson plan drafts, survey, and semi-structured interviews. In order to increase the credibility of the study, data was analyzed, coded and interpreted by the researcher and a co-coder. Therefore, investigator triangulation was also applied.

Secondly, member checking is seen as “the most crucial technique for establishing credibility” (Lincoln & Guba, 1985, p. 314). One of the most popular strategy to ensure member checking is to identify a focus group among participants (Creswell & Miller, 2000). In the present study, semi-structured interviews were conducted with PSMTs from two focus groups labelled as high and low levels. During semi-structured interviews, I discussed with PSMTs from high and low levels in order to confirm their answers. Therefore, I clarified whether I understood their answers correctly or not. In order to get credible information, member checking strategy gives an opportunity for in-depth investigation (Creswell & Miller, 2000).

Lastly, peer debriefing refers to “the review of the data and research process by someone who is familiar with the research” (Creswell & Miller, 2000, p. 129). In the current study, data were coded by the researcher first. A doctoral student at Mathematics Education, who has experience and knowledge in lesson planning, coded the data as a co-coder to provide the interrater reliability. At the end of coding process of the researcher and the coder, given codes were compared to realize similarities and differences between codes. The interrater reliability was calculated about 92% in accordance with Miles and Huberman’s formula (1994). The differences in coding were discussed to get reliable results and changes were made via consensus. As a result of discussion, full-consensus was achieved. This process helps to establish credibility of results (Creswell & Miller, 2000). In the following section, transferability is explained.

3.9.2 Transferability

Transferability in a qualitative research represents external validity in a quantitative research (Lincoln & Guba, 1985). Transferability is one of criteria to enhance trustworthiness of a qualitative study. To generalize findings, transferability in a qualitative research is difficult because of “situational uniqueness” (p.220) but the key element is “the representativeness of the informants” (p.220) in transferability (Krefting, 1991). In order to achieve transferability, sample selection is important in

a qualitative research. Informants are selected in appropriate with profile in a study (Krefting, 1991). In the present study, participants were selected by defining criteria for the sample pair so it was purposive sampling. Rich and thick description about context of the study, participants, data collection tools, data analysis and time schedule was presented in the methodology part. During data collection process, lesson plan drafts were taken from each pair of participants and survey was administered to seventeen participants in order to get sufficient data. Furthermore, semi-structured interviews were conducted with two pairs. Thus, the transferability is increased via various data collection tools. Getting sufficient data and describing the study clearly helps to present the findings of the study to researchers who study on similar fields, to mathematics educators and to programme developers.

3.9.3 Dependability

According to literature, dependability represents that findings are correlated with data so findings depend on the data (Merriam, 1998). As mentioned in previous section, triangulation supports dependability. In the present study, data triangulation, methodological triangulation, and investigator triangulation were achieved in order to support dependability. Merriam (1998) claims that researchers' and co-coder's position is a significant point to establish dependability in a qualitative study. Therefore, the researcher's position in the current study was provided and examined under the section named as researcher role. In order to increase dependability of the study, I also explained how I designed the study, how I collected data and how data analysis was proceed. These issues were presented in detail in the methodological part.

3.9.4 Confirmability

Confirmability is the last criteria to provide trustworthiness in a qualitative study. Confirmability is seen as neutrality (Guba, 1981). Furthermore, confirmability shows

“the repeated direct participatory and documented evidence observed or obtained from primary informant sources” (Leininger, 1994, p. 105). In order to establish confirmability in a qualitative research, some strategies are suggested. Triangulation is one of these strategies to ensure confirmability (Krefting, 1991). In the present study, investigator triangulation was applied in order to decrease the researcher’s bias. Moreover, explanation of the researcher role and detail information about methodology of the study support confirmability of the current study.

To sum up, trustworthiness of the current study was ensured by means of credibility, transferability, dependability, and confirmability. In the following section, researcher role and bias are explained.

3.10 Researcher Role and Bias

Bidoit and Hennicker (1999) claimed that observational approaches help to identify significant points from observable behaviour. In a qualitative research, observation method can be categorized as participant observation and nonparticipant observation (Genzuek, 2003). In nonparticipant observation, researchers make an observation without participation (Fraenkel, Wallen, & Hyun, 2012). While participant observation is divided into two categories which are complete participant and participant-as-observer, nonparticipant observation can be categorized into two groups which are named as observer-as-participant and complete observer. Fraenkel et al. (2012) defined complete observer as:

A role at the opposite extreme from the role of complete participant. The researcher observes the activities of a group without in any way participating in those activities. The subjects of the researcher’s observations may, or may not, realize they are being observed. An example would be a researcher who observes the daily activities in a school lunchroom (p.446).

In this study, researcher was a complete observer during data collection period so during the study, presentations of second drafts of the lesson plans prepared by

PSMTs were observed. I, as the researcher of the study, observed discussions during presentations of the lesson plans and took field notes so I engaged their lessons as an observer. During the meetings with the course instructor, I also took field notes and transcribed voice records of these meetings.

Before spreading survey sheets, I explained that I was flexible to collect their answers so participants could answer the questions without feeling pressure. Moreover, duration and times of interviews were arranged in accordance with participants' suitability. In order to make sure that participants feel comfortable, I talked with participants at the beginning of the interviews. During interviews, I asked questions one by one and I emphasized that their explanations about their integration into lesson plans and their performance during the lesson planning process. Before starting interviews, I explained that there is no correct answer for interview questions.

To sum up, my purpose as the researcher of the present study was to reduce researcher bias. Therefore, I observed meetings with the course instructor and classroom discussions with PSMTs' peers like a complete researcher. For survey and interviews, I aimed to decrease researcher bias by giving information about data collection process transparently to the participants and being flexible towards PSMTs during data collection process.

3.11 Limitations of the Study

In the present study, participants were seventeen PSMTs who took the course named as Introduction to Mathematics Teaching Course at the Undergraduate Programme in Mathematics Education department at Education Faculty in a foundation university. Purposive sampling method was considered while selecting participants so criteria were identified before the selection of the participants. Therefore, the findings would be shaped in accordance with limited responses of the participants selected by considering criteria. Number of participants in this study is limited.

Moreover, in the scope of the course, PSMTs prepared lesson plans and they applied these lesson plans in a real classroom environment every week. After one-to-one teaching, PSMTs discussed about their interactions with students and their experiences while applying these lesson plans. However, this study focused on only one part of this course including preparing lesson plans via meetings with the course instructor and classroom discussions with PSMTs' peers in the classroom. Therefore, the scope of the study is also limited.

Another limitation is related to data collection tools. In the present study, data collection tools were increased during data collection process. This study was conducted during whole semester but in the fifth week, meetings with the course instructor were started to be recorded. Therefore, the first four groups' meetings with the course instructor could not be included to the findings. In terms of data collection tool, there is a limitation in this study.

CHAPTER 4

FINDINGS

The aim of this study is to investigate how first year PSMTs integrate given feedback by the course instructor and classmates into their lesson plans. In this context, this study examines what were changed on lesson plan drafts during lesson planning process, why and how first year PSMTs revised their lesson plans. Also, this study seeks an answer to how first year PSMTs evaluate their performance during lesson planning process.

4.1 Components of Integration into Lesson Plans

In this part, the results of first main research question and the sub-question, which are “*How do first year PSMTs integrate given feedback into their lesson plans?*” and “*What kind of differences are seen between constructed lesson plans by PSMTs in high and low levels?*”, are presented. This examination was categorized under five main components which are placed in the scope of Fink’s integrated course design (2003): teaching/learning activities, learning goals, feedback and assessment, lesson structure, consideration for possible problems. First of all, the findings regarding to first component, which includes how PSMTs integrate given feedback about teaching and learning activities into lesson plans, are represented. Secondly, the findings of second component, which comprises of PSMTs’ consideration and integration of learning goals into lesson plans, are shown. Thirdly, the findings related to third component, which is how PSMTs revise lesson plans and handouts in terms of feedback and assessment, are presented. Nextly, the findings regarding to fourth component, which shows how PSMTs organize lesson plans in the way of lesson structure, are shown. Lastly, the findings related to fifth component, which includes how PSMTs integrate students’ thinking and timing to handle with

unexpected situations during lessons, are presented. These components are appeared as a result of given feedback by the course instructor and classmates to all pairs. They represent codes for first main research question and the sub-question and these codes about PSMTs' integration into the lesson plans are summarized in Table 4.1 below.

Table 4. 1: The Coding of Integration Into Lesson Plans

Components of Integration into Lesson Plans	Coding
Teaching/Learning Activities	- Involving students in learning process via teaching/learning activities - Improving students' performance
Learning Goals	- Focusing on what students will be able to learn after the lesson
Feedback and Assessment	- Evaluate students' performance at the end of the lesson
Lesson Structure	- Following questions from basic to complex - Constructing an order among examples, questions, and activities
Consideration for Possible Problems	- Handling with unexpected situations during lessons

Another table below shows percentage and frequency of given feedback to integrate into lesson plans. Table 4.2 presents given feedback to eight pairs and one PSMT (seventeen PSMTs in total) in the current study.

Table 4. 2: Percentage and Frequency of Given Feedback

Components of Integration into Lesson Plans	Frequency*	Percentage
Teaching/Learning Activities	28	44%
Learning Goals	2	3%
Lesson Structure	11	17%
Consideration for Possible Problems	23	36%

*The frequency represents the number of lesson plan parts/points into lesson plans which discussed during meetings with the course instructor and classroom discussions with classmates.

As seen in Table 4.2, the percentage of given feedback about teaching/learning activities (44%) on lesson plans prepared by PSMTs includes about half of all feedback. Consideration for possible problems follows teaching/learning activities with 36% of feedback. Lesson structure is placed after consideration for possible problems. Moreover, there is a huge gap between lesson structure and consideration for possible problems in accordance with the percentage and the frequency. Finally, the percentage of learning goals (2%) shows minority of given feedback to develop lesson plans. As a result, significant percentage of feedback is seen in teaching/learning activities and consideration for possible problems.

4.1.1 PSMTs' Integration of Teaching/Learning Activities into Lesson Plans

Integration of teaching/learning activities is identified as first component to answer the first main research question and the sub-question. This component is placed under initial design phase of integrated course design. It helps to involve students in learning process during a lesson and improve students' performance for assessment activities. According to Fink's integrated course design (2003), teaching and learning activities can be categorized as active and passive learning. In the current study, all PSMTs apply lesson plans with one or two students. In this situation, it is expected that all activities are prepared in accordance with active learning to encourage students' learning by doing and observing. It means that all teaching/learning activities are discussed about how these activities improve students' learning process in the meetings with the course instructor as a mentor and in the classroom discussions with classmates. Moreover, feedback is given by focusing on how to develop these activities. The percentage and the frequency of revisions by considering feedback about PSMTs' integration of teaching/learning activities are shown in Table 4.3 below.

Table 4. 3: The Percentage and the Frequency of Integrated Feedback of Teaching/Learning Activities

Code	Not revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
Teaching/ Learning Activities	8	28.5%	20	71.5%	28

As seen in Table 4.3, twenty-eight different points of teaching/learning activities in the first drafts of lesson plans prepared by PSMTs were detected. According to the

results, eight points (28.5%) related to integration of teaching/learning activities were not considered by PSMTs while twenty points (71.5%) were considered to revise lesson plans.

Two different levels of PSMTs were identified as low and high level in order to understand results of integration of teaching/learning activities clearly. Given feedback for all pairs of PSMTs' different levels also is presented in Table 4.4.

Table 4. 4: The Percentage and the Frequency of Integrated Feedback of Teaching/Learning Activities in High and Low Levels

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	2	20%	8	80%	10
Low Level	6	33%	12	67%	18

Table 4.4 shows that PSMTs in high level got feedback for ten various points about teaching/learning activities on their lesson plan. They revised eight of them (80%) on the first draft of the lesson plan in accordance with given feedback by the course instructor whereas they did not make changes to two points (20%). On the other hand, PSMTs in low level had feedback for eighteen different parts about teaching/learning activities on their lesson plan. While PSMTs in low level considered feedback for twelve points (67%) on the lesson plan, they did not revise other six points (33%). This presents that PSMTs in high level integrated more feedback given by the course instructor and classmates into the lesson plan than PSMTs in low level as seen in Table 4.4. This difference between these two levels were presented at the end of this part.

The following example is an evidence of integration of teaching/learning activities in the lesson plan prepared by PSMTs in high level.

Example 4.1: For a birthday party, three cakes with same size are prepared.

- *First cake is divided into 6 equal pieces and Ayse eats 2 of these pieces.*
- *Second cake is divided into 6 equal pieces and Emir eats 3 of these pieces.*
- *Third cake is divided into 8 equal pieces and Deniz eats 3 of these pieces.*

(Example 4.1 was taken from the lesson plan prepared by PSMTs in high level)

For the solution of Example 4.1, PSMTs in high level expected students to draw circles for representations of cakes before the meeting with the course instructor. Therefore, they presented answer with circles as seen in Figure 4.1 below.

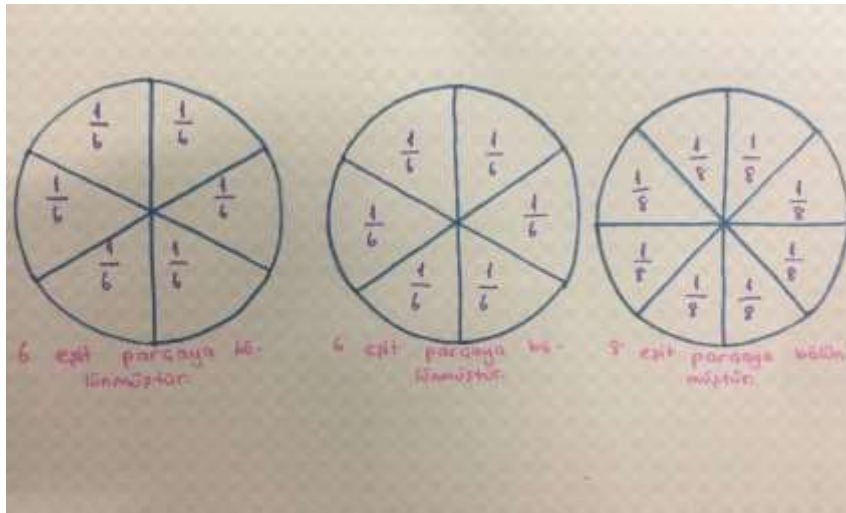


Figure 4. 1: Example 4.1 of before meeting lesson plan in high level

The course instructor suggested to use rectangles instead of circles while drawing cakes. The following excerpt is an example from the voice record of meeting of PSMTs in high level with the course instructor.

The course instructor: Using rectangles gives more advantages in accordance with the research. When you take a unit fraction, you should be able to construct other fractions by means of unit fractions like $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{6}{6}, \frac{7}{6}$. Multiplicative thinking is so important and it can be shown by rectangles easily since transition from rectangles to number lines is easier.

Translation of excerpt above: Arařtırmalara g re, dikd rtgenleri kullanmak daha avantajlıdır. Bir birim kesri aldığınızda, $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{6}{6}, \frac{7}{6}$ gibi dięer kesirleri birim kesir aracılığıyla  retebilirsiniz.  arpımsal d ř nme  ok  nemlidir ve dikd rtgenler yoluyla g sterilebilir.   nk  dikd rtgenlerin sayı doęrusuna transfer edilmesi  ok daha kolaydır.

It is claimed that using rectangle is better than using circle to show shapes of cakes. The shape of a rectangle may be easier for transition of fractions' representations from rectangles to number lines since pieces can be added to both sides of a rectangle shape. On the other hand, adding a pieces into a circle and explaining it very well may be hard to see for students. While giving this feedback, the correlation among topics and improvement of students' thinking mostly were taken into consideration. Therefore, PSMTs in high level integrated rectangles instead of circles to the solution of Example 4.1. Representation of the solution was shown in Figure 4.2 below.

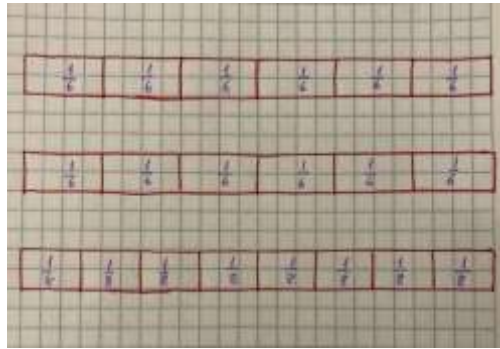


Figure 4. 2: Example 4.1 of after the meeting lesson plan in high level

Integration of rectangles helps students realize the concept of fraction easier than circles. While preparing teaching and learning activities, PSMTs focused on giving concepts by identifying easy and effective ways for students. Therefore, PSMTs in high level integrated rectangles after the meeting with the course instructor by regarding given feedback.

Another example is an evidence of integration of teaching/learning activities in the lesson plan prepared by PSMTs in low level.

Example 4.2: Ali is a computer engineer. There are 6 floors for parking area and 22 floors for working area at his workplace. He parks his car on 5th floor in the parking area. He works on 13th floor. He gets on an elevator from the parking area, he meets Ayse on 3th floor. Ayse gets out of the elevator before Ali. Ali gets out of the elevator after 5 more floors. Show the floors Ali and Ayse get in the elevator and get out the elevator on a number line.

(Example 4.2 was taken from the lesson plan prepared by PSMTs in low level before the meeting with the course instructor)

Example 4.2 was considered as a complex question so it was suggested to change from an undefined question to a well-defined question by using another question.

Example 4.3 shows a new version of Example 4.2 after the meeting with the course instructor.

Example 4.3: Melike and Rumeysa went to a business center called as Levent KULE to apply for internship program. Elevators stop only on a floor people want to go and duration is same to go up and down between each floor. Rumeysa gets on the elevator on floor -5 and she gets out of the elevator on floor 17. Also, Melike gets on the elevator on floor -7 and she gets out of the elevator on floor 14. They use different elevators at the same time. Who arrives to the floor they want to go? Explain the reason. How did you find your answer? (You can show it on a number line.)
(Example 4.3 was taken from the lesson plan prepared by PSMTs in low level after the meeting with the course instructor)

The findings showed that Example 4.3 is clearer than Example 4.2 because Example 4.3 includes details in terms of solution steps. It means that low level PSMTs preferred to put more organized example after the meeting with the instructor. Last example is an evidence of non-integrated teaching/learning activities in the lesson plan prepared by PSMTs in low level.

Example 4.4: Efe and Ece decide to play a game including cyper. They use a number line to place words. They put the word right in the middle of the alphabet to zero (0). After defining its place, the letters on the right side are placed on +1, +2, +3,... respectively. The letters on the left side are placed on -1, -2, -3,... respectively. Each word will be pair with each number in accordance with the rules. According to given explanation, break the codes they send to each other.

(Example 4.4 was taken from the lesson plan prepared by PSMTs in low level before the meeting with the course instructor)

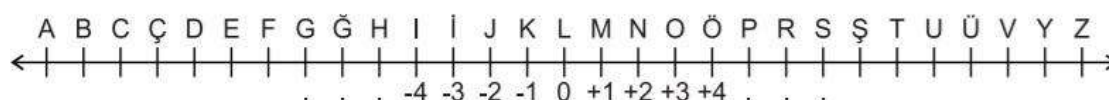


Figure 4. 3: Example 4.4 of before meeting lesson plan in low level

Given feedback about Example 4.4 presented that this example is confusing so it needs to be developed by checking another examples related to number lines and integers. PSMTs in low level removed Example 4.4 after the meeting with the course instructor. They integrate a totally different example to the second draft of the lesson plan regardless of given feedback in order to improve Example 4.4. This shows that PSMTs in low level interpreted the feedback in a different way.

Example 4.5: Start from the point of -27 and move another number which is greater than -27. Follow a path by marking the greatest number around the starting number in each step. Define the last honeycomb as end point. After you finish the path, show marked number on a number line.

(Example 4.5 was taken from the lesson plan prepared by PSMTs in low level after the meeting with the course instructor)

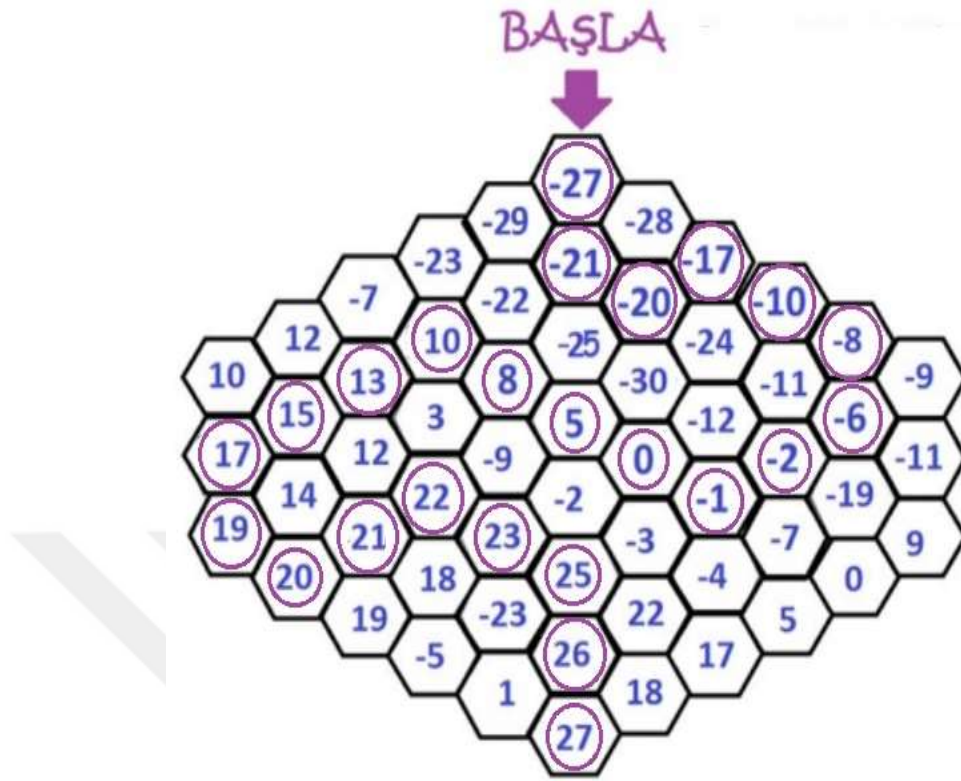


Figure 4. 4: Example 4.5 of after meeting lesson plan in low level

As a result, PSMTs in high level got less feedback about teaching/learning activities on their lesson plans than PSMTs in low level. It showed that most of teaching/learning activities on the first draft of the lesson plans prepared by PSMTs in high level were correlated with active learning and students' learning process. On the other side, it presented that most of teaching/learning activities on the first draft of the lesson plans prepared by PSMTs in low level would be revised to make them appropriate for active learning. Furthermore, PSMTs in high level mostly integrated given feedback by the course instructor about teaching/learning activities on their lesson plans while PSMTs in low level interpreted given feedback by the course instructor in a various way. Therefore, PSMTs in low level showed low performance for integration of teaching/learning activities into lesson plans.

The second component of PSMTs' integration into lesson plans via feedback given by the course instructor and classmates is learning goals. It is about purpose of the lesson by asking a question "What do you want students to learn by the end of the

lesson, that will still be with them several years later?” (Fink, 2003, p.5). The results regarding to PSMTs’ integration of learning goals into lesson plans after the meeting with the course instructor are presented below.

4.1.2 PSMTs’ Integration of Learning Goals into Lesson Plans

Integration of lesson goals is identified as second component to answer the first main research question and the sub-question. This component is also placed under initial design phase of integrated course design. It helps to decide extent of a lesson by focusing on what students will be able to learn after the lesson. The percentage and the frequency of revisions by considering feedback about PSMTs’ integration of learning goals are shown in Table 4.5 below.

Table 4. 5: The Percentage and the Frequency of Integrated Feedback of Learning Goals

Code	Not Revised		Revised		Total
	Frequency	Percentage	Frequency	Percentage	Number of Feedback
Learning Goals	0	-	2	100%	2

As can be seen in Table 4.5, feedback given by the course instructor and classmates was just for two different learning goals on two various lesson plans. PSMTs showed full performance by integrating given suggestions into their lesson plans. The reason why there are less comment about learning goals than comments about teaching/learning activities was explained by PSMTs through survey. According to PSMTs’ responses, all PSMTs used Mathematics books related to Turkish Curriculum while preparing their lesson plans as seen in Table 4.6 below. Therefore, this minimized to exceed the extent of the lesson.

Table 4. 6: Resources Used by PSMTs During the Lesson Planning Process

Resources		Frequency	Examples
Mathematics	book	17	<i>Mathematics book published by MoNE should be checked to be parallel with curriculum.</i> <i>[Müfredatla paralel olması için MEB matematik kitabı kullanıldı.]</i>
related to Turkish Curriculum			
Test books		6	<i>Test books were used to explore questions.</i> <i>[Soru bulmak için test kitapları kullanıldı.]</i>
Internet		17	<i>Some qualified examples were taken from the Internet,</i> <i>[İnternetteki kaliteli sorular alındı.]</i>

N=17

Table 4.7 below shows the frequency and percentage of feedback about integration of learning goals by dividing PSMTs as high and levels.

Table 4. 7: The Percentage and the Frequency of Integrated Feedback of Learning Goals in High and Low Levels

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	0	-	1	100%	1
Low Level	0	-	1	100%	1

Table 4.7 reveals that PSMTs in high level and PSMTs in low level got feedback for one point about learning goals on their lesson plans. Moreover, these PSMTs integrated given feedback by the course instructor and classmates into the lesson plans in an appropriate way.

An example of integration of learning goals in the lesson plan prepared by PSMTs in high level is presented as follows.

Example 4.6: *Compare and order the fractions of $\frac{5}{6}$, $\frac{2}{9}$, $\frac{8}{18}$ by following steps:*

- *Color whole stick of the first one and write '1'*
- *Color half of the second stick and write 'half'*
- *Divide the third stick in 6 equal pieces and be asked whether each piece is equal. Then, show $\frac{5}{6}$ on the third stick by modelling*
- *Show the fractions of $\frac{2}{9}$ and $\frac{8}{18}$ on the fourth and fifth sticks*

(Example 4.6 was taken from the lesson plan prepared by PSMTs in high level before the meeting with the course instructor)

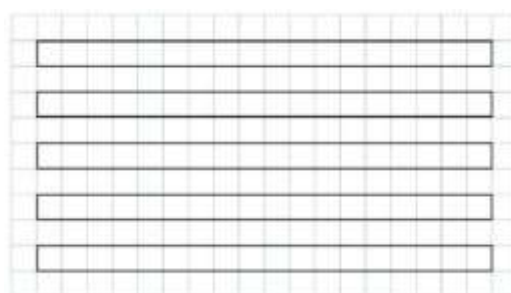


Figure 4. 5: Example 4.6 of before meeting lesson plan in high level

In the meeting, the instructor asked that whether equivalent fractions may be included in Example 4.6. After this recommendation, PSMTs in high level extended the content of the lesson and they revised the example in accordance with the feedback given by the course instructor. A new version of the example is shown as

Example 4.7 so it shows that PSMTs in high level integrated the feedback about learning goals into the lesson plan properly.

Example 4.7: Compare and order the fractions of $\frac{8}{18}$, $\frac{5}{6}$, $\frac{15}{18}$, $\frac{2}{9}$ and

$\frac{4}{18}$ by following steps:

- Color whole stick of the first one and write '1'. Then, say what equals to 1 as whole by considering fractions with 6, 9 and 18 in their denominators
- Color half of the second stick and write 'half'
- Divide the third stick into 18 equal pieces and be asked equivalents of each piece ($\frac{1}{18}$). Then, show the fraction of $\frac{8}{18}$ on the same stick by modelling
- As similar, show the fractions of $\frac{5}{6}$ and $\frac{15}{18}$ on the fourth and fifth sticks
- Lastly, show the fractions of $\frac{2}{9}$ and $\frac{4}{18}$ on the sixth and seventh sticks
(Example 4.7 was taken from the lesson plan prepared by PSMTs in high level after the meeting with the course instructor)

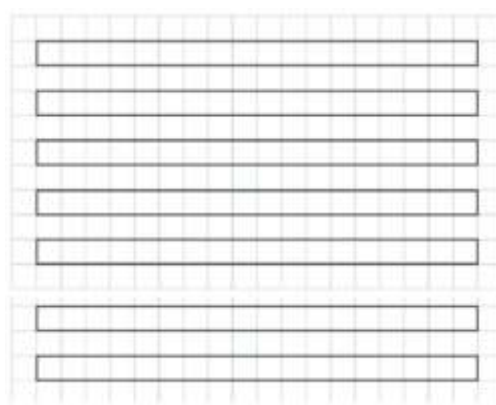


Figure 4. 6: Example 4.7 of after meeting lesson plan in high level

As seen in Example 4.7, PSMTs in high level organized the example by adding equivalent fractions after the meeting with the course instructor. They focused on the

equivalent fractions in two parts. In the first part, PSMTs in high level would ask students to compare the fractions of $\frac{5}{6}$ and $\frac{15}{18}$ by means of coloring sticks. Also, they would let students show the fractions of $\frac{2}{9}$ and $\frac{4}{18}$ on sticks. By integrating these two questions in the example, PSMTs in high level present another topic which is equivalent fractions, which means that they enlarge scope of the lesson. It affects learning goals in this lesson so these changes are considered as PSMTs' integration of learning goals into lesson plans.

Another example is an evidence of integration of learning goals in the lesson plan prepared by PSMTs in low level as follows.

Example 4.8: If $A = \{cat, rabbit, giraffe\}$ is a set, universal set of A can be shown as $E = \{Sets\ of\ Animals\}$.

(Example 4.8 was taken from the lesson plan prepared by PSMTs in low level before the meeting with the course instructor)

PSMTs in low level put definition of universal set, representation of universal set, and an example of universal set as seen in Example 4.8. The topic of universal set was a totally new topic for the lesson. Although it was not correlated with learning goals for the lesson, PSMTs in low level presented universal set under the main topic which was concept of sets including null, intersection and union sets. This example was discussed in the meeting and they all agreed to remove it because it was not included in the curriculum of the course. Therefore, PSMTs in low level organized learning goals and removed Example 4.8 from the lesson plan after the meeting.

As a consequence, PSMTs in high and low levels integrated given ideas about learning goals into their lesson plans. It shows that meetings with the course instructor triggered PSMTs to make changes about learning goals in the lesson plans.

The third component of PSMTs' integration into lesson plans through feedback given by the course instructor and classmates is feedback and assessment. Feedback and assessment part on a lesson plan is related to learning goals because teachers

apply feedback and assessment to identify whether students achieve learning goals at the end of the lesson. The findings related to PSMTs' integration of feedback and assessment into lesson plans after the meeting with the course instructor are presented below.

4.1.3 PSMTs' Integration of Feedback and Assessment into Lesson Plans

Integration of feedback and assessment is identified as third component to answer the first main research question and the sub-question. It helps teachers to evaluate students' performance at the end of the lesson. This component is placed under initial design phase of integrated course design. This part was categorized into two titles: forward-looking assessment and backward-looking assessment. Forward-looking assessment includes questions, examples, and activities related to daily life concepts. In this kind of assessment, it can be a situation or a scenario about the topic of the lesson to measure students' learning. On the other hand, backward-looking assessment includes direct questions regardless of problem solving skills and daily life examples. Forward-looking assessment and backward-looking assessment are defined in accordance with feedback and assessment part in Fink's integrad course design (2003). These codes about PSMTs' integration of feedback and assessment into the lesson plans are summarized in Table 4.8 below.

Table 4. 8: The Coding of PSMTs' Integration of Feedback and Assessment

Feedback and Assessment	Coding
Forward-Looking Assessment	Constructing a scenario including daily life situations and problem solving skills
Backward-Looking Assessment	Using direct questions without daily life situations and problems solving skills

Each pair of PSMTs prepared a handout for a lesson so these handouts were used to assess students' performance at the end of the lesson. The percentage and the frequency of PSMTs' integration of feedback and assessment are presented in Table 4.9 below.

Table 4. 9: The Percentage and the Frequency of Feedback and Assessment Used by PSMTs in High and Low Levels

PSMTs' Levels	Forward-Looking Assessment		Backward-Looking Assessment		Total Number of Questions**
	Frequency	Percentage	Frequency	Percentage	
High Level	2	20%	8	80%	10
Low Level	0	-	20	100%	20

**It includes mostly investigation of handouts instead of lesson plans. Therefore, the findings of feedback and assessment are separately presented on Table 4.9 in consideration of number of questions which discussed during meetings with the course instructor and classroom discussions with classmates.

As can be seen in Table 4.9, most of questions on handouts were not proper to forward-looking assessment. According to Table 4.9, two questions (20%) selected by PSMTs in high level may be categorized in forward-looking assessment. However, the rest (80%) of questions presented in lesson plans of PSMTs in high level is placed under backward-looking assessment. Moreover, twenty questions (100%) selected by PSMTs in low level might be evaluated as backward-looking assessment. It shows that PSMTs in both levels mostly faced with the problems while selecting the most appropriate feedback and assessment way for students. Forward-looking assessment is suggested to encourage students' achievement more than backward-looking assessment (Fink, 2003). However, Table 4.9 presents that in the current study, PSMTs commonly were in tendency to choose questions which give answers directly via calculation. The percentage and frequency of questions revised by PSMTs in high and low levels can be seen in Table 4.10 below.

Table 4. 10: The Percentage and the Frequency of Integrated Feedback and Assessment in High and Low Levels

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	0	-	10	100%	10
Low Level	4	20%	16	80%	20

According to Table 4.10, PSMTs in both levels mostly integrate given feedback by the course instructor and classmates in order to organize questions on lesson plans and handouts. Ten questions (100%) shown on lesson plans prepared by PSMTs in high level are revised. When PSMTs' integration in low level is analyzed, it might be seen that they properly revised sixteen questions (80%). However, they could not be able to revise four questions (20%) in accordance with Table 4.10.

An example of forward-looking assessment under PSMTs' integration of feedback and assessment is presented as follows.

Example 4.9: Mr. Erkan and Ms. Filiz prepare a list for shopping but they forget to inform each other. When they go to the market, Mr. Erkan and Ms. Filiz bring their lists. Therefore, they decide to make a list by combining their lists which are already prepared before going to the market. Lists are presented below.

Mr. Erkan's list

- Snack
- Salt
- Mushroom
- Pepper
- Tea
- Macaroni

Ms. Filiz's list

- Salt
- Detergent
- Toothpaste
- Napkin
- Tea
- Meat
- Bread
- Cheese

- a) Which of these products are listed in both of the lists?
- b) After they combine their lists, do they need to buy the products which are placed in both lists twice? Explain.

(Example 4.9 was taken from the lesson plan prepared by PSMTs in high level)

As seen in Example 4.9 prepared by PSMTs in high level, this may be seen in real-life so it includes a real-life situation including sets. PSMTs in high level encourage students to think about problem solving by using lists instead of sets. In this example, PSMTs show the connection between mathematical problems and daily-life problems. Therefore, students need to focus on using of union and intersection sets in real-life while looking for a logical answer. It means that this example helps teachers to see students' understanding about this topic so it is a representation of forward-looking assessment.

The following example presents a backward-looking assessment under PSMTs' integration of feedback and assessment.

Example 4.10: Order numbers from the least to the greatest number and then, show them on a number line. The numbers are -17, 34, -53, -87, -44, 58.

(Example 4.10 was taken from the lesson plan prepared by PSMTs in low level)

As can be seen in Example 4.10 prepared by PSMTs in low level, it is a typical question related to integers. In this example, PSMTs are not able to support students' learning process by means of real-life situations. If students know how to order these numbers, they may answer the question directly. If students do not know it, they may not even make a guess about solution ways. On the other hand, Example 4.9 gives an opportunity to visualize the situation so Example 4.10 is an evidence for a backward-looking assessment.

The fourth component of PSMTs' integration into lesson plans through feedback given by the course instructor and classmates is lesson structure. This component focuses on order on a lesson plan by considering level of questions. The results regarding with PSMTs' integration of lesson structure into lesson plans after the meeting with the course instructor are presented below.

4.1.4 PSMTs' Integration of Lesson Structure into Lesson Plans

Integration of lesson structure is identified as fourth component to answer the first main research question and sub-question in the present study. This component is placed under intermediate design phase of integrated course design. Lesson structure is related to order among examples, questions, and activities on a lesson plan. It means that lesson structure is based on level of questions because flow of a lesson should follow questions from basic to complex. Hence, each feedback and integration related to order on the lesson plans was categorized under integration of lesson structure. The percentage and the frequency of PSMTs' integration of lesson structure are presented in Table 4.11 below.

Table 4. 11: The Percentage and the Frequency of Integrated Feedback of Lesson Structure

Code	Not Revised		Revised		Total
	Frequency	Percentage	Frequency	Percentage	Number of Feedback
Lesson Structure	5	45%	6	55%	11

As seen in Table 4.11, eleven points in total were detected to revise from the meeting with the course instructor and classroom discussions with classmates. About half of given feedback about lesson structure was not considered while revising the lesson plans. In other words, PSMTs organized six points (55%) related to lesson structure

while they did not provide revision to five points (45%) on the lesson plans. Table 4.12 below shows the frequency and percentage of feedback about integration of lesson structure by dividing PSMTs as high and levels.

Table 4. 12: The Percentage and the Frequency of Integrated Feedback of Lesson Structure in High and Low Levels

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	0	-	1	100%	1
Low Level	5	50%	5	50%	10

Table 4.12 shows that most of the feedback by the course instructor and classmates was given to lesson plans prepared by PSMTs in low level. It means that in accordance with lesson structure, there was a huge difference between the lesson plans prepared by PSMTs in high level and the lesson plans prepared by PSMTs in low level. Also, PSMTs in low level provided revision for half of the points mentioned in the meeting with the course instructor and classroom discussions with classmates. Table 4.12 and interview present that PSMTs in high level interpreted and applied given feedback in a proper way. On the other hand, PSMTs in low level did not show understanding well about the importance of lesson structure so they revised just half of points discussed in the meeting with the course instructor and classroom discussions with classmates.

The following example is an evidence of non-integrated lesson structure in the lesson plan prepared by PSMTs in low level.

Example 4.11: Gizem takes 1 apple, 1 pear, 1 banana, 1 strawberry, and 1 kiwi from a bazaar. She puts apple and pear in same bag while putting banana in a different bag. Also, she puts strawberry and kiwi in another bag. Then, she decides to combine bags. She puts the bag including apple and pear into the bag with banana. After that, she

*puts the bag with banana into the bag involving strawberry and kiwi.
According to these steps, how many fruits do the bags with the most
and the least fruits include?*

*(Example 4.11 was taken from the lesson plan prepared by PSMTs
in low level before the meeting with the course instructor)*

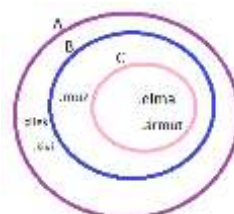


Figure 4. 7: Example 4.11 of before meeting lesson plan in low level

It can be seen that Example 4.11 includes multiple steps to find the solution. Moreover, it is related to union and intersection sets. In the first draft of the lesson plan prepared by PSMTs in low level, Example 4.11 was placed after presenting definition of a set and elements of a set. Union and intersection sets would be presented to students at the end of the lesson in accordance with the lesson plan. Therefore, moving Example 4.11 to the end of the lesson plan was pointed by the course instructor. Even though the reason of replacing the example was explained by the instructor to make it clear, PSMTs in low level did not revise its place. Hence, it was coded as a non-integrated lesson structure in the lesson plans prepared by PSMTs in low level.

Example 4.9 is an evidence of integration of lesson structure in the lesson plan prepared by PSMTs in low level. Although Example 4.9 was prepared by PSMTs in high level, it was also integrated into the lesson plan prepared by PSMTs in low level. In the meeting, the course instructor suggested to use an activity before talking about union and intersection sets and guided them to put Example 4.9 in the lesson plan. Example 4.9 includes combination of two lists for shopping so it is based on union and intersection sets. Therefore, PSMTs in low level placed this example in the lesson plan after the meeting with the course instructor. It was coded as an

integrated lesson structure in the lesson plans prepared by PSMTs in low level because they applied this comment to construct a simple path to follow the lesson.

As a consequence, feedback and comparison of lesson plan drafts for order were coded as PSMTs' integration of lesson structure. The findings showed that PSMTs in low level got almost all feedback about lesson structure in the meeting with the course instructor. However, they consider exactly half of feedback about lesson structure. It meant that PSMTs integrated given feedback by the course instructor into lesson plans from some aspects.

The last component shows regard to integration of unexpected situations by asking "What could go wrong?" (Fink, 2003, p.32). Minimizing the number of unexpected situations and being ready for them are essential points for a lesson plan. The results regarding to the last component are given below.

4.1.5 PSMTs' Integration of Consideration for Possible Problems

Integration of consideration for possible problems is identified as fourth component to answer the first main research question and the sub-question in the current study. This component is placed under final design phase of integrated course design. It helps to recognize unexpected situations while applying a lesson plan. Therefore, it can be categorized into two groups: timing and student thinking. Timing is related to use time efficiently during the lesson so it is based on the question, which is "Will the students have time to do their out-of-class assignments?" (Fink, 2003, p.32). Another perspective of consideration for possible problems is related to the question, which is "What problems might arise in the lesson plan as you envision it at this time? What might you do to solve these problems?" (Fink, 2003, p.32). While answering this question, student thinking was detected as second aspect of consideration for possible situations. These codes about PSMTs' integration of consideration for possible problems into the lesson plans are summarized in Table 4.13 below.

Table 4. 13: The Coding of PSMTs' Integration of Consideration for Possible Problems

Consideration for Possible Problems	Coding
Timing	Giving enough time for each part in lesson plans including presentation of a topic, activities, examples, assessment parts
Student Thinking	Thinking about possible student thinking regarding to different ideas and misconceptions

The percentage and the frequency of PSMTs' integration of consideration for possible problems in terms of timing and student thinking are presented in Table 4.14 below.

Table 4. 14: The Percentage and the Frequency of Integrated Feedback of Consideration for Possible Problems

Consideration for Possible Problems	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
Timing	0	-	4	100%	4
Student Thinking	4	21%	15	79%	19

As can be seen in Table 4.14, the course instructor and classmates emphasized twenty-three points in lesson plans and most of feedback was related to student thinking. According to Table 4.14, PSMTs mostly organized the lesson plans by considering given feedback in the meeting. While fifteen points (79%) about different student thinking were revised properly after the meeting with the course instructor, four points (21%) in the lesson plans were not changed. Although there

was less suggestion about timing than about student thinking, PSMTs showed full performance in terms of integration of ideas about timing.

The percentage and the frequency of integration of timing by PSMTs in high and low levels are shown in Table 4.15 below.

Table 4. 15: The Percentage and the Frequency of Integrated Feedback of Timing

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	0	-	2	100%	2
Low Level	0	-	2	100%	2

According to Table 4.15, there are four points of feedback related to timing and these points (100%) are organized in accordance with feedback. The following example is an evidence of timing in the lesson plan prepared by PSMTs in high level.

Example 4.12: Students will:

- Draw a line on a sheet of a plotting paper
- Place the points of 0 (zero) and 1(one) [If students place them to endpoints, “Should they always be shown at the endpoints of the line?” can be asked]
- Show midpoint between 0 and 1
- Find a representation for the midpoint between 0 and 1 (such as $\frac{4}{8}$)
- Find a representation for midpoint between 0 and $\frac{4}{8}$ (so it is $\frac{2}{8}$)
- Find a representation for midpoint between 0 and $\frac{2}{8}$ (so it is $\frac{1}{8}$)

After they finish first part, same process is applied on a sheet of a plane paper.

(Example 4.12 was taken from the lesson plan prepared by PSMTs in high level before the meeting with the course instructor and classroom discussion with classmates)

Example 4.12 was a multistep problem so it would take time to complete it in accordance with the meeting with the course instructor and classroom discussion with the classmates. The feedback showed that Example 4.12 was important to encourage students' learning so PSMTs would spend more time for this example. In this situation, the course instructor suggested to remove some parts including addition and subtraction of fractions. Therefore, PSMTs in high level focused on application of Example 4.12 properly by expanding time for this example. It was coded as PSMTs' integration of timing into lesson plans.

Another point of consideration for possible problems in lesson plans prepared by PSMTs was student thinking. Table 4.16 shows that feedback about student thinking mostly was integrated to the lesson plans after the meeting with the course instructor.

Table 4. 16: The Percentage and the Frequency of Integrated Feedback of Student Thinking

PSMTs' Levels	Not Revised		Revised		Total Number of Feedback
	Frequency	Percentage	Frequency	Percentage	
High Level	0	-	7	100%	7
Low Level	4	33%	8	67%	12

As can be seen in Table 4.16, the course instructor and the classmates focused on nineteen points into lesson plans which are related to student thinking. According to Table 4.16, while seven points are appeared on lesson plans prepared by the PSMTs in high level, twelve points are related to lesson plans prepared by the PSMTs in low level. The findings show that PSMTs in high level made revision in consideration of feedback (%100). However, PSMTs in low level revised their lesson plans in eight

points (67%) when four points (33%) were not changed. An example is an evidence of integration of student thinking in the lesson plan prepared by PSMTs in low level as follows.

Example 4.13: How does temperature change when it's on blue side? Will temperature be negative? Is temperature always below zero when it decreases? Is water frozen when temperature is below zero?

(Example 4.13 was taken from the lesson plan prepared by PSMTs in low level after the meeting with the course instructor)



Figure 4. 8: Example 4.13 of after meeting lesson plan in low level

Example 4.13 was not placed in the first draft of the lesson plan prepared by PSMTs in low level. “If temperature is below zero, is it heating or cooling?” is taken from the lesson plan prepared before the meeting. This question was interpreted as a misleading question because it would direct students to think about relation between cooling and temperature below zero. The instructor explained that cooling affects temperature but it does not mean cooling always decreases temperature below zero. In the meeting with the course instructor, PSMTs in low level were agreed to integrate Example 4.13 to avoid misunderstanding. Therefore, PSMTs in low level preferred to give this example to explain that water is frozen when temperature is zero. It means that cooling does not mean always temperature below zero. The reason why PSMTs in low level chose Example 4.13 after the meeting with the course instructor was to connect negative and positive integers with daily life examples.

Integration of Example 4.13 into the lesson plan prepared by PSMTs in low level was coded as student thinking to consider possible problems during the lesson.

A figure is an evidence of non-integrated student thinking in the lesson plan prepared by PSMTs in low level as follows.

- Pozitif (+) ve negatif (-) tam sayılar, zıt yön ve zıt değerleri matematiksel dille ifade etmek için kullanılır.

Örneğin;

Zıt yön olan durumların ifadesi:



Zıt değerlerin ifadesi:



Figure 4. 9: Example of terminologies of before meeting lesson plan in low level

As seen in Figure 4.9, PSMTs chose to give some terminologies while explaining positive and negative integers. An excerpt from the voice record of the meeting of PSMTs in low level with the course instructor was presented below.

The course instructor: When students memorize terminologies, students may say that if there is a negative number, it represents lost. Therefore, students may try to make generalization by means of these terminologies. It is not always useful because students construct it in this way.

Translation of excerpt above: Öğrenciler bu terminolojileri ezberlediğinde, negatif bir sayı gördüklerinde bunun kaybı temsil ettiğini söyleyebilirler. Bundan dolayı da öğrenciler, terminolojileri kullanarak genelleme yapmaya çalışabilirler. Bu her zaman yararlı değil çünkü öğrenciler bilgiyi yapılandırıyorlar.

It was explained that memorizing these terminologies would lead students to make generalizations about positive and negative integers. Even after this explanation, PSMTs in low level did not remove this part. The reason why they kept Figure 4.9 on the lesson plan was expressed by claiming that students would see these terminologies in their classroom as pattern so they would keep the terminologies. It was coded as non-integrated student thinking.

Another example is an evidence of non-integrated student learning in the lesson plan prepared by PSMTs in low level as follows.

Example 4.14: “-2, 5, -11, 0, 27, -27, 9”

- *Can you see any similarity among given numbers?*
- *How can you categorize them into two groups?*
- *Which numbers are positive among them?*

(Example 4.14 was taken from the lesson plan prepared by PSMTs in low level before the meeting with the course instructor)

Example 4.14 was presented as a starting example on the lesson plan before the meeting with the course instructor. While discussing about Example 4.14, PSMTs in low level explained their expectations for the second question, which was “How can you categorize them into two groups?”. In this part, constructing groups as positive and negative integers was expected by PSMTs in low level. There was no specific groups for this example so students could categorize them in various ways. The instructor in the meeting asked what PSMTs would do in this unexpected circumstance. The lesson plan would be revised after the meeting with the course

instructor by integrating guided questions. However, PSMTs in low level removed Example 4.14 from the lesson plan after the meeting and they put a totally different figure as shown below. This integration was not related to feedback so it was coded as non-integrated student thinking in the lesson plan.



Figure 4. 10: Example of positive and negative integers of after meeting lesson plan in low level

Instead of Example 4.14, PSMTs in low level decided to use Figure 4.10 after the meeting with the course instructor. The purpose of this figure was to show magnitudes of positive and negative numbers through houses on the number line. However, there was no correlation between numbers and magnitudes of houses in Figure 4.10. Although the feedback was about developing Example 4.14 by considering student thinking, it was not integrated into the lesson plan. Therefore, this was coded as non-integrated student thinking in the lesson plan.

In summary, in the current study, PSMTs' integration into lesson plans via feedback given by the course instructor and classmates was examined under five components including teaching/learning activities, learning goals, feedback and assessment, lesson structure, and consideration for possible problems. The findings regarding to first component, which is teaching/learning activities, was investigated under two categories as active learning and passive learning. Also, the findings related to third component, which is feedback and assessment, was categorized into two groups:

forward-looking assessment and backward-looking assessment. Finally, the findings regarding to fifth component, which is consideration for possible problems, was examined under two categories such as timing and student thinking. On the other hand, the findings related to second and fourth components, which are learning goals and lesson structure, were not divided into sub-categories. The following part presents the findings related to second research question below.

4.2 PSMTs' Engagement in Lesson Planning Process

In this part, the findings related to second research question, which is *"How do first year PSMTs evaluate their performance during their engagement in lesson planning process?"*. In the current study, PSMTs' engagement in lesson planning process includes how PSMTs evaluate their performance about lesson planning, what points PSMTs consider in planning a lesson, and how PSMTs assess role of meetings with a course instructor and classroom discussions with classmates during lesson planning process. Codes are defined in accordance with tendency of PSMTs' responses. The findings are categorized into three dimensions: PSMTs' self-evaluation of their performance during lesson planning process, PSMTs' self-evaluation of context of lesson planning, PSMTs' evaluation of meeting with a course instructor. The findings related to first dimension, which is PSMTs' self-evaluation of their performance during lesson planning process, include PSMTs' responses about their weakness and strength while planning a lesson. The findings regarding to second dimension, which is PSMTs' self-evaluation of context of lesson planning, focus on significant parts of a lesson plan. Finally, the findings related to third dimension, which is PSMTs' evaluation of meeting with a course instructor, show how PSMTs assess meeting with the course instructor during PSMTs' lesson planning process. The categorization of PSMTs' engagement in lesson planning process is summarized in Table 4.17 below.

Table 4. 17: The Coding of PSMTs' Engagement in Lesson Planning Process

PSMTs' Engagement in Lesson Planning Process	Coding
PSMTs' Self-Evaluation of Their Performance During Lesson Planning Process	Including PSMTs' weakness and sufficiency while planning a lesson including lesson plans' components
PSMTs' Self-Evaluation of Context of Lesson Planning	Including necessary points for a lesson plan such as situational factors, teaching/learning activities, and lesson structure
PSMTs' Evaluation of Meeting with a Course Instructor	Including PSMTs' responses about efficiency and deficiency of the meeting with the course instructor

4.2.1 PSMTs' Self-Evaluation of Their Performance During Lesson Planning Process

The results related to how first year PSMTs evaluated their performance during their engagement in lesson planning process were examined in accordance with PSMTs' responses to interview and survey questions. In survey, *"What do you think about your strength and deficiency to plan a lesson? How can you improve yourself to handle with your deficiency in terms of lesson planning?"* was asked to get information about how PSMTs evaluated themselves during this period. Responses of PSMTs were categorized in terms of their tendency related to components of Fink's integrated course design (2003). According to PSMTs' responses, four categories were identified: weakness of situational factors, weakness of

teaching/learning activities, weakness of consideration for possible problems, and sufficiency of lesson planning. Teaching/learning activities and consideration for possible problems were identified in the first part of the present study. Situational factors are placed under initial design phase of Fink's integrated course design (2003). It includes factors which may affect teaching/learning process directly or indirectly such as number of students in a class, characteristic of students and a teacher, using language, learning expectations, and learning environment. Therefore, PSMTs' responses including these points are coded as weakness of situational factors. Another category is named complete planning which is defined in accordance with the tendency of PSMTs' responses. When PSMTs see their performance enough for lesson planning, this kind of responses is coded as sufficiency of lesson planning. As seen in Table 3.12 in the previous chapter, these codes are explained in detail. Furthermore, the summary of these codes related to PSMTs' responses about their performance during the engagement in lesson planning process is presented in Table 4.18 below.

Table 4. 18: Frequency, Percentage, and Examples of PSMTs' Self-Evaluation of Their Performance During Lesson Planning Process

PSMTs' Deficiencies	Frequency	Percentages	Examples
Weakness of Situational Factors	1	5.88%	<i>I asked many times by myself "How can I explain the topic clearly?".</i> <i>[“Konuyu anlaşılır bir şekilde nasıl anlatırım?” diye kendi kendime çok sordum.]</i>
Weakness of Teaching/Learning Activities	3	17.64%	<i>In the part of preparing questions, I felt deficient.</i> <i>[Soru hazırlama kısmında kendimi eksik hissettim.]</i> <i>I struggled to research while finding an appropriate article correlated with the topic.</i> <i>[Konuyla ilgili uygun makaleyi bulmaya çalışırken zorlandım.]</i>
Weakness of Consideration for Possible Problems	8	47.05%	<i>I had problems while trying to find students' thinking.</i> <i>[Öğrenci düşünişü bulmakta zorlandım.]</i>
Sufficiency of Lesson Planning	5	29.43%	<i>I realized I was qualified to plan a lesson.</i> <i>[Ders planlamada kendimi yeterli gördüm.]</i>

N=17

(Examples in Table 4.18 were taken from the survey)

According to Table 4.18, PSMTs evaluated themselves weak mostly in terms of consideration for possible problems. About half of PSMTs expressed that they struggled with thinking about student thinking. Three PSMTs (17.64%) stated their weakness as identifying appropriate teaching/learning activities as seen in Table 4.18. Only one PSMT pointed on using proper language as weakness of situational factors. On the other hand, about 30% of PSMTs evaluated their performance by explaining that they put in sufficient performance during lesson planning process.

Next dimension of PSMTs' engagement in lesson planning process is PSMTs' self-evaluation of important points on lesson plans. This dimension is related to what points PSMTs consider while planning a lesson and the findings are presented below.

4.2.2 PSMTs' Self-Evaluation of Context of Lesson Planning

PSMTs' self-evaluation of context of lesson planning is identified as second dimension to answer the second main research question, which is *"How do first year PSMTs evaluate their performance during their engagement into lesson planning process?"*. A question in survey was asked PSMTs to comprehend PSMTs' responses to the second main research question. Therefore, PSMTs were inquired about components of a lesson plan prepared by themselves via *"Which points did you consider while preparing a lesson plan? Why?"*. The findings were examined under three categories: situational factors, teaching/learning activities, and lesson structure. These three categories were identified above. Frequency, percentage, and examples of PSMTs' self-evaluation of context of lesson planning are presented in Table 4.19 below.

Table 4. 19: Frequency, Percentage, and Examples of PSMTs' Self-Evaluation of Context of Lesson Planning

Points Defined by PSMTs	Frequency of Statements	Percentages of Statements	Examples
Situational Factors	6	43%	<i>A plan should be clear for each student.</i> <i>[Her öğrencinin anlayabileceği bir plan olması gerekir.]</i> <i>A plan should be clear about what teachers should do.</i> <i>[Öğretmenlerin ne yapması gerektiği konusunda plan açık olmalı.]</i>
Teaching/Learning Activities	16	94%	<i>Examples should be appropriate to students' learning level.</i> <i>[Öğrencilerin seviyesine uygun örnekler seçilmeli.]</i> <i>While preparing examples, they should be appropriate to daily life.</i> <i>[Sorular oluşturulurken günlük hayat ile bağdaştırılmalı.]</i> <i>A lesson plan should include different teaching ways to support students' understanding.</i> <i>[Bir ders planı, öğrencinin öğrenmesini desteklemek için farklı öğretim yöntemleri içermeli.]</i>
Lesson Structure	2	18%	<i>Examples should be placed from basic to complex.</i> <i>[Sorular kolaydan zora doğru sıralanmalı.]</i>

N=17

(Examples in Table 4.19 were taken from the survey)

As seen in Table 4.19, all PSMTs except one (94%) gave special attention to teaching/learning activities while preparing their lesson plans. Their answers showed that PSMTs focused on students' learning level, daily life problems, and different teaching ways while selecting teaching/learning activities. Furthermore, almost half of PSMTs (43%) used expressions related to situational factors. These PSMTs focused on using clear language to transfer each part of their lesson plans to students and other PSMTs who would apply same lesson plan. Moreover, 18% of PSMTs mentioned about importance of lesson structure by using that explanation which was *"Examples should be placed from basic to complex."* (an excerpt from the survey).

Last dimension of PSMTs' engagement in lesson planning process is PSMTs' evaluation of meeting with a course instructor. This dimension is related to PSMTs' feelings and ideas about the meeting with the course instructor during their lesson planning process. The findings related to the last dimension are given below.

4.2.3 PSMTs' Evaluation of Meeting with a Course Instructor

PSMTs' evaluation of meeting with a course instructor is identified as third dimension to seek an answer for the second main research question. Responses of PSMTs to survey questions *"What do you think about meetings with the course instructor during lesson planning process? What do you think about feedback given by the course instructor about your lesson plans?"* were taken into consideration. The findings were categorized into two groups: teaching/learning activities and consideration for possible problems. Table 4.20 below shows frequency, percentage, and examples of PSMTs' evaluation of meeting with a course instructor.

Table 4. 20: Frequency, Percentage, and Examples of PSMTs' Evaluation of Meeting with a Course Instructor

PSMTs'	Frequency	Percentages	Examples
Thoughts About Meetings			
Consideration for Possible Problems	16	94.12%	<i>Deficiencies on lesson plans we could not see were shown and some points we did not consider were discussed in these meetings.</i> <i>[Ders planında göremediğimiz eksiklikler gösterildi ve üstünde durmadığımız bazı noktaları bu görüşmelerde tartıştık.]</i> <i>Different student thoughts we could not recognize were appeared by explaining so we realized different thinking ways.</i> <i>[Fark edemediğimiz öğrenci düşünceleri açıklanarak gösterildi. Böylece, bu tür düşünceleri fark etmiş olduk.]</i>
Teaching/Learning Activities	1	5.88%	<i>Introducing a topic with daily life examples were suggested.</i> <i>[Günlük hayat örnekleriyle derse giriş yapılması önerildi.]</i>

N=17

(Examples in Table 4.20 were taken from the survey)

According to Table 4.20, about all PSMTs focused on given feedback about consideration for possible problems on their lesson plans whereas only one PSMT considered feedback regarding to teaching/learning activities on the lesson plan. About 94% of PSMTs explained that these meetings with the course instructor were helpful to realize various student thinking. Therefore, PSMTs extended the scope of unexpected situations related to different student thinking by giving details about how to treat in these situations.

An example of consideration for possible problems is as follows:

Possible student thinking;

- *0 is positive because we do not need to put sign for positive numbers.*
- *0 does not have value.*
- *0 may change its sign in accordance with operations.*

(an excerpt from the lesson plan prepared by PSMTs in low level before the meeting with the course instructor)

As seen above, although possible student thinking was listed about sign of zero by PSMTs in low level, the lesson plan did not include any suggestion to handle with these misconceptions. In the meeting, the course instructor focused on giving enough explanations and representations to manage unexpected situations. After the meeting with the course instructor, PSMTs in low level put a number line including distance of numbers to zero as seen in Figure 4.11 below.

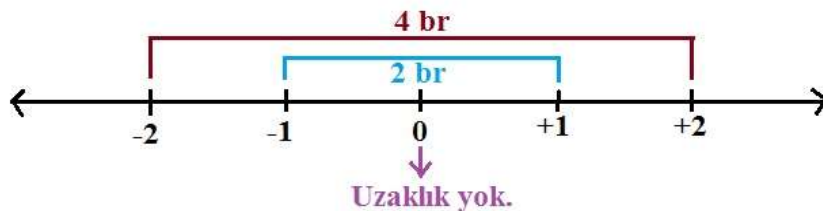


Figure 4. 11: Example of the number line of after meeting lesson plan in low level

As a consequence, PSMTs' integration into lesson plans via feedback given by the course instructor and classmates is examined under five components which are teaching/learning activities, learning goals, feedback and assessment, lesson structure, and consideration for possible problems. The findings regarding to feedback and assessment are categorized into two groups which are forward-looking assessment and backward-looking assessment. Furthermore, the findings related to consideration for possible problems are investigated in terms of timing and student thinking. In the current study, second part is related to PSMTs' engagement in lesson planning process. The findings are presented under three categories which are PSMTs' self-evaluation of their performance during lesson planning process, PSMTs' self-evaluation of context of lesson planning, PSMTs' evaluation of meeting with a course instructor.



CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

The purpose of the present study was to investigate how first year PSMTs integrate given feedback by the course instructor and classmates. Moreover, the study explored first year PSMTs' evaluation about their performance during the process of preparing a lesson plan. In the light of these fundamental aims, this chapter is categorized under three main titles: discussion, implications of study, and recommendations for future research studies.

5.1 Discussion

In the previous chapter, the findings were divided into two groups: PSMTs' integration into lesson plans and PSMTs' self-evaluation during their engagement in lesson planning process so these are discussed under two main sections. In the first section, the changes from the first draft to the third draft of lesson plans are discussed to give more detail about components of integration into lesson plans prepared by the PSMTs. In the second section, PSMTs' self-evaluation during their engagement in lesson planning process is discussed to see PSMTs' weakness and sufficiency from their own perspective. These findings are compared with the results of previous research studies in the literature.

5.1.1 PSMTs' Integration into Lesson Plans

The analysis of the data revealed that the majority of PSMTs might be able to select appropriate learning goals. To be more specific, most of the PSMTs who participated in the current study could prepare their lesson plans properly in consideration of

identified learning goals. However, the findings revealed that PSMTs could not be able to consider students' possible thinking properly while planning a lesson. These findings might be seen consistent with previous study conducted by Taylan (2018) which showed that preservice teachers could not give meaningful explanation to anticipate students' correct and incorrect answer and solutions. The reason of PSMTs' weakness might be lack of experience and one-to-one teaching with students in a real classroom environment. In order to prepare a lesson plan, teachers have to consider many different aspects of a lesson including noteworthy aspects of students' learning, lesson goals, feedback and assessment, lesson structure, and possible problems in a teaching and learning area. McCutheon (1980) claimed that preparing a lesson plan is related to students' needs, which means that students' necessities and thinking ways should be considered while planning a lesson. However, the findings of the current study revealed that PSMTs had problems to identify possible students' thinking. The reason behind this inadequacy might be related to insufficiency of PSMTs' pedagogical content knowledge. Since the PSMTs were freshmen in their first semester at the university and they did not have experience in the field as a teacher before, it is not surprising that most of the PSMTs could not recognize students' different thinking ways. Therefore, having experience might have contributed to PSMTs' pedagogical content knowledge and PSMTs' skills of lesson planning in consideration of students' various thinking.

When data was analyzed in accordance with Fink's integrated course design (2003), five main components of Fink's (2003) design were seen in lesson plans prepared by PSMTs. According to the findings in the current study, given feedback during the meeting with the course instructor mostly focused on integration of teaching and learning activities. To be more specific, most pairs of PSMTs could not identify a suitable learning activity related to teaching topic. These findings might support previous studies in the literature which reported that preservice teachers could face with problems to identify what kind of activities were helpful in students' learning (Sahin-Taskin, 2017; Zingir Gulten, 2013). The reason behind this inadequacy might result from lack of PSMTs' field experience. Fink (2013) suggested that people

comprehend situations with the help of their experiences and learners might be supported in order to construct meaningful understanding from these experiences. In the current study, participants have two class hours to teach students. However, it might be so limited to recognize students' needs from freshmen PSMTs' perspective. In this circumstance, PSMTs might not see clearly the relation between teaching/learning activities and students' necessities.

Furthermore, all pairs of PSMTs got feedback more about identifying suitable activities, also they got feedback more about exploring possible situations during students' learning process. Therefore, there might be relation between selecting appropriate teaching and learning activities as well as consideration for possible problems. According to the findings in the present study, feedback including lesson structure and lesson goals was so limited, which means that PSMTs generally were able to determine what to teach and how to construct flow of a lesson by following questions from simple to complex. The previous research studies also support that preservice teachers could identify learning objectives and goals properly while they could not specify appropriate activities in accordance with students' possible thinking ways (Sahin-Taskin, 2017; Taylan, 2018; Zingir Gulden, 2013). Lesson structure is related to lesson goals and lesson goals are related to the curriculum since lesson goals and lesson structure had been already identified by MoNE. It might help PSMTs to handle with lesson goals and lesson structure easier than identifying teaching/learning activities. On the other hand, PSMTs are unexperienced to determine students' possible thinking ways since PSMTs are freshmen in their first semester at the university. Therefore, lack of experience in one-to-one teaching might cause lack of PSMTs' consideration of students' various thinking ways.

In addition, findings related to component of feedback and assessment showed that while high level PSMTs prepared forward-looking assesment to encourage students think about real-life problems, low level PSMTs presented backward-looking assesment including typical questions. The difference between two levels of PSMTs might result from their various understanding of students' solutions. Lastly, although low level PSMTs got most of feedback from each component, it is not surprising that

given feedback to high level PSMTs was so limited. While feedback to low level PSMTs included huge changes in their lesson plans, feedback to high level PSMTs consisted of small changes to improve lesson plans. It might be related to vision of PSMTs in different levels so their understanding might be various because of their background. High level PSMTs might experience one-to-one teaching unofficially via teaching their siblings, so they might be involved teaching process more than low level PSMTs. It is explained by high level PSMTs during semi-structured interviews. It shows that high level PSMTs might improve their pedagogical content knowledge with the help of unofficial one-to-one teaching experience.

Even though there was a huge difference between lesson plans prepared by the PSMTs in low level and high level, the vast majority of each level of PSMTs were able to determine lesson goals and lesson structure while they could not select suitable teaching and learning activities in consideration of students' possible thinking ways. Similar to previous studies, preservice teachers mostly focused on activities during their lesson planning process (Brown, 1988). The reason behind this inadequacy might be lack of applications and presentations of teaching and learning activities in teacher education programs at universities. Therefore, teacher educators might support PSMTs by showing an activity related to each topic in the subject. Teacher educators and PSMTs might apply different teaching and learning activities in a classroom at the university so PSMTs might have an opportunity to look from students' perspective during application of activities. After PSMTs are engaged into learning process as a student, PSMTs might consider teaching/learning activities in accordance with students' different needs.

Meetings with the course instructor and classmates of PSMTs played a role in PSMTs' integration into their lesson plans in accordance with given feedback. Although classroom discussions with classmates was also considered during their lesson planning process, findings showed that classroom discussions with classmates did not strongly affect integration into their lesson plans. Therefore, meetings with the course instructor were more powerful than discussions in the classroom at the university among classmates. The reason of this finding might be correlated with

Vygotsky's zone of proximal development. As explained by Vygotsky (1978), "A full understanding of the concept of the zone of proximal development must result in reevaluation of the role of imitation in learning." (1978, p.87). In the current study, PSMTs might accept the course instructor's suggestions via meetings. To be more specific, PSMTs might prefer to integrate given feedback by the course instructor into their lesson plans instead of integration of given feedback by their classmates. PSMTs might see the instructor as a qualified assistant in order to improve their lesson plans. In this regard, it shows that PSMTs might evaluate their classmates as an unqualified assistant in terms of guidance. Therefore, PSMTs might integrate mostly given feedback by the course instructor into their lesson plans.

5.1.2 PSMTs' Self-Evaluation During Their Engagement in Lesson Planning Process

At the end of PSMTs' lesson planning process, they evaluated their performance in terms of lesson planning, identifying important points on lesson plans, and meetings with the course instructor. PSMTs in the present study evaluated lesson planning as a very helpful way to see different aspects of teaching ways as a teacher and to realize students' various thinking in learning process, which are consistent with the findings of previous study (Kagan & Tippins, 1992). The reason behind PSMTs' weakness might be lack of experiences like presented in previous section. Özden (2008) suggested that pedagogical content knowledge guides in order to select conceptual tools while preparing a lesson plan. Therefore, improvement of pedagogical content knowledge might help PSMTs' lesson planning process in order to realize students' different thinking.

The findings showed that after meetings with the course instructor, the vast majority of PSMTs integrated given feedback into their lesson plans so they made critical changes in first draft of the lesson plans. PSMTs explained that meetings with the course instructor were useful to see teaching topics from students' aspects since they mostly discussed to solve unexpected problems in a real classroom. During meetings

with the course instructor, PSMTs had opportunity to approach their lesson plans by focusing on possible misconceptions. After PSMTs realized the significance of role of teaching and learning activities to handle with students' possible misconceptions, PSMTs integrated suggestions and their ideas into third draft of their lesson plans. When lesson plan drafts prepared before and after the meeting with the course instructor and classroom discussions with other PSMTs were compared, lesson plans' developmental process was shown up among drafts. Therefore, PSMTs emphasized on how meetings and classroom discussions were helpful for their lesson planning process. This might be correlated to Vygotsky's zone of proximal development since PSMTs might show improvement with support of feedback given by the course instructor. Similarly, Zingir-Gulten (2013) suggested to encourage preservice teachers during their lesson planning so meetings with the course instructor and classroom discussions were the missing part of previous studies. Thus, in the current study, meetings and classroom discussions were integrated into the study to fill the gap of previous studies. The present study revealed the importance of meetings to guide and support PSMTs during their lesson planning process since the vast majority of PSMTs made integration into their lesson plans after the meetings with the course instructor.

Consequently, the current study investigated how PSMTs integrate given feedback by the course instructor and other PSMTs into their lesson plans. Moreover, the present study examined how PSMTs evaluate their performance during their engagement into lesson planning process. Hence, the study took a deeper look at PSMTs' lesson planning within the context of Fink's (2003) integrated course design. In the following sections, implications of the study and recommendations for further studies are presented.

5.2 Implications of Study

In the light of the findings, this study has several implications for teacher educators, curriculum developers, prospective teachers, and in-service teachers.

Participants in the present study were freshmen in their first semester at the university, which means that lesson planning was PSMTs' first experience in terms of teaching a topic. Therefore, teacher educators might integrate applications of teaching and learning activities for different topics. Teacher educators might support preservice teachers to develop their teaching skills via courses such as Introduction to Teaching Courses. During these courses, teacher educators could apply some of these activities, especially one for each topic, to show integration of students' different thinking ways. Therefore, preservice teachers could experience teaching and learning process at the university before internship programme. In this way, preservice teachers could be the part of students' learning process by pretending like a student in a primary, middle, or high school. Therefore, teacher educators can support preservice teachers in implementations of lesson plans.

In the current study, preservice teachers had opportunity to practice their lesson plans and they explained that attending to teaching process as a teacher was supportive to identify students' original opinions about the topic. Furthermore, as a part of learning, feedback plays a significant role (Wertsch, 1985). In the present study, PSMTs perceived meetings and classroom discussions as a light to see their lesson planning paths clearly because they had a chance to share their teaching process with other preservice teachers and the instructor. It shows significance of given feedback in terms of teaching and learning process for teacher educators, preservice teachers, and students. Thus, meeting with a course instructor and classroom discussion with classmates could be integrated into teaching programs in order to provide PSMTs with the opportunity to notice different perspective of lesson planning and improve their lesson plans. From this point of view, PSMTs may have the opportunity to realize missing parts of their lesson plans and integrate given feedback into the lesson plans. In this way, PSMTs could support their learning process in terms of preparing a lesson plan and an efficient learning environment could be constructed to improve PSMTs. In order to apply lesson plans, University within School Model might be integrated into other universities. Therefore, PSMTs might gain experience more in

the field and PSMTs might share their experiences in order to show students' different thinking.

In addition, the findings in the present study revealed that preservice teachers can develop lesson plans via given feedback because the groups of PSMTs prepared more suitable lesson plans after the meeting with the course instructor. Therefore, teacher educators can make changes by means of teacher training programs which can be beneficial in improvement of lesson plans prepared by preservice teachers.

In this section, implications of the study were presented via the findings of previous studies and the present study. Recommendations for further research studies touched upon in the following section.

5.3 Recommendation for Further Research Studies

Preservice mathematics teachers studying in their first semester of first year at a foundation university in Turkey participated in the current study and how PSMTs integrate given feedback by the course instructor into lesson plans was examined. Moreover, PSMTs' evaluation was investigated about planning a lesson. The same study might be conducted with many different groups of participants such as preservice mathematics teachers in their second semester of first year at the same university. By comparing these two various groups of participants in the same context, the influence of Mathematics Teaching Courses on preparing an effective lesson plan can be investigated. On the other hand, the same study can be examined with preservice teachers in different fields because teacher education programs include lesson planning. Hence, differences and similarities among different departments in education in terms of lesson planning and its applications might be explored via influence of feedback given by course instructors and preservice teachers.

Findings revealed that given feedback by the course instructor mostly focused on selecting a suitable teaching and learning activity to apply it during teaching practice

and identifying possible inappropriate situations during teaching and learning process. The vast majority of PSMTs also explained that they had difficulty while trying to see the topic from the perspective of students. Therefore, similar to the previous study, they stated that consideration for students' possible thinking ways to approach questions made selection of teaching and learning activities hard (Sahin-Taskin, 2017). This insufficiency was seen as a result of lack of experience in teaching practice. PSMTs in the current study gain experience via internship program of University within School Model so they tutor students in PSMTs' third and fourth years at the university. Therefore, a longitudinal research might be applied in order to examine the impact of teaching practice courses and experiences on preparing an effective lesson plan.

In addition, the current study was conducted with seventeen freshmen preservice mathematics teachers at a foundation school in Turkey so this research is limited in terms of number of participants, experiences of participants, and region. From aspect of number of participants, collecting data from a bigger group of participants might make more trustworthy findings of the study. By applying a lesson plan, in-service teachers have opportunity of teaching and learning process in the class. They might develop their lesson plans by integrating parts in accordance with students' thinking ways since they can consider possible problems during applications of lesson plans in a real classroom environment. Therefore, in-service teachers might select appropriate activities related to the topic by considering possible students' thinking. As a further research, the study can be conducted with in-service teachers to examine how one-to-one teaching is related to teachers' integration into lesson plans. From perspective of region, the current study covered a limited part of Turkey. In order to explore the role of given feedback in lesson planning process, a further research might be extended with preservice teachers who are enrolled in teacher education programme at universities in different countries. It might show differences and similarities of lesson planning among countries by means of comparison of integration into lesson plans during meetings with the course instructor and classroom discussion with preservice teachers. It is strongly suggested to investigate

the same study in the scope of lesson planning via feedback given by the course instructor and classmates in various countries since it might extend perspective to lesson planning process and give information about preparation of lesson plans via feedback in other countries. Therefore, the findings might present a holistic picture of lesson planning process with the help of meetings with the course instructor and classroom discussions with classmates.

It was discussed limitations of the study in terms of approaches to PSMTs' integration into lesson plans via meetings with the instructor and classroom discussions with classmates. The present study examined PSMTs' integration from the view of feedback given by the course instructor and their classmates. Even though preservice teachers' lesson plans examined in some research (Sahin-Taskin, 2017; Taylan, 2018; Zingir Gulten, 2013; Kagan & Tippins, 1992), it is not obvious how preservice teachers integrate different parts into their lesson plans after their teaching experience with the students in a real classroom environment. Hence, as a further research, it might be extended with the investigation of preservice teachers' integration into their lesson plans by means of one-to-one teaching experience of preservice teachers with students. The findings of the study might show a holistic picture of complete process of lesson planning. Moreover, preservice teachers' evaluation about applications of their own lesson plans can be explored with the same participants.

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APPENDICES

A. PERMISSION FROM THE ETHICAL COMMITTEE AT METU

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER



ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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11 ARALIK 2018

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (IAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof.Dr. Mine Işıksal BOSTAN

Danışmanlığını yaptığınız Betül ÖZKAN'ın "Sosyal Etkileşim Yoluyla Matematik Öğretmen Adaylarının Ders Planlamalarındaki Değişimler Üzerine Bir Araştırma" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay 2018-EGT-190 protokol numarası ile araştırma yapması onaylanmıştır.

Saygılarımla bilgilerinize sunarım.


Prof. Dr. Tulin GENÇÖZ

Başkan


Prof. Dr. Ayhan SOL

Üye

Prof. Dr. Ayhan Gürbüz DEMİR

Üye


Prof. Dr. Yaşar KONDAKÇI (4.)

Üye


Ali Emre TURGUT

Üye


Doç. Dr. Emre SELÇUK

Üye


Doç. Dr. Üyesi Pınar KAYGAN

Üye

B. RUBRIC FOR EVALUATION THIRD DRAFT OF LESSON PLANS

Lesson Plan Preparation	1) Focus of the plan is parallel with MEB curriculum and what Classroom Teacher and University Professors suggested. (2 points). 2) Using at least 4 different sources in the plan especially Library Search is done and used (4 points). 3) Including middle school students' different thinking in the plan (use Literature in the field and/or your own thinking). There should be developmental progress: Questions should be from basic to complex (6 points). 4) There should be solutions to the problems. (2 points). 5) There should be enough directions to your classmates, e.g., how to introduce the topic and how to approach a problematic situation, what (teacher) questions to ask when teaching etc. (6 points). 6) Overall quality exceeds the expectations: It helps students think, question, and create new mathematics knowledge. (2 points). 7) Format should be consistent: 12 points, black font, title, date, page number etc. (2 points).	24 points
Student Handout	1) Student handouts should be parallel to the Lesson Plan (2 points). 2) The problems or activities should be engaging and good quality (creative, focused on critical thinking, advance the student etc.). There can be variety such as simple problems to practice as well as problems whose solution can take longer time. (3 points).	5 points

Flipped Video	1) Length of the video should be less than 8 minutes and it should be unlisted. (2 points). 2) The video is engaging, interesting and informing (You should not be just reading the Lesson Plan) (3 points).	5 points
Classroom Presentation and Discussion	1) Presentation is informing, engaging and good quality. (5 points). 2) Mathematical content should be correct and clear. (2 points). 3) Group's orientation is positive and open to the discussions. They have suggestions to make the content better and open to making necessary revisions. (3 points).	10 points
During and After Process: Revisions when necessary	1) Pre-service teacher is prompt, well organized and working collaboratively. Work etiquette. 2) When revisions are needed, it is done on time. There is constant communication between the student with the course instructor when necessary (email, cell phone, whatssup etc). 3) Materials are ready on time to be shared on Blackboard before the classroom discussion (usually previous Sunday 5:00pm) and before the visit to the school (Usually previous Friday 5:00pm).	6 points

C. THE TURKISH VERSION OF SURVEY QUESTIONS

- 1) Ders planı hazırlanmasına yönelik düşünceleriniz nelerdir?
- 2) Ders planı hazırlarken dikkat ettiğiniz nokta(lar) nelerdir? Bu nokta(lara) niye dikkat edilmesi gerektiğini düşünüyorsunuz?
- 3) Ders planınızı hazırlarken kullandığınız kaynaklar nelerdir? Bunlardan nasıl faydalandınız?
- 4) Ders planı hazırlarken kendinizi yeterli ve eksik gördüğünüz yönleriniz nelerdir? Eksik yönlerinizi nasıl tamamlayabileceğinizi düşünüyorsunuz?
- 5) Ders planı hazırlama sürecinde dersin asistanıyla ve dersi veren öğretim üyesiyle yaptığınız buluşmalar hakkında neler düşünüyorsunuz? Dersin asistanından ve dersi veren öğretim üyesinden aldığınız geri dönütler hakkında neler düşünüyorsunuz?
- 6) Ders içinde yaptığınız tartışmalar, sizce hazırlanılan ders planlarını nasıl etkiliyor? Sunumunuzdan sonra kendi hazırladığınız ders planında değişiklik yaptıysanız nasıl değişimler yaptınız? Örnek vererek açıklayınız.

D. THE TURKISH VERSION OF INTERVIEW QUESTIONS

2018 – Güz Dönemi

Ders Planlama Projesi Röportaj Soruları

Yönerge

Merhaba, nasılsınız?

Öncelikle röportajı kabul ettiğiniz için teşekkür ederim. Sizinle 15-20 dakikalık bir röportaj yapacağız. Dönem boyunca ders planlaması üzerine aldığınız ders kapsamında sorular soracağım. Bu görüşme kesinlikle notlarınızı etkilemeyecek. Sadece düşüncelerinizi sesli bir şekilde dile getirmenizi rica ediyorum.

Sorular

- 1) Derste hazırladığınız ders planlarının öncesinde ders planı hazırlama üzerine deneyiminiz var mıydı? Daha önceden ders planı hazırlamış mıydınız?
 - Varsa, ne zaman? Ne için hazırladınız?
- 2) Ders planınızı hazırlarken nasıl bir yol izlediniz?
 - İlk olarak ders planınızda belirledığınız şey neydi?
 - Daha sonraki adım neydi? (Kazanımları söylemesi beklenir. Eğer başka bir şey söylerse “Onun öncesinde kazanımları belirlediniz, değil mi?” diye sorulabilir)
 - Daha sonraki adım neydi? (Derse nasıl başlayacaklarını açıklamalarını bekliyoruz. Burada ilk ve son draftında giriş kısmı farklı olan gruplar vardır) İlk ders planınızda böyle bir giriş yapmayı planlarken son ders planınızda farklı bir giriş yapmayı neden düşündünüz?

- (Görüşmeleri ya da sınıfıçi tartışmaları sebep olarak söylerse) Giriş kısmını değiştirmenizi kim önermişti? Nasıl bir geri dönüt almıştınız? (İlk plandaki girişin hangi açılardan uygun olmadığı vs. hakkında bir geri dönüt olup olmadığı anlaşılmaya çalışılır) Peki, son plandaki girişe nasıl karar verdiniz?
- 3) (Ders planlarının tüm draftlarının çıktıları alınıp bu sorular onlar üzerinde sorulur)
- Ders planınızın son haline bunu eklemenizin/çıkarmanızın sebebi nedir? (Görüşmelerde ya da sınıfıçi tartışmada uygun olmadığının söylendiği gibi cevaplar bekleniyor) Dersin asistanıyla ve öğretim üyesiyle yaptığınız görüşmelerden dolayı mı yoksa sınıfıçi tartışmalardan dolayı mı bu değişikliği yaptınız? Nasıl bir geri dönüt almıştınız?
- 4) (Ders planı üzerindeki tüm değişiklikler ve aynı kalan önemli noktalar hakkında sorular sorulduktan sonra) Ders planınızın son hali sizi tatmin etti mi? Ders planınızın son halini yeterli görüyor musunuz?
- Ettiyse/yeterliyse, ders planınızdaki hangi kısımların güçlü olduğunu düşünüyorsunuz? (Giriş, aktivite, soru kısmı vs gibi cevaplar beklenir)
 - Etmediyse/yeterli değilse, ders planınızdaki hangi kısmın/kısımların değiştirilmesi gerektiğini düşünüyorsunuz? Neden?
- 5) Ders planı hazırlamadan önce kendinizi ders planı hazırlama konusunda yeterli hissediyor muydunuz?
- Ders planı hazırlamadan önce eksik olduğunuzu düşündüğünüz yönleriniz nelerdi?
 - Ders planı hazırladıktan sonra ders planı hazırlamak için kendinizi yeterli hissettiniz mi?

- Ders planı hazırlarken eksik olduğunuzu düşündüğünüz yönleriniz nelerdir?
- Bu eksikliğin kaynağının ne olduğunu düşünüyorsunuz?

6) Ders planı hazırlama sürecinde kimlerden yardım aldınız?

- Aldığınız bu geri dönütleri yararlı buluyor musunuz?
- Geri dönütler doğrultusunda nasıl bir değişim yaptınız?
- (Bu geri dönütleri göz ardı eden gruplar vardı) Görüşme sırasında burada değişiklik yapılması önerilmişti ama son ders planında bu değişikliği yapmamışsınız. Niye?
- Bu geri dönütlerin sizin için yararlı olduğunu düşünüyor musunuz?
- Bu görüşmeler ders planınızı nasıl etkiliyor? Örnek vererek açıklayınız.

7) Sınıf içi tartışmalar hakkında neler düşünüyorsunuz?

- Sınıf içindeki tartışmaların daha verimli ve yararlı olması için nasıl/ne tür konuların tartışılmasını beklersiniz? Önerileriniz nelerdir?
- Sınıf içindeki tartışmaların daha verimli ve yararlı olması için nasıl bir sınıf ortamı olmasını beklersiniz? Önerileriniz nelerdir?

8) Hazırladığınız ders planına uygun olarak öğrencilerle iletişime geçip ders işlemek sizi nasıl hissettiriyor?

- Ders planı hazırlamadan dersi aynı şekilde işleyebileceğinizi düşünüyor musunuz?
- Cevabınız ‘hayır’ sa, ders planı olmadan dersin işlenişinde olacağını düşündüğünüz farklılıklar nelerdir?