The Effect Of Reading Literacy Questioning Training On Turkish Language Teacher Candidates' Pisa-Style Questions Preparation

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ABSTRACT

The purpose of the study was to test the effect of reading literacy questioning training on Turkish language teacher candidates' PISA-style question preparation. The training was carried out with 55 volunteer Turkish teacher candidates studying at the Turkish Language Teaching undergraduate program of Bursa Uludağ University. The training sessions with participants within the framework of the study lasted for 7 weeks in the fall semester of the 2019-2020 academic year. The study was conducted with a nested experimental design, which is one of the mixed methods. As a data collection tool, a test with 6 texts for the participants to ask questions and classify them was used. Furthermore, a semi-structured interview form was used to specify the development of the participants in the training process. The data related to the test were analyzed using descriptive statistics, t-test, Wilcoxon signed-rank test and Cohen's *d* formula, and the interview data were analyzed by the descriptive analysis method. Based on the analysis, the training had a significant effect on the participants' preparation of PISA-style questions and in increasing the success of classifying PISA-style questions according to the PISA framework. It was found that there was a significant increase in the number of questions asked by the participants after the training and in the number of questions for high-level competencies. After the training, the participants stated that they considered themselves competent in classifying questions rather than preparing PISA-style questions. However, they also stated that the training period was insufficient. The research findings revealed that teacher candidates needed pre-service questioning training and this need should be met. It is recommended that longer period of time be devoted to training for future studies.

Key words: Pre-Service Education, Reading Literacy, Pisa (Program For International Student Assessment), Questioning, Turkish Language Teacher Candidates

INTRODUCTION

Questioning is an important method in constructing meaning on texts as well as developing skills and literacy. Questioning is effective in developing the thinking skills and realizing the learning (Ball, 2014; Ensar, 2003; Frager, 1979; Gall & Rhod, 1987). As questioning is used as a teaching method in many lessons, it is also frequently used in mother tongue education lessons where language and thinking skills are taught. Especially during the process of reading education, meaning-making on texts is mostly carried out through questions. Seeking answers to questions is an effective way to activate the cognitive skills of the reader in the process of understanding the texts (Arı, 2014). Questions help readers to analyze the text by making connections between their old knowledge and new information in the text, bring concepts or ideas together in order to create a new product, explain their thoughts and create evidence to support them (Tankersley, 2003). When the comprehension questions are prepared correctly, they enable the readers to look at the text from different angles, deepen the meaning they have built on the text and be able to evaluate the text, thus enhancing their cognitive development level and helping them to think critically (Day & Park, 2005; Ülper & Yalınkılıç, 2010). In this respect, the process of constructing meaning on the text with questions constitutes the infrastructure of high-level thinking skills (Sarar Kuzu, 2013). The questions should be suitable for reading styles and new text types encountered in the changing and developing world and should have the quality to necessitate the students to use different skills.

Text-based questions are classified according to cognitive processes, sources of answers, the purposes of asking and the way they are prepared (Akyol, 2021). There are many taxonomies (for example, Bloom, 1956 – one of the most used in the field of education; Marzano, 1992; Halladyna, 1997; Steahl & Murphy 1979, etc.), especially related to cognitive processes, that classify the processes that the students have to perform in order to reach a goal. In the revised Bloom's taxonomy (Anderson & Krathwohl, 2001), six processes are defined; remembering, understanding, applying, analyzing, evaluating and creating, which require increasing levels of

cognitive skills. This taxonomy has been used as a criterion in many studies on questions (Aktaş, 2017; Arı, 2014; Bibi et al., 2020; Çintaş Yıldız, 2015; DeWaelsche, 2015; Faravani & Taleb, 2020; Özen, 2020). The questions for remembering and understanding, which are called low-level cognitive processes, are the questions where information is expected to be kept in memory and simple understanding to be realized. The questions for analysis, evaluation and creation, which are the high-level cognitive processes, are the questions that require the student to construct an answer in his/her mind to support an answer with logically justified evidence (Cotton, 1988). Since students generally give answers at the same cognitive level as the question, it is thought that the questions on high-level cognitive skills lead students to think independently and use language effectively by using more complex word and sentence structures (Baysen, 2006; Gall, 1984; Zucker et al., 2010). The questions on low-level cognitive processes, on the other hand, push students to rote learning, prevent independent inquiry and creative learning, and are not helpful in developing critical thinking (Tan, 2007). However, these questions are more effective than high-level questions when the teacher's purpose is to convey factual information and help students to memorize the information (Cotton, 1988). Therefore, there is a need to use the questions on remembering and understanding, which ensure the permanence of what is learned, and the questions on high-level cognitive processes that enable its transfer (making meaning from what has been learned and using it) (Mayer, 2014).

The questions available in the reading literacy test in the PISA (Program for International Student Assessment), in which the reading, science and mathematics literacy of students are measured with various questionnaires and achievement tests, are classified similarly to the Bloom taxonomy. These questions, which are classified as accessing information, understanding, evaluating and reflecting, are also divided into 8 difficulty levels [5, 6 and 7 levels in previous cycles] according to the reading competencies required (OECD, 2019). The questions at levels 2 and below require low-level reading skills, such as finding clearly articulated information in a simple text. The 5th and 6th level questions require complex skills such as finding the detail that is implicit in multiple texts and hidden by very close information.

The texts used in the PISA reading literacy tests, as one of the dimensions affecting reading, are one of the main factors on which PISA assessment is built (OECD, 2016). In this day and age when the means of accessing textual information has shifted from printed works to digital screens, PISA offers a variety of texts to reflect the changing text formats and contents (OECD, 2019). Thanks to electronic devices that have become a part of daily life, texts in digital environments consisting of paragraphs and in which different components are presented together rather than the conventional printed texts are often encountered. This is not a change in the way that the text is read from the screen instead of just on paper, but an innovation in which its structure and limitations are differentiated, and new knowledge and skills are required.

The PISA questions measure how well students have the skills they need to acquire in order to accomplish important things as adults in the world of the future. These are the questions involving skills such as problem solving, critical and creative thinking. At the same time, these questions that inquire about texts dealing with real life problems are life-based questions that measure students' ability to use the information in the text in real situations. In each of the PISA examinations that Turkey participated in from 2003 to 2018, the participating students were able to use only the minimum skills in reading; a significant percentage of them could not even reach this level, only a very few of them were able to exhibit high-level skills (OECD, 2019). Even though there are many reasons for this failure in PISA, one of them is that students are not familiar with the texts in PISA and the questions they encounter throughout their education life are far from the rationale of PISA (Konuk, 2018; Ören et al., 2017; Şimşek et al., 2018; Yıldız. et al., 2019). Due to this general failure, national exams and educational environments in Turkey have in recent years focused on the texts and questions for PISA reading literacy. The purpose of the focus is not to ensure that the students in Turkey are successful in PISA; it is to help the students to improve their comprehension skills by integrating the PISA logic into the education in Turkey.

In the studies examining different components of the teaching environment, it was stated that the questions were insufficient to develop high-level skills and literacy. There are questions that address low-level cognitive skills that require mostly remembering and simple understanding in Turkish textbooks. The number of questions pertaining to high-level cognitive skills is almost non-existent (Çeliktürk Sezgin & Gedikoğlu Özilhan, 2019; Eroğlu, 2019; Sallabaş & Yılmaz, 2020). In addition, it has been observed that Turkish teachers and Turkish teacher candidates are unsuccessful in preparing skill-based questions for high-level thinking skills and tend to ask questions that require simple mental operations and appeal to low-level skills (Aktaş, 2017; Arap, 2015; Ateş et al., 2016; Bekaroğlu, 2007; Çintaş Yıldız, 2015; Erden, 2020; Eyüp, 2012; Geçer, 2004; Göçer, 2005; Güfta and Zeki, 2008; Karatay & Atilla, 2019; Kavruk & Çeçen, 2013; Özen, 2020; Ülger, 2003). In particular, the teachers, who were the most significant factor in realizing their teaching goals (Schleicher, 2019), needed to be able to create and use the questions, similar to the PISA questions, that addressed real-life problems and guided the use of different skills. This requirement was expressed by many researchers and it was stated that there was a need for in-service or pre-service training that would enable the Turkish language teachers to ask good-quality questions (Akyol et al., 2013; Arap, 2015; Ateş et al., 2016; Keray Dinçel, 2016). However, in the relevant literature, it is clearly seen that the studies on the questions asked by the teachers and teacher candidates generally focus on examining the questions, and there is no training practice to improve the questioning skills of them.

In line with this need identified, introducing a training program that will enable the Turkish language teacher

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candidates to ask PISA-style questions on reading literacy has been determined as the problem of this study. The reason why this training program is based on the PISA framework is the idea that the PISA-style questions that require combining old and new information and associating it with daily life, which leads to the use of high-level thinking skills along with simple reading skills, and are based on the premises of using real-life situations, will be beneficial not only in measuring but also in developing reading literacy. With this in mind, such questions are referred to as 'PISA-style' in this study.

Previous studies demonstrated that when training programs were provided to the in-service teachers and prospective teachers to ask questions, their questioning skills were positively impacted, they could create life-based questions, the use of questions addressing lower-level cognitive processes diminished, and it was possible for them to ask high-level questions (Ar, 2019; Aslan, 2011; Cumhur, 2016; Gürbüz, 2014; Joseph & Thomas 2020; Metz, 2008; Oliveira, 2010; Yeşil & Korkmaz, 2010). Moreover, there was a positive relationship between in-service training or better pre-service training to improve the questioning skills of teachers and students' participation in the lesson and their achievement of high-level learning outcomes (Cotton, 1988). Therefore, it is thought that a training program aimed at improving questioning skills will enhance the quality of questions asked by the Turkish language teacher candidates.

The purpose of this study was to test the effect of PISA-style questioning training program on reading literacy over the Turkish language teacher candidates' preparation of PISA-style questions. With this training program, it is aimed that Turkish language teacher candidates will get to know the PISA reading literacy assessment framework, understand the text and question structures, gain familiarity with them and ask such questions. However, the PISA-style should be considered as a means, not an end. It is because the desired goal is to develop questioning skills as a teaching skill and enable them to ask questions that appeal to different cognitive skills. For this purpose, the research questions for which answers are sought are as follows:

1. Is the questioning training for reading literacy effective on Turkish language teacher candidates' preparation of PISA-style questions?
2. Is the questioning training for reading literacy effective on Turkish language teacher candidates' classification of PISA-style questions according to the PISA reading literacy assessment framework?
3. What are the opinions of Turkish language teacher candidates about their PISA-style question preparation competencies after the training program on questioning on literacy?
4. What are the opinions of Turkish language teacher candidates on their ability to classify PISA questions according to the PISA reading literacy assessment framework, after the training program on questioning about literacy?

METHOD

The Study Pattern

In order to provide sufficient information about the process and outcome of the training program and reveal the different aspects of the study, the nested experimental design, which is one of the mixed methods, was used. In the nested experimental design, where quantitative and qualitative methods are used together, the qualitative data is used to answer the secondary research problem of the dominant quantitative study (Creswell & Plano Clark, 2018).

In this study, quantitative data was used in order to determine the effectiveness of training program, which is the main purpose of the study, and the quantitative dimension was patterned with the "single group pretest-post-test model without the control group", one of the experimental patterns. The qualitative data, on the other hand, were used to determine the views of Turkish language teacher candidates about their development in the training process, which is the secondary research problem of the study. Figure 1 illustrates the data collection and analysis stages of the study.

The training program given after the pretest lasted for a total of 7 weeks, 1 day a week for 2 course hours. The first two weeks were allocated to providing theoretical information (format, type and context of the text; item types of questions and cognitive processes), and the training program continued with lectures, presentations and question-answer methods and techniques. In the first session of the 3rd week's training, the theoretical information (level of difficulty of the questions) continued to be given and in the second training session, implementation studies were started. For the following 4 weeks, the lessons were completely devoted to practices and conducted with discussions with the participants. The training program sessions continued as the original PISA texts presented to the public and the questions related to these texts were examined, and then the participants prepared questions for the examined PISA texts. In addition to preparing questions for PISA texts outside of the classroom, the participants were asked to find PISA-style texts and prepare questions by themselves. These questions were examined and discussed in the training sessions. At the end of 7 weeks, the post-test was applied and the opinions of the participants were taken with an interview form.

The Study Group

The study group was designated by the easily accessible sampling method and was formed from the teacher candidates in the educational institution where the researchers worked. The aim here was to manage the experimental intervention successfully and prevent loss of time, money and workforce. Accordingly, the study was carried out in the fall semester of the 2019 and 2020 academic year, with 55 volunteer Turkish language teacher candidates who took the Comprehension Techniques I: Reading Education course, studying at the Turkish Language Teaching undergraduate program of Bursa Uludağ University.
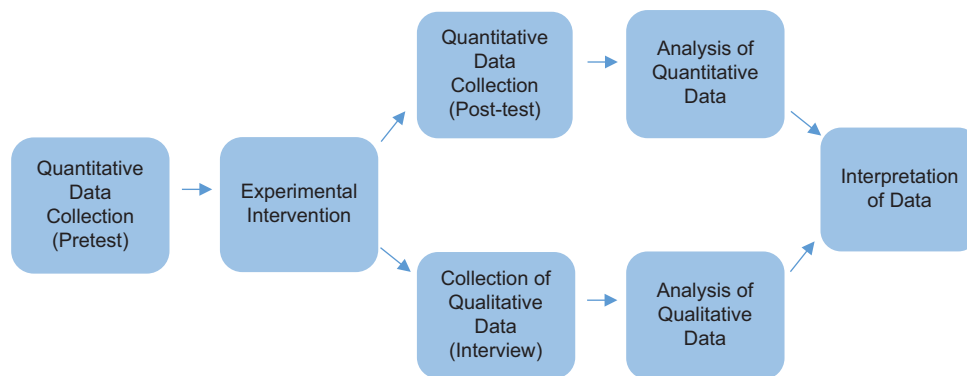
Figure 1. Data collection, analysis stages of the study and interpretation stages of the study

Data Collection

In accordance with this situation in PISA, static and dynamic texts that require different levels of digital literacy skills; multi-source texts that require the ability to find, compare and associate between multiple text sources as well as single-source texts; in addition to continuous texts consisting of paragraphs; discontinuous texts in which materials from daily life such as brochures and sketches are used; different types such as explanation, discussion, interactive, and various texts for different purposes such as public and educational are presented. In the training program provided to the participants, similar texts and questions (what is meant by PISA-style are similar texts and similar questions) were used in the pretest-post-test and were given to the participants as homework. PISA-style texts and publicly available PISA texts were used throughout the training program.

Pretest

A test was prepared in order to measure the participants' ability to prepare PISA-style questions and classify the questions according to the reading literacy assessment framework before the training program. Since the possibility that the participants had already seen the PISA texts and questions announced by the OECD would threaten the internal validity, the texts and questions were created by the researcher. First of all, 24 texts were prepared and 6 of these texts were selected to be put to the test by obtaining an expert opinion. A total of 9 questions were prepared for two of these texts. In order to ensure the content validity of the test, it was made sure that the selected texts were in different formats, genres and contexts, and the questions were in different cognitive processes and item types. The participants were asked to classify 6 texts and 9 questions and prepare questions for 4 texts that did not contain any questions. Along with the actual test, a "question evaluation form" was prepared, in which the categories included in the reading literacy evaluation framework were presented in tables in order to mark the classified texts and questions.

Post-test

A post-test was applied to see if there was any difference in the participants' PISA-style question preparation and classification after the training program. In the post-test, the texts and questions used in the pretest were utilized in order to ensure internal validity by preventing the differences in the number of questions arising from the text.

Interview

When the training program was completed, an interview form was prepared in order to obtain the opinions of the participants about their development in the training process. Due to the large number of data to be collected in the study, a semi-structured interview form was used to code the data quickly and facilitate the analysis. During the interviews with the participants, 4 closed-ended and 8 open-ended questions were asked about the duration, method, content of the training and their self-efficacy. The answers given to the closed-ended questions were required to be explained with their justifications.

Data Analysis

After the questions prepared by the participants were classified according to their reading literacy levels, another researcher was asked to classify the questions for the reliability of the classification. The classifications of both researchers were calculated according to the Miles and Huberman formula and it was found that the agreement between the coders was at a sufficient level (91.24%).

One point was assigned to each category in the scoring of the participants according to the classification of PISA-style questions. The format of 6 texts in the test were evaluated over a total of 36 points; 18 points for the type and context, and 9 points for the cognitive process and item type.

IBM SPSS 25 program was used in order to analyze the significance of the difference between the number of PISA-style questions prepared by the participants in the pretest and post-test, the significance of the difference between the number of questions for high-level competencies, and the significance of the difference between the scores of classifying the questions. The distribution of the data obtained from the tests, skewness coefficient[1] and normality analyzes were performed with Kolmogorov-Smirnov[2], which is one of the normality tests. The T-test was used for related samples in the analysis of normally distributed data and Wilcoxon signed-rank test was used in the analysis of data that did not show

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normal distribution. While evaluating the analysis results, the level of significance was taken as 0.05. Furthermore, if the training program provided had an effect on the question classification success of the participants, Cohen's d formula, one of the effect size statistics, was used in order to determine how great it was.

The interviews with the participants were analyzed by descriptive analysis method. The analyzed data were classified and tabulated, and the frequency and percentage values were calculated. In order to support the data presented in the tables, direct quotations were made from the views of the participants. The interview findings were charaterised by taking into account the significant points in order not to fall into repetition and limit the subject. Participants' competencies in asking PISA-style questions and categorizing were emphasised.

RESULTS

In this section, the findings regarding the effect of the questioning training on the participants' PISA-style questioning and classification and their views on their ability to do these are included.

The Effect of Questioning Training on Participants' PISA Style Question Preparation

In this section, data on the number of PISA-style questions prepared by the participants in the pretest, the number of PISA-style questions prepared in the post-test and the significance of the difference between the two are presented. Moreover, there are the results related to the distribution of the questions to the literacy proficiency levels and the significance of the difference between the numbers of questions for high-level competencies.

The data on the total number of questions prepared by the participants in the pretest and post-test and how many of these questions are PISA-style are illustrated in Table 1.

According to Table 1, 39.1% (221) of the questions asked by the participants in the pretest were PISA-style ones and 60.9% (344) were not PISA-style questions. 69.5% (592) of the questions asked by the participants in the post-test were PISA-style ones, 30.5% (260) were not PISA-style questions. In other words, the participants asked 371 more PISA-style questions in the post-test than in the pretest.

Since the data obtained in the pretest and post-test regarding the number of PISA-style questions prepared by the participants did not show a normal distribution (skewness coefficient: 1.166; Kolmogorov-Smirnov: 0.005), the results of the Wilcoxon signed-rank test used were illustrated in Table 2.

As is seen in Table 2, a significant difference was found between the number of PISA-style questions asked by the participants in the pretest and post-test [z = -6.461, p <.05]. Moreover, it was observed that all participants prepared more PISA-style questions in the post-test than in the pretest.

The distribution of the PISA-style questions prepared by the participants in the pretest and post-test to the literacy proficiency levels is illustrated in Table 3.

As can be seen from Table 3, as the level of questions increased, the number of questions prepared by the participants

in the pretest decreased. Participants could not ask 5th and 6th level questions in the pretest. Participants who could not prepare 6th level questions in the post-test asked 13 questions at the 5th level. A maximum of 1b level questions were asked in the pretest and post-test. In the post-test, the participants prepared 43 more questions than the number of questions for the high-level competencies (4, 5 and 6th levels) they prepared in the pretest.

Since the data obtained in the pretest and post-test regarding the number of PISA-style questions for high-level competencies prepared by the participants did not show normal distribution (skewness coefficient: 1.837; Kolmogorov-Smirnov: 0.000), the results of the Wilcoxon signed-rank test used were illustrated in Table 4.

According to Table 4, it was found that there was a significant difference [z = -4.690, p <.05] between the number of PISA-style questions about high-level competencies in the pretest and post-test of the participants. It was identified that the number of questions for high-level competencies prepared by most of the participants increased in the post-test.

The Effect of Questioning Training on Participants' Classification of PISA Style Questions

In this section, the participants' PISA-style questions in the pretest and post-test, classification scores according to

Table 1. Descriptive statistics on the number of questions prepared by the participants in the pretest and post-test

	N	*M*	*SD*	Min.	Max.	Total number of questions
Pretest						
Number of questions	55	10.27	4.653	2	28	565
Number of PISA-style questions	55	4.02	2.960	0	17	221
Post-test						
Number of questions	55	15.49	4.582	8	29	852
Number of PISA-style questions	55	10.76	3.682	5	21	592

Table 2. Wilcoxon signed-rank test results regarding the difference between the number of PISA-style questions prepared by the participants in the pretest and post-test

Post-test – Pretest	Number of participants	Mean rank	Rank Total	z	p
Negative rank	0	0.00	0.00	-6.461[a]	0.000
Positive rank	55	28.00	1540.00		
Equal	0	-	-		

[a]Based on negative ranks

Table 3. Distribution of PISA-style questions prepared by the participants in the pretest and post-test on the reading literacy proficiency levels

	N	1b	1a	2	3	4	5	6	Total number of PISA-style questions
Pretest	55	96	56	43	14	12	0	0	221
Post-test	55	152	120	146	119	42	13	0	592

the PISA reading literacy assessment framework and data on the significance between the two were presented.

The descriptive statistics data on the pretest and post-test scores of the participants in classifying the PISA-style questions according to the PISA reading literacy assessment framework are illustrated in Table 5.

Participants' classification of PISA-style questions was evaluated over 36 points, and an average increase of 10.14 points was observed in the post-test compared to the pretest. The lowest score received increased from 5 to 18, and the highest score from 25 to 32.

Since the data obtained in the pretest and post-test regarding the participants' PISA-style questions classification scores were normally distributed (skewness coefficient: 0.668; Kolmogorov-Smirnov: 0.200), the t-test results used were illustrated in Table 6.

As seen in Table 6, a significant difference was found between the pretest and post-test scores of the participants in classifying the PISA-style questions [$t(54) = 13.184$, $p < .05$]. Therefore, the literacy-oriented questioning training program was effective in categorizing the participants' PISA-style questions according to the reading literacy assessment framework. The magnitude of this effect was calculated by Cohen's d formula. According to this formula, the following result has been obtained:

The fact that the d value that has the effect magnitude is above 0.8 indicates that the effect is great (Green and Salkind, 2014).

Opinions of Participants on PISA Style Question Preparation Competencies after the Questioning Training

After the training program, the participants were asked whether they considered themselves competent in preparing PISA-style questions and the answers obtained were presented in Table 7.

The majority of the participants (63.6%) considered themselves partially competent in preparing PISA-style questions after the training program. The participants expressed that one of the reasons why they did not consider themselves fully competent was that there was more than one issue to be considered while preparing questions and more practice was needed to prepare appropriate questions. The short duration of the training, coupled with the previous reason, was one of the reasons why the participants did not consider themselves fully competent. Regarding this, the participant with the code K21 made the following comment: *"I think that the education has improved me, but I do not think that I can reach very high levels because the duration of education program was short. For this reason, I can prepare the questions at a certain level right now, but it could have been higher."*

Table 4. Wilcoxon signed-rank test results regarding the difference between the number of PISA-style questions prepared by the participants in the pretest and post-test for high-level competencies

Post-test – Pretest	Number of participants	Mean rank	Rank Total	z	p
Negative rank	4	14.00	56.00	-4.690[a]	,000
Positive rank	33	19.61	647.00		
Equal	18	-	-		

[a]Based on negative ranks

Table 5. Descriptive statistics on participants' scores for classifying PISA-style questions in the pretest and post-test

	N	*M*	*SD*	Min.	Max.	Full points
Pretest	55	15.64	5.307	5	25	36
Post-test	55	25.78	3.65	18	32	36

Some participants stated that the text was an important factor for their question preparation competencies. These participants stated that they had difficulties especially in preparing questions about discontinuous mixed and multiple texts. Regarding this, one of the participants explained his answer as follows: *"Since I do not know exactly which questions will be tough in connection with the audience for which the questions are prepared, I am confused in preparing difficult questions. I think that I am sufficient enough in preparing simple questions. What challenges me in preparing questions is that the text is either too simple or too complex. Since the subjects to be asked are few in simple texts, the same questions always come up in a cramped point on them. In mixed texts, the idea of which question can be appropriate for the student causes me to be indecisive."*, the participant coded as K1 stated that she prepared simple questions similar to each other for simple texts and that she had difficulties in preparing questions with difficulty in accordance with the level of the student in difficult texts.

Table 7 depcits that 30.9% of the participants considered themselves competent in preparing PISA-style questions. Many of these participants stated that they had difficulties in preparing questions in the first weeks of the training program, but after examining some examples in the classroom and reinforcing them with homework, they started to consider themselves competent in preparing PISA-style questions with the feedback received.

One of the participants (K18), who did not consider himself competent in preparing PISA-style questions, said that he understood the rationale of preparing questions, but that he had to work harder to see himself as competent. Another

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Table 6. T-test results for related samples of participants' pretest and post-test scores in classifying PISA-style questions

Measurement	N	Arithmetic mean	Standard deviation	Degree of freedom	t value	p value
Post-test scores in classifying the PISA-style questions	55	25.78	3.650	54	13.184	0.000
Pretest scores in classifying the PISA-style questions	55	15.64	5.307			

participant (P25) stated that he did not like most of the questions he prepared and therefore he considered himself incompetent. The participant coded as K33 made following comment: *"I can prepare a maximum of 3rd level questions in student competencies, but I cannot prepare questions that reflect the cognitive process or above. This shows that I am not competent."*. This participant further added that she did not consider herself competent because she could not prepare the questions at high-level student competencies and cognitive processes.

The Opinions of the Participants on the Classification Competencies of PISA Style Questions after the Questioning Training

After the training program, the participants were asked whether they considered themselves competent in classifying the PISA questions according to the PISA reading literacy assessment framework and the answers obtained were illustrated in Table 8.

More than half of the participants (54.5%) considered themselves competent in classifying PISA-style questions according to the PISA reading literacy assessment framework after the training program. In this regard, it was stated that during the training process, the classification of PISA-style questions was sufficiently emphasized and the subject was reinforced thanks to the homework. However, there were also participants who said that the duration of the training program was short and there was not enough opportunity to practice to feel fully competent. Apart from this, they claimed that they did not attach the due significance to the training program or they could not attend all of the courses due to the fact that they had different courses during the semester as reasons for considering themselves as partially competent. In relation to this one of the participants coded as K4 commented: *"There were classes that I missed due to my internship program, but the classes I attended taught me a lot. And despite the classes I missed, I find myself competent, if not completely."*, She stated that she did not consider herself fully competent as she could not attend all of the courses. The participants who did not consider themselves competent stated that they had difficulties in the cognitive process category while classifying the questions. One participant (K55) indicated that he did not take this subject seriously and was indifferent to it as the reason for his incompetency.

DISCUSSION

In this study, it was aimed to test the effectiveness of the training program designed to enable the Turkish language

Table 7. Opinions of the participants on the competencies of preparing PISA-style questions after the training program

Opinions	N	%
I am competent.	17	30.9
I am partially competent.	35	63.6
I am not competent.	3	5.5
Total	55	100.0

Table 8. Opinions of the participants on their competencies to classify PISA questions according to the PISA reading literacy assessment framework after the training program

Opinions	N	%
I am competent.	30	54.5
I am partially competent.	23	41.8
I am not competent.	2	3.6
Total	55	100.0

teacher candidates to ask PISA-style questions about various texts that required using different levels of reading proficiency. The findings were discussed within the scope of the studies in the relevant literature and suggestions for the study results were presented.

The number of questions prepared by the participants about the texts used in data collection increased significantly after the training program. This particular result is in line with the results of the studies aimed at improving the questioning skills of teachers and prospective teachers in different branches (Ar, 2019; Aslan, 2011; Bay, 2011; Bay & Alisinanoğlu, 2012; Bolen, 2009; Büyükalan Filiz, 2002; Büyükalan Filiz, 2009; Cumhur, 2016; Gürbüz, 2014, Joseph & Thomas 2020; Metz, 2008; Oliveira, 2010; Ralph, 1999; Yeşil & Korkmaz, 2010). With the statistical analyses carried out, it was revealed that the increase in the number of PISA-style questions prepared after the experiment was significant. During the training sessions, the fact that the participants examined the sample questions from the original PISA questions and the questions prepared by the researchers and each other increased the number of appropriate questions. The number of PISA-style questions they prepared after the training program was higher than all the questions they had prepared before the training sessions (with or without PISA-style). The fact that the participants did not work with discontinuous, mixed and multi-format texts which they were not familiar with before the training program had a significant impact over the increase in the

number of questions. It is because the participants stated that they found the texts in this format strange even in the interviews made after receiving the training. Therefore, they had difficulty in preparing especially high-level questions. However, even though they asked very few questions about discontinuous texts before the training program, there was a significant increase in the number of questions they asked after the training program. In this case, it was clearly observed that the participants could prepare questions for different text formats after becoming familiar with them. In other words, the training program was effective in the participants' preparation of PISA-style questions.

When the distribution of the questions prepared by the participants was examined, it was revealed that while the rate of questions for low-level competencies decreased, the rate of questions for medium and high-level competencies increased and the increase was significant. In other words, the training provided was effective in the participants' preparation of PISA-style questions for high-level reading proficiency. In his experimental study, Bolen (2009) found that the questioning training given to the teachers increased the number of high-level questions asked by teachers, as well as the number of answers to high-level cognitive processes given by students and decreased the low-level answers. In this respect, it is possible to say that the increase in the number of questions regarding high-level reading competencies evidenced in the study will contribute to the development of students' high-level thinking skills when the teacher candidates begin to teach in real classrooms. However, it is thought that the percentage of questions (9.2%) addressing high-level competencies was insufficient. The majority of the participants (70.6%) still tended to prepare questions for low-level competencies. Similarly, in the study conducted by Bayraktar and Yalçın (2019), it was observed that the pre-service teachers tended to ask questions about low-level cognitive processes before and after the training program.

The participants put forward several reasons for the difficulties they experienced in preparing questions that required high-level reading proficiency. The most frequently mentioned one was that this training program, which had an intense content, took a shorter time than necessary and therefore they could not do enough practice. They stated that they found themselves partially competent in asking PISA-style questions, especially due to their deficiencies in questioning for high-level competencies and that they would feel fully competent by doing a little more practice. In a similar study, Ar (2019) stated that teachers had difficulties in asking open-ended questions about context-based high-level skills, and that it may be useful to do more practice in overcoming this difficulty. To this suggestion, we can also add the suggestion of giving feedback on the questions prepared. Yeşil and Korkmaz (2010) concluded that with three different teaching practices (based on the questions of the pre-service teachers, based on the questions of the lecturer and a combination of the two), the greatest contribution to the development of the questioning skills of the pre-service teachers for their higher-order thinking skills was provided by the teaching practice based on the questions of the pre-service teachers. They interpreted this result as the ability to ask good questions

can be improved through practice. In another study, Wood and Anderson (2001) stated that the success of a teacher in questioning was related to reinforcing this ability. In line with these studies, which also support the views of the participants, it is possible to suggest that the ability of pre-service teachers to ask questions about high-level competencies will develop more when they are given the opportunity to do more practice. Another reason suggested for their difficulty in preparing high-level questions is the features of texts. The participants stated that they had just realized that they needed to consider the text features while questioning and that they had difficulty in questioning about difficult and complex texts. Some of the participants stated that they had difficulty in questioning regardless of the level when the text to be prepared was difficult and complex.

Even though it was not a goal to ensure that the participants correctly expressed the question appropriate to the skill they wanted to measure in the training provided, it was clearly observed that they used better quality interrogative sentences and words after the training program, especially in the questions about evaluation and reflection skills. In the study of Yeşil and Korkmaz (2010), it was also stated that the training program to increase the skill of questioning contributed to the use of appropriate words in the questions by the pre-service teachers.

Participants' PISA-style questions significantly increased their classification scores according to the PISA reading literacy assessment framework after the experiment. As far as our analysis is concerned, the training program had a significant impact on increasing the PISA-style questions classification score. Participants who had difficulty in classifying the questions stated that they had difficulty in determining the cognitive levels of the questions. In Ar (2019)'s study on improving teachers' questioning skills, some of the participants also stated that the point they had difficulty in the education process was deciding on the cognitive levels of the questions and for this reason, the researcher suggested that training programs should be provided in which taxonomy was to be explained in a comprehensive and detailed way.

When it came to classifying the questions according to the reading literacy assessment framework, the participants considered themselves more competent than asking PISA-style questions after the experiment. In other words, the quantitative and qualitative data of the study supported each other. At the same time, it is possible to say that the participants realistically evaluated their ability to ask PISA-style questions as well as to classify those PISA-style questions. Participants were of the opinion that questioning was more difficult than classifying questions and requires more practice. It was observed that the success in classifying the PISA questions and self-efficacy of primary school mathematics teacher candidates, to whom Gürbüz (2014) provided a similar training, was higher than their success and self-efficacy in preparing PISA-style questions. In this respect, the findings of both studies overlap.

CONCLUSION AND RECOMMENDATIONS

Since this study was conducted with a weak experimental design, it has some limitations. More reliable results can

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be accomplished by repeating a similar study using a quasi-experimental or real experimental design. Nevertheless, the results of this study, which we have so far not encountered as a research subject, illustrate that the Turkish teacher candidates are able to ask PISA-style questions when they are trained. The important thing is that PISA-style questions have features that improve students' higher-level thinking skills. In his study Özaslan (2019) found that reading training implementation by using PISA-style text and questions increased secondary school students' reading comprehension skills. In other words, if teachers prepare PISA-style questions for modelling or evaluation in the teaching environment, students will be able to improve themselves.

Therefore, a quality education and opportunity should be offered to the teacher candidates in undergraduate courses in order to develop their skills in selecting and processing texts for reading literacy and producing high-level questions. It is expected that questioning skills will be improved when supportive training program is provided in the in-service period. In Turkey, the central education organization and local education institutions provide short-term training programs to volunteer teachers for this purpose. However, as it is the case in this study, the effectiveness of the results of the training program provided to a small group of teachers in a short time is questionable. For this reason, we recommend the education authorities and policy makers to keep the duration of pre-service and in-service questioning training periods longer. It is because many study results demonstrate that teachers need long periods of time in a subject for their professional development (Ganser, 2000; Garet et al., 2001; Guskey & Yoon, 2009; Ingvarson et al. 2005; Mohr et al. 2004, Valli & Hawley, 2002 as cited in Bolen, 2009; Yoon et al., 2007).

END NOTES

1   Morgan et al. (2004) are of the opinion that if the skewness is more than 1 or less than -1, the scatterplot is clearly skewed and it is appropriate to use a non-parametric statistics.

2   Since the number of data is over 50, the Kolmogorov-Smirnov test, one of the normality tests, was used (Büyüköztürk, 2019; Saruhan & Özdemirci, 2018; Taşpınar, 2017).

REFERENCES

Aktaş, E. (2017). Öğretmen adaylarının farklı metin türlerine yönelik soru sorma becerilerinin yenilenmiş Bloom taksonomisine göre değerlendirilmesi. *Turkish Studies International Periodical for the L a n g u a g e s , Literature and History of Turkish or Turkic, 12*(25), 99-118. http://dx.doi.org/10.7827/TurkishStudies.12274

Akyol, H. (2021). *Programa uygun Türkçe öğretim yöntemleri* (11th ed.). Pegem Akademi.

Akyol, H., Yıldırım, K., Ateş, S., & Çetinkaya, Ç. (2013). Anlamaya yönelik ne tür sorular soruyoruz. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 9*(1), 41-56.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives: Complete Edition*. Longman.

Ar, M. E. (2019). *Fen bilimleri öğretmenlerine yönelik geliştirilen nitelikli yaşam temelli açık uçlu soru hazırlama kursunun uygulanması ve değerlendirilmesi* [Unpublished master's thesis]. Bursa Uludağ Üniversitesi Eğitim Bilimleri Enstitüsü, Bursa.

Arap, B. (2015). *Ortaokul Türkçe öğretmenlerinin metin işleme sürecinde kullandıkları soruların incelenmesi: Bir durum çalışması* [Unpublished master's thesis]. Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.

Arı, G. (2014). Evaluation of the questions of understanding the text in Turkish language textbooks according to the revised Bloom's taxonomy. *International Journal of Academic Research, 6*(1), 69-75.

Aslan, C. (2011). Soru sorma becerilerini geliştirmeye dönük öğretim uygulamalarının öğretmen adaylarının soru oluşturma becerilerine etkisi. *Eğitim ve Bilim, 36*(160), 236-249.

Ateş, S., Güray, E., Döğmeci, Y., & Gürsoy, F. F. (2016). Öğretmen ve öğrenci sorularının gerektirdikleri zihinsel süreçler açısından karşılaştırılması. *Okuma Yazma Eğitimi Araştırmaları, 4*(1), 1-13.

Bay, D. N. (2011). *Okul öncesi öğretmenlerine verilen soru sorma becerisi öğretiminin etkisinin incelenmesi.* [Unpublished doctoral dissertation]. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Bay, D. N., & Alisinanoğlu, F. (2012). Okul öncesi eğitimi öğretmenlerine uygulanan soru sorma becerisi öğretim programının öğretmenlerin sorularının bilişsel taksonomisine etkisi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 8*(3), 80-93.

Ball, B. E. (2014). *Why ask the question? A study of teachers' questioning during discussion of text.* [Unpublished doctoral dissertation]. Virginia Polytechnic Institute and State University. Blacksburg, Virginia

Bayraktar, A., & Yalçın, S. (2019). Examining preservice teachers' questioning and feedback in teaching practicum course. *Journal of Education and Future, 16*, 17-28. https://doi.org/10.30786/jef.512638

Baysen, E. (2006). Öğretmenlerin sınıfta sordukları sorular ile öğrencilerin bu sorulara verdikleri cevapların düzeyleri. *Kastamonu Eğitim Dergisi, 14*(1), 21-28.

Bekaroğlu, A. (2007). *İlköğretim 6. sınıf Türkçe dersindeki yazılı sınav sorularının soru basamaklarına göre incelenmesi ve değerlendirilmesi (Kastamonu örneği)* [Unpublished master's thesis]. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu.

Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objective: The classification of educational goals: Cognitive domain.* United States of America: Davıd McKay Company.

Bolen, J. (2009). *An Investigation of Limited Professional Development on Teacher Questioning and Learner.* [Unpublished doctoral dissertation]. Walden University.

Bibi, W., Butt, M. N., & Reba, A. (2020). Relating Teachers' Questioning Techniques with Students' Learning within the Context of Bloom's Taxonomy. *FWU Journal of Social Sciences, 14*(1), 111-119.

Büyükalan Filiz, S. (2002). *Soru-cevap yöntemine ilişkin öğretimin öğretmenlerin soru sorma düzeyi ve tekniklerine etkisi.* [Unpublished doctoral dissertation]. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Büyükalan Filiz, S. (2009). Soru cevap yöntemi eğitiminin öğretmenlerin soru sorma bilgisi ve soru sorma tekniklerine etkisi. *Sosyal Bilimler Enstitüsü Dergisi, 3*, 167-195.

Büyüköztürk, Ş. (2019). *Sosyal bilimler için veri analizi el kitabı* (25th ed.). Pegem Akademi.

Cotton, K. (1988). Classroom questioning. *School Improvement Research Series, 5*, 1-22.

Creswell, J. W., & Plano Clark, V. L. (2018). *Karma yöntem araştırmaları: Tasarımı ve yürütülmesi* (Y. Dede, & S. B. Demir, Trans., 3rd eds.). Anı Yayıncılık.

Cumhur, F. (2016). *Matematik öğretmeni adaylarının soru sorma davranışlarının gelişiminin incelenmesi: Bir ders imecesi çalışması* [Unpublished doctoral dissertation]. Karadeniz Teknik Üniversitesi, Trabzon.

Çeliktürk Sezgin, Z., & Gedikoğlu Özilhan, Y. G. (2019). 1-8. sınıf Türkçe ders kitaplarındaki metne dayalı anlama sorularının incelenmesi. *Ana Dili Eğitimi Dergisi, 7*(2), 353-367. https://doi.org/10.16916/aded.530191

Çintaş Yıldız, D. (2015). Türkçe dersi sınav sorularının yeniden yapılandırılan Bloom taksonomisine göre analizi. *Gaziantep Üniversitesi Sosyal Bilimler Dergisi, 14*(2), 479-497.

Day, R. R., & Park, J. S. (2005). Developing Reading Comprehension Questions. *Reading in a foreign language, 17*(1), 60-73.

DeWaelsche, S. A. (2015). Critical thinking, questioning and student engagement in Korean university English courses. *Linguistics and Education, 32,* 131-147. https://doi.org/10.1016/j.linged.2015.10.003

Ensar, F. (2003). Türkçe eğitiminde bir öğretim yönteminin geliştirilmesine kaynaklık etmesi bakımından soru. *Türklük Bilimi Araştırmaları, 13*, 267-285.

Erden, B. (2020). Türkçe, matematik ve fen bilimleri dersi beceri temelli sorularına ilişkin öğretmen görüşleri. *Academia Eğitim Araştırmaları Dergisi, 5*(2), 81-103.

Eroğlu, S. (2019). *6. sınıf Türkçe ders kitaplarındaki metin altı okuma-anlama soru ve etkinliklerinin güncellenmiş Bloom Taksonomisi'ne göre değerlendirilmesi* [Unpublished master's thesis]. Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü, Balıkesir.

Eyüp, B. (2012). Türkçe öğretmeni adaylarının hazırladığı soruların yeniden yapılandırılan Bloom taksonomisine göre değerlendirilmesi. *Kastamonu Eğitim Dergisi, 20*(3), 965-982.

Faravani, A., & Taleb, E. (2020). Teachers' use of Bloom's higher order questions in class to augment EFL learners' listening comprehension and critical thinking ability. *Journal of Language and Cultural Education*, *8*(2). https://doi.org/10.2478/jolace-2020-0015

Frager, A. M. (1979). *Questioning strategies: implications for teacher training*. Retrieved from ERIC datebase. (ED 238 845).

Gall, M. G., & Rhod, T. (1987). Review of research on questioning techniques. In W. W. Wilen (Ed.), *Questions, questioning techniques, and effective teaching* (pp. 23-43). National Educaiton Association.

Ganser, T. 2000. "An ambitious vision of professional development for teachers". In: *NASSP Bulletin, 84*(618), 6-12.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*(4), 915-945.

Geçer, K. (2004). *Temel eğitim ikinci kademe birinci sınıf Türkçe öğretmenlerinin sınıf içi etkinliklerde soru sorma stratejileri üzerine bir araştırma* [Unpublished master's thesis]. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Göçer, A. (2005). *İlköğretim 2. kademe Türkçe öğretiminde ölçme ve değerlendirme* [Unpublished doctoral dissertation]. Atatürk Üniversitesi Sosyal Bilimleri Enstitüsü, Erzurum.

Green, S. B., & Salkind, N. J. (2014). *Using SPSS for windows and macintosh: Analyzing and understanding data* (7th ed). Pearson Education.

Guskey, T. R., & Yoon, K. S. (2009). What works in professional development?. *Phi delta kappan, 90*(7), 495-500.

Güfta, H., & Zeki, Z. K. (2008). İlköğretim ikinci kademe Türkçe dersi yazılı sınav sorularının düzeyleri üzerine bir değerlendirme. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 17*(2), 205-218.

Gürbüz, M. Ç. (2014). *PISA matematik okuryazarlık öğretiminin PISA sorusu yazma ve matematik okuryazarlık düzeyleri üzerine etkisi* [Unpublished master's dissertation]. Uludağ Üniversitesi Eğitim Bilimleri Enstitüsü, Bursa.

Halladyna, T. M. (1997) *Writing Test Items to Evaluate Higher order Thinking.* Allyn & Bacon.

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of Professional development programs on teachers' knowledge, practice, student outcomes & efficacy. *Education Policy Analysis Archives, 13*(10), 1068-2341.

Joseph, S., & Thomas, M. (2020). Questioning behaviours and patterns of prospective teachers on practicum. *Cogent Education, 7*(1), 1823142. https://doi.org/10.1080/2331186X.2020.1823142

Karatay, H., & Atilla, D. (2019). Türkçe öğretmenlerinin dil becerilerini ölçme ve değerlendirme yeterlikleri. *Milli Eğitim, 48(1*), 685-716.

Kavruk, H., & Çeçen, M. A. (2013). Türkçe dersi yazılı sınav sorularının bilişsel alan basamakları açısından değerlendirilmesi. *Ana Dili Eğitimi Dergisi, 1*(4), 1-9.

Keray Dinçel, B. (2016). *Türkçe öğretmenlerinin anlama becerilerinde ölçme ve değerlendirmeye yönelik görüşleri.* [Unpublished doctoral dissertation]. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Konuk, S. (2018). 2017 Türkçe dersi öğretim programında yer alan alışılmamış metin türlerini tanıyalım. *Cumhuriyet Uluslararası Eğitim Dergisi, 7*(4), 428-452. http://dx.doi.org/10.30703/cije.451242

Marzano, R. J. (1992). *A different kind of classroom.* Association of Supervision and Curriculum Development (ASCD).

The Effect Of Reading Literacy Questioning Training On Turkish Language Teacher Candidates' Pisa-Style Questions Preparation

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Mayer, R. E. (2014). Bilişsel süreç boyutu. L. W. Anderson, & D. R. Krathwohl (Eds.), *Öğrenme öğretim ve değerlendirme ile ilgili bir sınıflama* içinde (D. A. Özçelik, Trans., 2nd ed., pp. 81-122). Pegem Akademi.

Metz, M. L. D. (2008). *A study of high school mathematics teachers' ability to identify and create questions that support students' understanding of mathematics.* [Unpublished doctoral dissertation]. University of Pittsburgh.

Mohr, M. M., Rogers, C., Sanford, B., Nocerino, M. A., MacLean, M. S., & Clawson, S. (2004). *Teacher research for better schools.* Teachers College Press.

Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2004). *SPSS for ıntroductory statistics: Use and ınterpretation* (2nd ed.). Lawrence Erlbaum Associates.

OECD. (2016). *PISA 2018 draft analytical framework may 2016.* https://www.oecd.org/pisa/pisaproducts/PISA-2018-draft-frameworks.pdf

OECD. (2019). *PISA 2018 results (volume I): What students know and can do.* OECD Publishing. https://www.oecd.org/education/pisa-2018-results-volume-i-5f07c754-en.htm

Oliveira, A. W. (2010). Improving teacher questioning in science inquiry discussions through professional development. *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching, 47*(4), 422-453. https://doi.org/10.1002/tea.20345

Ören, Z., Konuk, S., Sefer, A., & Sarıtaş, H. (2017). Ortaokul Türkçe öğretim programlarındaki metin türleri ile PISA'daki metin türlerinin karşılaştırılması. EJER IV. International Eurasian Educational Research Congress Bildiri Kitabı. Anı Yayıncılık.

Özaslan, A. (2019). *Çeşitli metin biçimleri ve farklı bilişsel düzeylere yönelik sorularla yapılandırılmış okuma eğitiminin okuduğunu anlamaya etkisi* [Unpublished master's thesis]. Pamukkale Üniversitesi Eğitim Bilimleri Enstitüsü, Denizli.

Özen, O. (2020). *Türkçe öğretmenlerinin açık uçlu soru hazırlama becerilerinin incelenmesi* [Unpublished master's thesis]. Atatürk Üniversitesi Eğitim Bilimleri Enstitüsü, Erzurum.

Ralph, E. G. (1999). Developing novice teachers' oral-questioning skills. *McGill Journal of Education/Revue des sciences de lʼéducation de McGill, 34*(001).

Sarar Kuzu, T. (2013). Türkçe ders kitaplarındaki metin altı sorularının yenilenmiş Bloom taksonomisindeki hatırlama ve anlama bilişsel düzeyleri açısından incelenmesi. *Sosyal Bilimler Dergisi, 37*(1), 58-76.

Saruhan, Ş. C., & Özdemirci, A. (2018). *Bilim, felsefe ve metodoloji* (5th ed.). Beta Basım Yayım Dağıtım A.Ş.

Sallabaş, M. E., & Yılmaz, G. (2020). Türkçe ders kitabı'nda bulunan metin altı sorularının yenilenmiş Bloom Taksonomisi'ne göre incelenmesi. *Ana Dili Eğitimi Dergisi, 8*(2), 586-596.

Schleicher, A. (2019). OECD Eğitim Direktörü Andreas Schleicher Ekotürk'te/Feyza Gümüşlüoğlu. [Video dosyası] https://www.youtube.com/watch?v=43VcZM2yhrA

Stahl, R. J., & Murphy, G. T. (1981). The domain of cognition: An alternative Bloom's cognitive domain within the framework of an information processing model. *ERIC Documents Reproduction Service No: ED 208 511*

Şimşek, M., Tuncer, M., & Dikmen, M. (2018). PISA 2015'e katılan öğrencilerin PISA'ya ilişkin görüşleri. *Uluslararası Sosyal Araştırmalar Dergisi, 11*(58), 559-569.

Taşpınar, M. (2017). *Sosyal bilimlerde SPSS uygulamalı nicel veri analizi.* Pegem Akademi.

Tan, Z. (2007). Questioning in Chinese university EL classrooms: What lies beyond it?. *RELC journal, 38*(1), 87-103.

Tankersley, K. (2003). *Threads of reading: Strategies for literacy development.* Association for Supervision and Curriculum Development.

Ülger, Ü. (2003). *İlköğretim 6, 7, 8. sınıflarda Türkçe dersi yazılı sınav soruları üzerine bir değerlendirme.* [Unpublished master's thesis]. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Ülper, H., & Yalınkılıç, K. (2010). Son iki Türkçe programına göre hazırlanann Türkçe ders kitaplarındaki metin sonu sorularının nicel ve nitel görünümü. *Uluslararası Sosyal Araştırmalar Dergisi, 3*(12), 449-461.

Valli, L., & Hawley, W. D. (2002). Designing and implementing school-based professional development. In W. D. Hawley (Ed.), *The keys to effective schools* (pp. 86-96). Corwin Press, Inc.

Wood, A. T., & Anderson, C. H. (2001). The case study method: critical thinking enhanced by effective teacher questioning skills. *In Paper presented at the annual international conference of the 18th world association for case method research & application. (Sweden, June 17–20).* ERIC datebase. (ED455221).

Yeşil, R. & Korkmaz Ö. (2010). A comparison of different teaching applications based on questioning in terms of their effects upon pre-service teachers' good questioning skills. *Procedia Social and Behavioral Sciences, 2*(2), *1075-1082.* https://doi.org/10.1016/j.sbspro.2010.03.151

Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., & Shapley, K. (2007). *Reviewing The Evidence on How Teacher Professional Development Affects Student Achievement (Issues and Answers Report).* U.S. Department of Education, Regional Educational Laboratory Southwest.

Yıldız, D., Ünal, A. V., Bayrakcı, M. R., & Polat, M. (2019). Üst düzey okuduğunu anlama becerileri: Başarı testi geliştirme çalışması. *Eğitim ve İnsani Bilimler Dergisi, 10*(20), 1-22.

Zucker, T. A., Justice, L. M., Piasta, S. B., & Kaderavek, J. N. (2010). Preschool teachers' literal and inferential questions and children's responses during whole-class shared reading. *Early Childhood Research Quarterly, 25*, 65-83. https://doi.org/10.1016/j.ecresq.2009.07.001