

## Teachers' Reflection and Level of Reflective Thinking on the Different Dimensions of their teaching practice

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### Abstract:


The present study deeply aims to reveal teachers' reflection and their reflective thinking levels on the different dimension of their teaching practice with regard to the dimension of learning objectives, content, learning-teaching process, and measurement and evaluation in the context of English courses. The study was designed as case study method. The study group was composed of 27 teachers selected based on the criterion sampling method. Results showed that the participant teachers had information about reflective thinking skills and they made some changes in the lesson plan because they thought that a lesson plan for the learning objectives ignoring students' prior knowledge was ineffective. Based on teachers' opinions, it was also determined that the content consisted of similar topics and was very intense and heavily based on vocabulary teaching. Results indicated that participant teachers reflected on teaching methods and techniques, activities and materials, student motivation, classroom atmosphere, and ensuring participation in the lesson. It was also revealed that the efficiency of measurement tools and the need to prepare measurement tools with regard to the learning objectives should be realized. Based on their reflective diaries, participant teachers also reflected at the technical, practical and critical levels and developed reflection-in-action, reflection-on-action, and reflection-for-action. Providing teachers with in-service training courses such as thinking skills, problem solving and decision making techniques, risk and crisis management that will contribute to overcoming their shortcoming and mistakes is thought to improve their reflective thinking skills.

**Keywords:** Reflective teaching, Reflective thinking, teacher, English course

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## INTRODUCTION

In today's society, people are expected to have acquired certain skills. These skills include problem solving, creative thinking, critical thinking, learning to learn, and reflective thinking. Undoubtedly, the most important of these skills is reflective thinking skill, which is one of the high-level thinking skills. Dewey (1933) defines reflective thinking as an effective, consistent and careful way of thinking. Ünver (2010) associates reflective thinking with problem solving and explains it as a thinking process for finding solutions by identifying positive and negative situations faced by a person in the education process.

Schön (1983) emphasized that reflection can be done in three different times in his study on the situations in which reflective thinking should be done. These are “reflection-in-action”, “reflection-on-action” and “reflection-for-action”.

Reflection-in-action is the process that includes the decisions we make at that moment while performing an action. Schön (1983) expressed it as thinking on foot during action. In other words, it is the ability to make decisions when faced with situations without thinking about what to do before. During reflection-in-action, we reveal the ability to tackle with the unexpected situations by using our repertoire of examples. In this case, an individual knows more than he/she can say, but does not express it with words, he/she only reveals it with actions. It usually requires the ability to make the right decisions when unexpected situations are encountered. It is difficult to carry out it with theoretical knowledge, it is more related to one's own skill. A lived example from the present study in which the teacher could make the right decision when unexpected situations happened can be given as follows: *“...I saw the children had an unexpected reaction to the Picture Strip Story and adjusted the lesson plan. Then, I used another activity which I think would be more appropriate for the students' level, which was really effective....”*.

Reflection-on-action is the process that requires stopping for a while after performing our actions and reflecting on what happened. It is to decide how it goes, what is good and what is bad, what needs to be changed. It is to change actions and practices by asking questions on actions and developing new ideas. A certain amount of time and effort should be spent to reflect on the action (Schön, 1983). A lived example about a participant teacher from the present study who reflected on his/her past experiences is as follows: *“To enable my students to predict the English equivalents of types of holiday correctly, Quiz Show technique along with visuals instead of “Matching” technique would be more effective so that students could participate effectively.”*

Reflection-for-action involves thinking about future actions with the purpose of developing or altering a practice. It also requires teachers to use examples, insights and knowledge so that they can look at problems from a different perspective. These features can be used as an important driving force for the development of professional knowledge in teacher training programs (Loughran, 2002). A lived example from the present study in

which the teacher thinks about future actions with the desire of developing or altering a practice is as follows: *"I saw the students become passive during my two lessons. Considering their reactions, I can change the method of teaching by thinking more about which communicative approach techniques I used."*

In addition to the descriptions made by Schön (1983) for the application of reflective thinking, there are classifications explaining the levels of reflective thinking. One of these is the leveling made by Van Manen (1977). Van Manen (1977) stated that reflective thinking can be done at three levels. These are technical reflection level, practical reflection and critical reflection.

Technical reflection is the basic level of reflection. The efficiency and effectiveness of the final results are emphasized, no criticism or changes are made about the results. The existing information is the most accurate information and the desired conclusions should be reached with this information. In other words, it is not considered to make a new configuration or change the information. The aim here is to use the existing information efficiently. Teachers at the level of technical reflection are generally individuals with little experience, who choose the lessons appropriate for them and aim to achieve the learning objectives set in the lessons (Van Manen, 1977). A lived example from the present study in which the teacher applied a technique and received positive feedback is as follows: *"The 'Spot the differences' technique was very good while describing the two different actions. It enabled students to comprehend the subject better visually..."*

The level of practical reflection allows efforts that can be done to achieve a particular goal. These efforts can be made based on assumptions. Individuals' learning can be facilitated by reflective thinking through applications. Reflection at the practical level can be defined as a reflection area where teacher candidates or teachers begin to benefit from their experiences in teaching skills, and try to think about the problems they encounter and find solutions (Ünver, 2010). In this area, a teacher candidate or teacher analyzes student behavior to understand whether the learning objectives were achieved, how they were achieved, and if not, why they were not achieved. They interpret observable student behaviors based on their individual perceptions (Wilson & Jan, 1993). A lived example from the present study in which the teacher describes a positive situation he/she encountered and also questions the reasons of this situation who reflects at the practical level by stating in his/her reflective journal is as follows: *"The learning objectives I determined were effective. I think that I made the lesson more effective and fun by attracting the attention of the students thanks to the materials and the activities I prepared. I managed to make the students achieve the learning objectives I determined. I was only a guide, and the students were more active"*.

Critical level of reflection has a broader explanation that includes levels of practical and technical reflection. What distinguishes critical reflection from them is that they are approached with a critical point of view during and after the actions. While making critical reflection, the individual uses not only the knowledge he / she has but also the infrastructure

that constitutes it (sociocultural environment, religion, language, family structure, tradition, customs, etc.). The level of critical reflection varies from person to person and it is very difficult to define its limits. For this reason, open mindedness is necessary. A lived example from the present study in which the teacher with moral, ethical and systematic perspective reflects at the critical level is as follows: *“I am a teacher and I understand that the task of a teacher is to enable his/her students to achieve learning objectives. I still have shortcomings and I have to go further in my teaching profession. I am trying to do my best. I strive to be a different teacher”*.

Reflective thinking is seen as a very important process in terms of teachers' being able to follow the developments in educational science, to implement what they have learned, and to follow their own developments in line with scientific knowledge and experiences. For this reason, reflective thinking should be taken into consideration in both theoretical and practical contexts, and appropriate climate should be provided to help teachers gain the ability to use reflective thinking (Altınok, 2002). Reflective thinking ensures professional development of teachers. It improves the ability to analyze and understand classroom events. It helps the teacher to create a learning environment that contributes to make predictions and think (Ünver, 2003).

When the characteristics of the reflective thinking teachers are examined, it is seen that the teacher's role in the constructivist approach is in parallel with the features expected from the teacher. In reflective teaching, the student is at the center and takes an effective and decision-making role. A teacher who adopts reflective thinking better evaluates his students, renews his/her methods and strategies, draws conclusions for himself/herself by following every practice, and is open to self-renewal (Rodgers, 2002). In congruent with this view, teachers who have reflective thinking skills aim to raise students who have an objective perspective, who are environmentally-conscious and aware of their responsibilities, and who have problem-solving skills (Ekiz, 2006). A reflective teacher is a development-oriented and an open-minded individual who focuses on lifelong learning, and who has the ability to plan and evaluate the teaching process effectively by self-assessment (Norton, 1994; Semerci, 2007; Ünver, 2003). In English Language Curriculum of Secondary Education in Turkey, reflective thinking teacher characteristics are also emphasized and teachers are expected to evaluate the student during the process, record what has been done in the teaching process, and review it by going back and checking.

When the relevant literature was reviewed, it is seen that the studies about reflective thinking skills and reflective thinking activities of teachers and teacher candidates were the focus of attention (Ayçiçek, Yanpar Yelken, & Yokuş, 2019; Aydın, & Çelik, 2013; Aydoğmuş, 2017; Aslan, 2009; Atalay & Karahan, 2016; Aydın & Çelik, 2013; Dilekli & Orakçı, 2019; Dolapçioğlu, 2007; Duban & Yanpar-Yelken, 2010; Ekiz, 2006; Elmalı, & Balkan Kıyıcı, 2018); Ersözlü, 2008; Evin-Gencil & Güzel-Candan, 2014; Gedik, Akhan & Kılıçoğlu, 2014; Gencer, 2008; Hasırcı & Sadık, 2011; Keskinçılıç, 2010; Kırnık, 2010; Kızılkaya & Aşkar, 2009; Kirk, 2000; Koç & Yıldız, 2009; Kozan, 2007; Köksal & Demirel, 2008; Langer, 2002; Lee;

2005; Ocak, Ocak & Saban, 2014; Oruç, 2000; Özbek, 2014; Semerci, 2007; Şahin 2009; Şahan, & Kalkay, 2011; Tok, 2008a, 2008b; Töman, 2015; Yorulmaz, 2006).

### *Reflective Teaching and English as a Foreign Language*

Over the past two decades, there has been a trend towards teaching reflective teaching skills in in-service and pre-service teacher education. Reflective teaching occurs by collecting detailed information about classroom situations such as working with individuals, creating classroom environments, planning and managing teaching, selection of content, and individual competence (Ogonor & Badmus, 2006).

Reflective teaching is a widely used concept recently, and it is frequently encountered in debates about professional and modern education. Reflective teaching which is a frequently used method especially in teaching English as a foreign language (EFL) and in raising English teachers, can be defined as thinking about what is happening in the teaching environment and making some differences in line with these thoughts during and after the teaching process (Mc. Collum, 2002). Pennington (1992) defines reflective teaching as “reflecting on experiences and reflection of these experiences”. Henderson (1996) also defines reflective teaching as an inquiry approach and creative problem-solving activities that emphasize giving importance to others and that is based on constructivism in teaching. In this context, reflective teaching can be considered to be extremely important in terms of both students' showing positive characteristics in the cognitive and affective domains and professional development of teachers.

When examined a number of studies in the literature, a study conducted on teachers in Pakistan by Ahmad, Said, Zeb, Rehman, Ahmad, and Khan (2013) examined how reflective teaching practices affect teachers' teaching and classroom skills and the researchers found a significant improvement and increase in the teaching skills of teachers who received reflective practice training. It was also found that the teachers made more original plans for their own lessons, brought effective solutions to classroom problems, and their interactions with their teachers, students and parents were of higher quality and function. In a study conducted by Choy and Oo (2012), the extent to which teachers performed reflective teaching and what they think about their own practices were examined. The results of the research revealed that teachers showed inadequacies in realizing the principles of reflective learning. In another study conducted by Mathew (2011), the role of reflective teaching in providing an effective classroom learning environment to improve English language skills was discussed. According to the findings of the study, it was found that reflective teaching practices contributed to a rich environment and resource for realizing English language skills, a purposeful learning-teaching process, a reflective and interactive teacher-student communication, and a significant increase in students' success as well as a significant contribution to the professional development of teachers which was also seen as an important finding in Aydoğmuş's (2017) study and Fakazlı and Kuru Gönen's (2017) study exploring EFL university instructors' perceptions on reflective

practices. In similar studies conducted by Minott (2011) and Nodoushan (2011) to determine the effects and results of the reflective teaching practices in teacher candidates, it was found out that reflective teaching helped the development of their own knowledge and awareness, their inquiry skills improved in addition to that reflective teaching practices developed their affective and professional skills such as controlling their own emotions, interacting positively with those around them, and empathy.

Given the advantages of reflective teaching practice for teacher professional development, reflective teaching practice can be seen as useful ideas, suggestions and a vital tool for teachers to deal with difficult situations. What is more to the point, with the help of reflective practice, teachers can increase their efficacy by apprehending their teaching practices more broadly (Rudd, 2007) in addition to that it aids to protect against superficial learning (Schnepfleitner & Ferreira 2021). In fact, it helps teachers to recognize their strengths and weaknesses, and ultimately contributes more strongly to students' equal learning (Rezaeyan & Nikoopour, 2013; Rudd, 2007). As a result, reflective practice in teacher professional development emerges to be an important tool in problem solving, as it presents a great opportunity to go back and come up with the best strategies to achieve the goals (Ferraro, 2000; Rudd, 2007). Therefore, as Fakazlı and Kuru Gönen (2017) emphasized, systematic practice opportunities provided for teachers can make a difference in helping teachers develop reflection ideas and participate in reflective practice on a regular basis, which further increases the importance of the present study.

It should also not be forgotten that the quality of the teachers who are the practitioners of the educational process plays a determining role on the quality of the teaching performed. (Pollard, 1997). It is a necessity to question the qualifications of teachers, who have an important role in the educational process, and to train them in accordance with the requirements of the age. It is extremely important for teachers to be aware of the fact that reflective thinking and reflective teaching are an integral element for professional development and that they are used at every stage of the teaching process, which increases the importance of the present study. For this reason, the present study deeply aimed to reveal teachers' reflection and their reflective thinking levels on the different dimension of their teaching practice in the context of secondary EFL courses. For this purpose, the answers were sought for the following sub-problems:

- 1) What do teachers understand from the concept of reflective thinking?
- 2) How do teachers use reflective thinking skills with regard to the dimension of learning objectives of secondary EFL courses?
- 3) How do teachers use reflective thinking skills with regard to the dimension of content of secondary EFL courses?
- 4) How do they use reflective thinking skills with regard to the dimension of learning and teaching process of secondary EFL courses?

5) How do they use reflective thinking skills with regard to the dimension of measurement and evaluation of secondary EFL courses?

## METHOD

In the present study, case study method was used. The case study method involves examining an event in depth rather than breadth (Wellington, 2000). This method focuses on the property and complexity of an event and allows different data collection techniques to be used together (Cohen & Manion, 1994; Stake, 1995). The reason for choosing the case study method in this study can be explained as an in-depth examination of development of the participant teachers with semi-structured interview form and reflective diaries.

### *Participants*

Criterion sampling, one of the purposeful sampling methods, was used in the sample selection of the study. In criterion sampling, the sample is formed in accordance with predetermined criteria or criteria (Yıldırım & Şimşek, 2013). Accordingly, the sample of the study consisted of 27 volunteer teachers working in three different secondary schools in a city in the Central Anatolia Region in the 2019-2020 academic year.

Table 1 presents the distribution of participants in regard to their characteristics.

Table 1

#### *Participant Demographics*

		N	%
<b>Gender</b>	Male	13	48
	Female	14	52
	Total	27	100
<b>Education</b>	Graduate	19	70
	Undergraduate	8	30
	Total	27	100
<b>Grades Taught</b>	5 <sup>th</sup> Grade	5	18
	6 <sup>th</sup> Grade	6	22
	7 <sup>th</sup> Grade	8	30
	8 <sup>th</sup> Grade	8	30
	Total	27	100
<b>Teaching Experience (Years)</b>	11-15 years	17	63
	16-20 years	10	37
	Total	27	100

As can be seen from Table 1, of the 27 teachers, 14 (52%) were female and 13 (48%) were male teachers. With regard to the level of education, there were 19 (70%) teachers with graduate degree and 8 (30%) with undergraduate degree. With regard to the teaching experience of the participants, there were 17 (63%) teachers between 11-15 years and 10 (37%) teachers between 16-20 years. As for grades taught, 5 (18%) teachers were teaching 6<sup>th</sup> grades, 6 (22%) teachers 5<sup>th</sup>, 8 (30%) teachers 7<sup>th</sup>, and 8(30%) teachers 8<sup>th</sup> grades. Participants' identities were kept secret and each teacher was indicated with a code such as T1, T2, T3.

### *Data Collection*

In this study, semi-structured interview form and reflective diaries were used as data collection tools. Before the questions of the semi-structured interview form were prepared, national and international literature on the research topic was reviewed. Following the design of the subject, the questions that were thought to be included in the form were presented to the examination of three faculty members, two of whom were in the field of curriculum and instruction, and one of whom was in the field of educational measurement and evaluation. The questions asked to teachers in the study are as follows:

1) What comes to your mind when you say the concept of reflective thinking?

2) What are your views on the learning objectives of your lesson? What kind of shortcomings do you think there are in terms of the learning objectives of your lesson? What do you do to overcome these shortcomings? In this context, what are your thoughts, feelings, assumptions, beliefs, values and attitudes?

3) What are your views on the content of your lesson? What kind of shortcomings do you think there are regarding the content of your lesson? What do you do to overcome these shortcomings? In this context, what are your thoughts, feelings, assumptions, beliefs, values and attitudes?

4) What are your views on the learning-teaching process of your lesson? What kind of shortcomings do you think there are in the learning-teaching process of your lesson? What do you do to overcome these shortcomings? In this context, what are your thoughts, feelings, assumptions, beliefs, values and attitudes?

5) What are your views on the measurement and evaluation dimension of your lesson? What kind of shortcomings do you think there are in the measurement and evaluation aspect of your course? What do you do to overcome these shortcomings? In this context, what are your thoughts, feelings, assumptions, beliefs, values and attitudes?

Research data were collected through face-to-face interviews with the participants. These interviews were conducted by the author of the study. An agreement was reached on the place and time of the meeting with each participant before interview. In addition, in the pre-interview, the participants were informed about the scope, context and aims of the research. Permission was requested from the participants to record the interviews, and it



was stated that if not allowed, the researcher would take notes during the interview. All participants gave permission for audio recording. In the present study, data collection tool and procedures were also examined for ethical concerns and approved by Gazi University Institutional Review Board for Research with Human Subjects (application no: 2019/09-30 - 21.10.2019). The author also tried to be sensitive about the ethical principles that should be followed in the qualitative studies suggested by Creswell (2007), and accordingly, it was stated that each participant was free to participate in the research before starting the interview, and they could end the interview whenever they wanted, and answer the questions as they wanted. The interviews were conducted in the schools where the teachers work, at determined hours. The interviews lasted between 30-50 minutes.

During the research process, participant teachers were also asked to write a reflective diary for 8 weeks in order to evaluate their teaching practices in their own lessons and to review their performance and processes at the end of the day. In order for teachers to reflect the teaching process better before starting the application, the steps to be followed by them while writing a diary were designed as suggested by Mitchell and Coltrinari (2001). They are as follows;

<b>Section</b>	<b>Explanation</b>
Definition	What happened?
Awareness	What were your thoughts, feelings, assumptions, beliefs, values and attitudes?
Analysis	What were the thoughts and reasons behind your practice and actions?
Evaluation	What were your good sides? What were your bad sides?
Reconstruction	What changes can be made? What can be planned for future teaching practices?

In the study, both semi-structured interview and keeping a reflective diary were carried out simultaneously in the research process in order to reveal participant teachers' reflection and their reflective thinking levels on the different dimension of their teaching practice deeply.

### *Data Analysis*

In this study, descriptive analysis technique was used for the data analysis of semi-structured interviews. Descriptive analysis technique is a type of analysis in which the sub-problems of the research are determined in advance and the themes are derived accordingly (Hatch, 2002; Yıldırım & Şimşek, 2013). Within this context, four stages of descriptive analysis were followed. In the first step, a framework for descriptive analysis was created. In other words, the themes or dimensions under which the data to be collected, organized and presented were determined in advance. In the second stage, the data were processed according to the thematic framework prepared. In other words, the data were read and organized according to the previously prepared framework. At this stage, some data were

excluded from the analysis as they were completely unrelated to the thematic framework prepared. In addition, direct quotations to be used in the reporting phase were also determined at this stage. The third stage was the process of defining the findings. At this stage, the data organized according to the thematic framework were defined in an easily understandable and readable language and supported by direct quotations. The fourth stage was the interpretation of the findings, and the explanation, association and interpretation of the identified findings were realized.

Reflective diaries were also used to determine at what level and what kind of reflection teachers made. A total of 143 unstructured reflective diaries written by 27 teachers were analyzed using the content analysis technique. The diaries were read several times by the researcher himself and an expert in the field of measurement and evaluation, and whose research and teaching interests are reflective thinking skills. The written and transcribed documents were examined based on the framework of Griffiths and Tann (1992) in order to describe Schön's different types of reflective thinking and the data were also analyzed with regard to the "Rubric of Reflective Thinking Levels" suggested by Taggart and Wilson (1998) to describe Van Manen's three levels named technical, practical, and critical rationality in the study.

Within this context, teachers' remarks were classified as reflection-in-action, reflection-on-action, and reflection-for-action based on overwhelmingly Griffiths and Tann's (1992) framework to describe Schön's different types of reflective thinking. When some of the remarks had more than one reflective level, the higher level of reflective thinking was tagged for the remark. They are as follows along with examples from the present study.

1. Rapid reflection (instant and mechanized reflection-in-action) 2. Repair (contemplative reflection-in-action)

For example, in the present study, a participant teacher with a reflection to be called "thinking on his/her feet" stated that he/she overcame a negative situation by expressing his/her opinion as follows:

*"I use a text that was not very relevant to real life in the unit and the questions about the text challenged the students. I thought I wish I had never made them carry out the activities related to this text. But then, I used a reading text which I think was related to this unit, and appropriate for the students' level and would appeal to the students in real life. As a result, this content I prepared made the students feel very enjoyable and made them easy to learn."*

2. Review (less formal reflection-on-action at a specific time), 4. Research (more structured reflection-on-action over the course of time)

For example, in the present study, based on his/her personal perceptions a participant teacher made some explanations about his/her negative experiences and alternative solutions for them by pointing out:

*"I don't think the technique I used today was effective. By applying the "Picture Strip" technique, I could have helped them understand the storyline better."*

For reflection-for-action that entails viewing problems from a different perspective, a teacher's statement below with his/her desire of developing or altering a practice for future actions can be given as an example:

*"I observed students today during my lesson. Based on their reactions, I can change the method of teaching by thinking more about which communicative approach techniques I used."*

With regard to Van Manen's three levels named technical, practical, and critical rationality, "Rubric of Reflective Thinking Levels" suggested by Taggart and Wilson (1998) was used. Any remarks based on teaching action or theme was regarded as reflective at one of the levels of reflective thinking. Each comprehensible part or remark was coded by means of topical and level coding schemes. The remarks were formed mainly by the level coding scheme. Therefore, the higher level of reflective thinking was tagged for this remark when some of the remarks had more than one reflective level. The results of level of reflective thinking along with examples from the present study are shown in Table 2.

Table 2

*Examples for the Participant Teachers' Reflective Thinking Levels*

Level of Reflective Thinking	Theme	Reflective Entry
<b>Technical level</b> "Focus on behaviors, content, and skills from past experiences or theory derived from readings or course works, without looking for alternatives"	Measurement and Evaluation	"Although self-assessment and peer-assessment methods I used were consistent with learning objectives, many students did not take active part in them. Some of the students remained passive."
<b>Practical level</b> "Assess implications and consequences of actions and beliefs"	Learning objectives	"The learning objectives I determined were effective. I think that I made the lesson more effective and fun by attracting the attention of the students thanks to the materials and the activities I prepared. I managed to make the students achieve the learning objectives I determined. I was only a guide, and the students were more active."
<b>Critical level</b> "Systematically question practices"	Learning and Teaching process	"I designed teaching techniques such as "Information Gap", "Picture Strip Story", "Timetable" and "Scrambled Sentences". I understood from my teaching practices that I had to do more teamwork to make the students more active. I know I had some shortcomings in applying these techniques. I believe that I will be an even more useful teacher by coping with my shortcomings."

### *Validity and Reliability*

In qualitative research, a number of strategies are used to ensure internal validity (credibility), external validity (transferability), internal reliability (consistency), and external

reliability (verifiability) (Lincoln & Guba, 1985). In this context, participant confirmation was used to ensure internal validity in the current study. Accordingly, after the interview with each participant was written on paper, it was shared with the relevant participant and the participant was asked to review their opinions and complete any shortcomings. The same process was repeated for each interviewer. Some participants were sent the text of the interview via e-mail, while others were delivered by hand. A detailed description strategy was used to ensure the transferability of the research. Accordingly, each stage of the research was presented to the readers in all details and all processes were mentioned as clearly as possible. In order to ensure the consistency of the research, the strategy of consensus among three coders specialized in qualitative research was used. Cresswell (2014) points out that integrity between coders is one of the important processes that ensure reliability in qualitative research. The reliability formula [Reliability = Consensus / (Consensus + Disagreement)] suggested by Miles and Huberman (1994) was used, and it was determined that the consistency between the coders was 85.8% as a result of the computation.

Finally, an expert review strategy was used to ensure the verification of the study. In this process, the current research was shared with another faculty member specialized in qualitative research, and the expert was asked to evaluate the research as a whole in terms of its conceptual dimension, objectives, problem, method, pattern, data collection tool, analysis and reporting of the data, and to indicate the shortcomings, if any. The expert suggested that the statements in the reflective diaries should be categorised with regard to Schön's different types of reflective thinking (reflection-in-action, reflection-on-action, and reflection-for-action) and Van Manen's three levels named technical, practical and critical rationality. The study was finalized by considering the recommendations made by the expert review.

## FINDINGS

In this part, the responses of the participant teachers to the questions about reflective thinking skills and the findings from the reflective diaries were examined. It was seen that both of them supported each other.

Data obtained from interviews with participant teachers were collected under five themes and they were as follows:

- 1) Opinions of Teachers on Reflective Thinking Concept.
- 2) Reflective Thinking Skills of Teachers Regarding Learning objectives of Course.
- 3) Reflective Thinking Skills of Teachers Regarding Course Content.
- 4) Reflective Thinking Skills of Teachers Regarding the Learning and Teaching Process of Course.

5) Reflective Thinking Skills of Teachers Regarding the Measurement and Evaluation of Course.

### *Opinions of Teachers on Reflective Thinking Concept*

Of the 27 participants, 13 of them (48%) saw reflective thinking as the transfer of knowledge or thought to students and teaching practice. They also emphasized student-centeredness and empathy in reflective thinking with the following sentences:

*"Reflective thinking can be the transfer of own knowledge to students and teaching practice. Individuals with this are empathetic, understanding, self-confident." (T3)*

*"Reflective thinking is transferring the learned knowledge to students, receiving feedback, being open to criticism, being able to criticize oneself, and valuing thoughts." (T7)*

Seven of the teachers defined reflective thinking as making use of past experiences and learning from mistakes.

*"Reflective thinking is learning from their experiences. These individuals act more carefully and consciously because of the situations they have experienced in the past. These individuals are creative, predictive, and rational conscious individuals."(T8)*

*"They are individuals who act in a planned program, evaluate the result of their thoughts and realize their responsibilities, and say "I made a mistake" when he/she made a mistake." (T3)*

Four of the teachers defined reflective thinking as self-criticism, being a guide and empathizing.

*"Reflective thinking requires self-criticism, evaluating what they have been done and making conclusions from them."(T11)*

*"Reflective thinking is to approach problems in a critical and questioning way and to have logical (deductive, inductive) thinking skills."(T23)*

*"I know what reflective thinking is about, it is criticizing one's actions and changing his/her behavior." (T27)*

Three of the teachers stated that they had never heard of the concept of reflective thinking before. Teachers' views on this are as follows:

*"Reflective thinking was the subject of our "New Directions in Education" course while I was doing my master's degree, but now I don't remember much. I have also come across the concept of reflective thinking several times while working for teaching qualification exam." (T9)*

When the views of the above teachers were examined closely, it is seen that out of the 27 participants, 20 of them (74%) could directly define the concept of reflective thinking. However, from the data obtained from the interviews, it is understood that the teachers who participated in the study, and who could not define the concept of reflective thinking, used

reflective thinking from time to time when they gave information about their classroom practices. The situation can be summarized with the sentences of some participant teachers about classroom practices in the context of the English language curriculum:

*T18: "The learning objectives were not very suitable for the developmental characteristics of the students. I think there should have been more achievable learning objectives. It is not right to expect so much from children of this age. Children both cannot reach these learning objectives academically and their desire to learn decreases. Especially since I thought that reading and writing learning objectives should be both real-life related and achievable, I created real-life learning objectives by considering the levels of children."*

*T24: "Units are actually interesting to students. Colorful books and pictures etc.. They like them. But I'm having a problem. I find some reading texts unsuitable for the students' level and their prior knowledge is insufficient. Suddenly there are difficult texts in the books and some difficult questions about them. In this case, students' motivation deteriorates and their self-confidence decreases. I feel there is a perception among students that learning English is very difficult. In order to overcome these problems, I create content based on real-life which is appropriate for students' levels. These contents I prepared are more liked by the students and they learn more easily. "*

According to the teachers' views above, the participant teachers stated that the incompatibility of learning objectives and content determined in the curriculum with the development levels of the students negatively affected the cognitive and affective behaviors of the students. In order to overcome these negative situations, it is seen that participant teachers think reflectively by creating learning objectives and content related to students' development levels and real life. The opinions of the participant teachers are supported by Schön (1983) who suggests that professional lived experience results in one's capacity to think reflectively by calling it a "repertoire of knowledge", "hidden information" or "thinking on your feet.". Schön(1983) also argues that professional practice relies on tacit knowing-in-action instead of received knowledge. It should not forgotten that one doesn't have to define the concept in order to use reflective thinking skills because Schön (1983) underlines that "all helping professionals" (ministers, social workers, nurses, teachers, etc.) develop the capacity of reflective thinking over time which serves them well, when there are unexpected human events one must respond to.

### *Reflective Thinking Skills of Teachers Regarding Course Learning objectives*

Considering the theme of "Reflective Thinking Skills of Teachers Regarding Course Learning objectives", it was reflected during the interview that ,of the 27 participants, 19 of them (70%) made a change in the lesson plan due to the lack of students' prior knowledge, and they also stated that a lesson plan for learning objectives of the course could not be applied and the learning objectives could not be achieved before the prior knowledge was completed. Teachers' opinions on this point are given below:

*“Due to the lack of students’ prior knowledge, I am making a change in the lesson plan. I think that a lesson plan for course learning objectives cannot be implemented and the learning objectives cannot be achieved unless students’ prior knowledge is completed.” (T11)*

*“The learning objectives are really difficult to reach, so I start my lesson by completing the lack of prior knowledge of the students in every lesson.” (T18)*

When the reflective thinking skills of some teachers regarding the learning objectives were examined, they stated that the number of learning objectives was high and that not all of the learning objectives were necessary. In this context, it is seen that some of the teachers emphasized the need to include learning objectives that cover different functions of the language and that can encourage language learning.

*“It is not possible for me to reach all of the learning objectives. Because the learning objectives of the lesson have to find direction in various ways. In addition, there are so many learning objectives that it is very difficult for students to reach all of them. I only focus on critical learning objectives. Time is a big problem for the other learning objectives.” (T22)*

*“Since I think that some of the learning objectives are well above the development levels of the students, I try to adapt the learning objectives of the course to the levels of the students as much as possible. It is really difficult for students to internalize some of the learning objectives.” (T25)*

*“... The learning objectives should be simpler. I give more weight to learning objectives that include the daily language correctly and make learning a language more enjoyable. I skip some learning objectives because I think they are unnecessary. I make adaptations on learning objectives that need to be simplified.” (T8)*

One of the teachers, on the other hand, makes self-criticism and questions himself/herself about how to eliminate the negativity by stating:

*“I am disappointed when I see that not all learning objectives happen. However, I make some changes in my teaching so that my students can gain these learning objectives better.” (T19)*

Reflective diaries were used to determine at what level and what kind of reflection teachers made. T1 stated in his/her reflective journal by reflecting at the technical level and developing reflection-on-action as follows;

*“I believe that the learning objectives I set within the framework of “Biographies” unit were effective. During my teaching practice, I saw all the students taking active part in the activities.”*

In the context of technical reflection, T1 simply reflected the reasons for the ineffectiveness of the learning objectives without elaborating and developing original comments. In the context of reflection-on-action, T1 reflected on his/her past teaching experience and gave a positive feedback about the learning objectives of the course that he/she determined when the course was over.

T7 reflected at the practical level and developed reflection-on-action by drawing attention to the relationship between learning outcomes and student behavior. He/She states;

*“The learning objectives I determined were effective. I think that I made the lesson more effective and fun by attracting the attention of the students thanks to the materials and the activities I prepared. I managed to make the students achieve the learning objectives I determined. I was only a guide, and the students were more active.”*

Based on practical reflection and reflection-on-action, T7 analyzed the dimension of learning objectives of the course and evaluated the results and effects of his/her actions and beliefs. T17 who reflected at the critical level and developed reflection-for-action expressed;

*“I am a teacher and I understand that the task of a teacher is to enable his/her students to achieve learning objectives. My aim was to ensure that students reach the learning objective of creating a story based on visuals in today’s lesson. There was much less active participation in the course than I expected which caused me to have a guilty conscience. The fact that there were not many students who did not participate shows that I still have shortcomings and that I have to go further in my teaching profession. I am trying to do my best. Next week, I will design an activity that students can realize within the framework of collaborative learning and do compensatory work for the learning objective that students cannot achieve in the desired way. I strive to be a different teacher ”*

In the context of critical reflection and reflection-for-action, T17 systematically questioned himself/herself regarding the learning objectives of the teaching process, developed original ideas about what he/she can do differently in the future and examined the issues related to the practices in a moral, ethical and systematic perspective.

T13 evaluated the learning objectives of his/her teaching process in terms of a moral, ethical and systemic perspective and developed original ideas about the relationship between the learning objectives of the teaching process and different variables such as teaching materials and different methods and techniques, which showed that he/she achieved critical reflection. In the context of reflection-for-action, he/she critically reflected on his/her teaching experiences, what he would be able to do differently in his/her future practices and what kind of tools and materials he would use differently with the following sentences:

*“In today’s lesson, my aim was to enable students to achieve the learning objective about the ability to make comparisons between the two countries. I do not think I fully achieved my goal. Nevertheless, the interest and participation of the students in the course was effective. When I noticed that some students felt hesitant about not taking active part in the course, I tried to get them to focus their attention on the course by asking them questions. Because as the participation increases, the interest in the course increases. In order to make a lesson most efficient, we must make use of important elements such as different methods and techniques, authentic materials. I will consider my today’s*



*teaching experience in my future lessons. In my opinion, gaining experience in teaching profession is of great importance. "*

### **Reflective Thinking Skills of Teachers Regarding Course Content**

When looked at the theme of "Reflective Thinking Skills of Teachers Regarding Course Content", of the 27 participants, 15 of them (56%) stated that the content consisted of similar topics and was very intense and at the same time it was based on vocabulary teaching. In this context, teachers stated that they prepared content for the learning objectives in which different structures took place by considering the student levels for some learning objectives. Some of teachers remarked:

*"I think the topics and the content are intense, so I skip similar content as much as possible and put critical content to the forefront and even create content for some learning objectives myself." (T3)*

*"I think it is important that the content always takes into account the well-being of the student and the best interests of the child. I think this is sometimes overlooked in programs. In this context, it is important to ensure that content arrangements are in line with students' future plans or expectations. I am trying to prepare content for some learning objectives by taking into account student levels. (T6)*

*"I find that the content is focused on vocabulary, making it difficult for students to remember what they learned. Although I think that students' learning vocabulary is positive, I sometimes prepare content that includes different daily language structures." (T21)*

One of the teachers stated that spelling and grammar rules were ignored in the content and he/she made some arrangements regarding this situation as follows:

*"It is a big problem that grammar rules are not given enough attention in the content. The fact that there are problems such as grammar, spelling mistakes and expression mistakes in the text makes the comprehension of the texts difficult. That's why I try to find mistakes and correct them as much as possible before lesson, which is a waste of time, unfortunately. "(T16)*

When looked at the reflective diaries to determine what level and what kind of reflection teachers realized, T3 who reflected at the technical level and developed reflection-on-action about the sequence of content expressed:

*"I could not make the sequence of content properly. First of all, I should have started my lesson with the content of "The Internet". Then I could go on with "On the Phone."*

T8 developed reflection-in-action by stating that he/she encountered a negative situation during the learning and teaching process and that he/she with a reflection that could be called "thinking on his/her feet" actually overcame the situation. He/She also reflected at the practical level by emphasizing that the level of the students should be taken into consideration when choosing the content and that it should be connected with real life. T8 expressed:

*“The unit named “Appearance and Personality” was actually interesting. Initially, the visuals and making sentences about visuals made the students feel enjoyable. However, a text that was not very relevant to real life in the unit and the questions about the text challenged the students. I saw that students’ motivation deteriorated and their self-confidence decreased. I thought I wish I had never made them carry out the activities related to this text. But then, I used a reading text which I think was related to this unit, and appropriate for the students’ level and would appeal to the students in real life. The text was also about the physical and personality characteristics of celebrities. This content I prepared made the students feel very enjoyable and made them easy to learn.”*

As regards critical reflection, it was found that no participants achieved this level with regard to the dimension of content.

### ***Reflective Thinking Skills of Teachers Regarding the Learning and Teaching process of Course***

Looked at the theme of "Reflective Thinking Skills of Teachers Regarding the Learning and Teaching Process of the course", it is seen that all of the 27 participants (100%) had reflective thinking skills. Participant teachers stated that attracting students' attention made the lesson more enjoyable and that visual and concrete materials motivated them and increased their participation in the lesson and the permanence of the learning. Some of the teachers with reflective thinking skills stated:

*“I think that the activities are not enough and there are activities that we could not do due to lack of materials and opportunities. To compensate for this, I give them as homework. In addition, I try to make up our shortcomings by giving research assignments and finding slides on the subject on the internet. I try to complete the topic I think is missing by repeating at the beginning of the next lesson.”* (T1)

*“I use slides which are appropriate for the topic in order to make the lesson more enjoyable, to get the attention of the students. The images on the slide attract more attention of the students, they are motivated and participate better in the lesson. They listen to the lesson and actively participate in the lesson.”* (T12)

*“Concrete material attracts more attention of students and becomes permanent in their minds. This also makes the lesson more enjoyable. For this reason, I try to bring concrete material in almost every lesson.”* (T19)

*“Before the lesson, I look at the activities I have done in that lesson in the previous years and the subject I will teach in that lesson from at least three or four references. This is how I update my knowledge. I try to understand the questions that students may think about newly added topics beforehand and to make the learning-teaching process effective by preparing materials that facilitate understanding of the topics.”* (T23)

*"Since there are not more activities, I prepare activities that will develop critical thinking, make them easier to understand, and not make students get bored. I also prepare activities with lots of exercises that they can use when they study on their own." (T21)*

When the reflective diaries were examined, T17 reflected at the technical level and developed reflection-on-action about teaching techniques by explaining:

*"I don't think the technique I used today was effective. By applying the "Picture Strip" technique, I could help them understand the storyline better. "*

Teachers who reflected at the practical level and developed reflection-on-action made comments based on their personal perceptions about not only mentioning whether the techniques they used were effective or not, but how they were effective if they were effective, and why they were not.

T20 who reflected at the practical level and developed reflection-on-action stated:

*"To enable my students to predict the English equivalents of foods correctly, "Quiz Show" technique along with visuals instead of "Information Gap" technique would be more effective so that students could participate effectively. "*

T9 who reflected at the critical level and developed reflection-for-action made ethical and systemic investigations about teaching methods, made progress in self-understanding and self-actualization, and revealed original and educational generalizations.

*"I designed teaching techniques such as "Information Gap", "Picture Strip Story", "Timetable" and "Scrambled Sentences". I understood from my teaching practices that I had to do more teamwork to make the students more active. I know I had some shortcomings in applying these techniques. I believe that I will be an even more useful teacher by coping with my shortcomings. The fact that the techniques I used along with the materials I prepared this week, that is, collaborative teamwork and student-centered methods and techniques contributed to the active participation of students, as well as the ability of students to use the language in functional and communicative terms really satisfies me on behalf of my teaching profession. "*

### **Reflective Thinking Skills of Teachers Regarding the Measurement and Evaluation of Course**

Looking at the theme of "Reflective Thinking Skills of Teachers Regarding the Measurement and Evaluation of Course", it is seen that ,of the 27 participants, 18 of them (67%) question the efficiency of measurement tool by remarking:

*"I think some measurement tools are not suitable for the learning objectives. Therefore, I try to determine the measurement tools according to the learning objectives by preparing a table of specifications." (T11)*

*“As for measurement and evaluation, I think there are no sources except the course repetitions at the end of a few units. Therefore, I give students tests for learning objectives. I do exams for listening and speaking.” (T13)*

*“There are learning objectives that should be gained to students in the curriculum. The feedback I received from the students is the best tool to show me how much I teach. After exam, I analyze exams. This analysis is done for each question separately. From here, I find the opportunity to understand which subject is understood by looking at the frequency of each question. I definitely re-lecture topics that are not well understood.” (T23)*

One of the teachers, on the other hand, questions himself by criticizing the contradictory situation he experienced in terms of measurement and evaluation by stating:

*“Actually, I am not very satisfied with this assessment and evaluation. You evaluate the students as a whole, but unfortunately this is not the case with our exam system. This situation creates a contradiction. We direct the child to learn by living through new programs, but that is not valid for central exam. Therefore, I prepare the students for the real world by taking the reality of the central exam into consideration.” (T24)*

When the reflective diaries were examined, T27 reflected at the technical level and developed reflection-on-action by explaining:

*“Although self-assessment and peer-assessment methods I used were consistent with learning objectives, many students did not take active part in them. Some of the students remained passive. I had a bad experience about duration.”*

In the context of technical reflection, T27 did not elaborate and develop original comments by simply stating the reasons why the students did not have too much active participation although assessment methods were consistent with learning objectives. T27 also made a negative evaluation by going back his/her evaluation experiences, which was the evidence of the fact that he/she developed reflection-on-action.

Participant teachers, who reflected at the practical level and developed reflection-on-action, did not only describe the problems they experienced during the evaluation process but also stated the reasons for the problems experienced and what should be done to solve the problems.

T23 who reflected at the practical level and developed reflection-on-action made some explanations about his/her negative experiences and alternative solutions for them.

*“The lack of student participation in the evaluation process made me unhappy. Nobody except the same students all the time wanted to attend the class. I had to choose myself the students to make them answer the questions. I could have used alternative assessment methods such as “Story-Telling and “Reporting Tasks”, “Oral Questionnaire” and “Picture-cued Tasks” that would make students*

more active. In addition, I could not perform an evaluation process as I wanted because of time anxiety."

T9 who reflected at the critical level and developed reflection-for-action made original inferences about the assessment methods as follows:

*"I designed the evaluation techniques such as question and answer, filling in the gap, and matching. In my teaching practice, I saw that only students who were willing and knew the answer took active part in the course. In order for the assessment techniques to be effective, heterogeneous collaborative teams should be formed, in which students who attend and do not attend the course will be together. Then, the alternative assessment materials such as "Story-Telling", "Reporting Tasks" and "Picture-cued Tasks" should be given to these heterogeneous teams based on individual assessment and team assessment. I am going to make use of these assessment materials in my next lesson. Only answering the questions asked by the teacher does not mean that the teacher made an effective evaluation. The evaluation should be made with the active participation of the students by making them enjoyable rather than making them feel anxious. "*

It can be inferred that T9 who reflected at the critical level and developed reflection-for-action systematically questioned his/her teaching experiences about the evaluation of the teaching process and developed original ideas about what he/she could do differently in the future.

## DISCUSSION AND CONCLUSION

The present study explored teachers' reflection and their reflective thinking levels on the different dimensions of their teaching practice with regard to the dimension of learning objectives, content, learning-teaching process, and measurement and evaluation in the context of English course.

Based on the findings of the first sub-problem of the study, it was revealed that most of the participant teachers had information about reflective thinking. Considering the professional seniority of the teachers participating in the study, it is seen that there were no participant teachers for less than 10 years. Based on this, it can be said that professional experience is an important variable on teachers' reflective thinking. This finding of the study is supported by similar studies. When the literature was examined, it is seen that the relationship between reflective thinking and experience was emphasized by many researchers (Lee, 2005; Rodgers, 2002). In fact, as a result of the research conducted by Allen and Casbergue (1997), it was observed that reflection took place in the long term. Another finding of their research was that experienced teachers' remembering skills were fluent, stable, precise and consistent compared to the inexperienced and less experienced teachers. Yiğit Kır (2014), on the other hand, found that the participants who had the most knowledge about reflective thinking in her research, were the ones who just graduated from university. Individuals who had knowledge about reflective thinking stated that they learned this information during their higher education or on their own curiosity. Ocak, Ocak and Saban

(2014) and Dolapçioğlu (2007) concluded in their research that there was no relationship between professional seniority and reflective thinking.

In the present study, it was determined that participant teachers developed reflection-in-action (relatively few), reflection-on-action, and reflection-for-action. Congruent with the findings of the present study, Moallem (1997) examined the reflection behaviors of a science teacher in her study and found that reflective thinking emerged to be one of the basic components of the teacher's thinking process, and that the teacher developed reflection-in-action, reflection-on-action, and reflection-for-action.

When the reflective thinking skills of the teachers regarding learning objectives of course were examined, the teachers stated that they made a change in the lesson plan because they thought that a lesson plan for the learning objectives could not be applied unless the students' prior knowledge was completed. This finding of the study is similar to Koç and Yıldız's (2009) study titled "Reflectors of Teaching Practice: Diaries" which determined that the teacher candidates had problems in the planning dimensions of the teaching practice based on their diaries and they made reflections on course learning objectives. Another finding of the present study revealed that the number of learning objectives was high and some learning objectives were difficult to reach. In this context, it is seen that some of the teachers emphasized the need to include learning objectives that cover different functions of the language and that can encourage language learning. Considering the views of the participant teachers in their reflective diaries, it was determined that the depth of their explanations varied from technical level to critical level and they focused on the relations of the learning objectives with the subject, material, method and techniques. These findings of the study overlap with the findings of the study conducted by Töman (2015) and Gencer (2008). In Töman's (2015) study, teacher candidates used superficial expressions only to describe what they did while explaining their teaching experiences and they used interpretative expressions on the relationships of learning objectives with different variables. On the other hand, in the context of reflective thinking at the practical level, it was observed that they questioned the relationships of the learning objectives with different variables in a systematic way. With regard to critical reflection, they used questioning expressions in a moral, ethical and systematic perspective. These findings of the research in the context of reflection at a critical level is supported by Valli (1990) who informs that effective responsible teaching is based on taking moral responsibility and not on having technical skills and Burgess (1999) underlines that teachers with principles of moral subjects have reflective teacher characteristics.

When reflective thinking skills of participant teachers regarding course content are examined, they stated that the content consisted of similar topics and was very intense and at the same time it was heavily based on vocabulary teaching. In addition, teachers stated that they prepared content for the learning objectives in which different daily language structures were included by taking into account the student levels, and that spelling rules

were underrated in the content and they made some arrangements on this point. This finding of the study is similar to the result of the study of Köksal and Demirel (2008) and Özbek (2014) in which pre-service teachers determined some contents based on learning objectives, and took into account student characteristics while choosing and organizing the content. The fact that the participants made the content selection and arrangement by taking into account course learning objectives, the characteristics of the students and also the development levels of the students is similar to the findings of this study. Considering the views of the participant teachers in their reflective diaries, it was found out that participant teachers generally focused on the relationship of the sequence of content with teaching methods, teaching materials, subject content and student behavior in order to determine the sequence of content. Their explanations in their reflective diaries were of reflection in the technical level based on descriptive expressions, of reflection in the practical level based on detailed comments. This finding of the research is supported by the studies conducted by Töman (2015) and Gencer (2008).

When reflective thinking skills of teachers regarding the learning-teaching of course were examined, it was revealed that they reflected on teaching methods and techniques, activities and materials, student motivation, classroom atmosphere, ensuring participation in the lesson, Similar to these findings of the study, it was determined in Özbek (2014) and Köksal and Demirel's (2008) studies in which pre-service teachers prepared interesting and diverse activities, and while reflecting, they emphasized teaching in order to achieve the determined learning objectives, especially taking into account previous teaching practices. Erginel (2006), in her research titled "Developing reflective teachers: A study on perception and improvement of reflection in pre-service teacher education", determined that pre-service teachers focused on subjects such as teaching methods and student motivation while thinking reflectively in the application process which is parallel to the results of the present study. Based on the opinions of the participant teachers in their reflective diaries, it was revealed that the participant teachers generally associated the teaching approaches, methods, techniques and materials they used in their course with student behavior, teaching skills, the duration of the course and the learning objectives of the course. Similar to these findings of the study, in the studies conducted by Töman (2015) and Gencer (2008), as the number of teaching practices increased, teacher candidates made more conscious, consistent and effective comments and reflected at technical, practical and critical levels, respectively.

When reflective thinking skills of teachers regarding the measurement and evaluation of course were examined, it was underlined that the efficiency of measurement tools and the need to prepare measurement tools according to the learning objectives should be realized. In fact, Özbek (2014) and Ünver (2001) emphasized that conducting measurement and assessment with regard to reflective thinking provides a reorganization in education, which can be thought to support the results of the present study. Considering the views of the participant teachers in their reflective diaries, it was determined that the participant teachers generally reflected at technical, practical and critical levels in which they associated

the assessment methods of the course with the learning objectives, duration, student behavior, materials, alternative assessment methods made individually and as a group. Similar to these findings of the study, in the studies conducted by Töman (2015), as the reflective applications increased, teacher candidates did not see their assessment practices as sufficient and produced alternatives. In the final stages of reflective practices, they made original inferences and presented educational generalizations. As a result, the development of reflective thinking skills contributed to their professional development.

### *Recommendations*

The study is simply based on a relatively small number of participants, and the findings cannot be generalised. This can be acknowledged as a limitation of the study. Therefore, more studies including a large number of participants need to be carried out. It is thought that providing teachers with in-service training courses such as thinking skills, problem solving and decision making techniques, risk and crisis management that will contribute to overcoming their shortcoming and mistakes will further improve their reflective teaching and reflective thinking skills. In-service training activities can also be organized in order to increase the awareness of teachers about the dimensions of learning objectives, content, learning and teaching process and measurement and evaluation.

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