Education Quarterly Reviews

Yeler, Mustafa, and Oğuz, Aytunga. (2021), Examination of General Competencies and Needs of Pre-School and Classroom Teacher Candidates in Terms of Assessment and Evaluation Course. In: Education Quarterly Reviews, Vol.4, No.2, 230-248.

ISSN 2621-5799

DOI: 10.31014/aior.1993.04.02.213

The online version of this article can be found at:
https://www.asianinstituteofresearch.org/

Published by:
The Asian Institute of Research

The Asian Institute of Research *Education Quarterly Reviews* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of education, linguistics, literature, educational theory, research, and methodologies, curriculum, elementary and secondary education, higher education, foreign language education, teaching and learning, teacher education, education of special groups, and other fields of study related to education. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Education Quarterly Reviews* aims to facilitate scholarly work on recent theoretical and practical aspects of education.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Education Quarterly Reviews
Vol.4, No.2, 2021: 230-248
ISSN 2621-5799

DOI: 10.31014/aior.1993.04.02.213

Examination of General Competencies and Needs of Pre-School and Classroom Teacher Candidates in Terms of Assessment and Evaluation Course

Mustafa Yeler[1], Aytunga Oğuz[2]

[1] Lecturer, Curriculum and Instruction, Burdur Mehmet Akif Ersoy University, Burdur, Turkey. Orcid: 0000-0001-6558-2812
[2] Prof. Dr., Curriculum and Instruction, Kütahya Dumlupınar University, Kütahya, Turkey. Orcid: 0000-0003-1815-6866

Correspondence: Mustafa Yeler, Curriculum and Instruction, Burdur Mehmet Akif Ersoy University, Burdur, Turkey. E-mail: myeler@mehmetakif.edu.tr

Abstract
This study examines the general competencies and the requirements of classroom and preschool teacher candidates in terms of assessment and evaluation course. The study group consisted of 140 4th-year teacher candidates randomly selected from a total of 256 teacher candidates studying at Classroom Teaching and Preschool departments of Burdur Mehmet Akif Ersoy University Education Faculty, Turkey. In this study, a mixed research approach and a convergent design, in which quantitative and qualitative studies are used to support each other's strengths, were used. To collect quantitative data, the "Measurement and Evaluation Common Competency Perception Scale for Teacher Candidates" (MECCPSTC), which was developed by Nartgün (2008), was used. The qualitative data of the study were obtained thorough the open-ended questions that were asked to 13 teacher candidates through focus group interview technique. In the analysis of the quantitative data, descriptive statistics, t-test and one-way ANAVO were used. Content analysis was used in the analysis of the qualitative data. The findings showed that approximately one fourth of the teacher candidates had the opinion that they were "sufficient and very sufficient" in terms of their learning in the assessment and evaluation course. The scores of three quarters of the teacher candidates obtained from the scale were at "moderate and very insufficient" interval. In addition, it was examined whether there was a significant difference between the scores of teacher candidates obtained from Basic concepts" (BC), "Measurement techniques" (MT), "Statistical analysis and Reporting" (SAT) dimensions, and total score of the scale in terms of age, gender, department and belief in appointment variables. The codes obtained from the analysis of qualitative data were grouped under themes. Each theme was arranged and interpreted in a table with the codes within the scope. The results obtained from the analysis of both quantitative and qualitative data were combined and discussed and recommendations were developed.

Keywords: Assessment and Evaluation Competence, Preschool Teaching, Classroom Teaching, Teacher Competence

1. Introduction

Competence is defined as the knowledge, skills, attitudes and values required to perform a job effectively and efficiently (Ministry of National Education, MEB, 2017). On the other hand, professional competence is generally considered as a set of minimum norms that show what knowledge, skills, qualifications, attitudes and values are required for individuals to successfully fulfill the requirements of a profession (Deakin Crick, 2008; cited in Bulur, 2014).

Teaching profession, as in each profession, requires specific knowledge, skills and competencies. These competencies are defined as the knowledge, skills and attitudes (MoNE, 2006; Şahin, 2004) that teachers should have in order to fulfill their profession effectively and efficiently. As can be understood from this definition, teacher competencies reveal the qualifications that a teacher should have in order to fulfill his duties and responsibilities regarding education in the best way.

Therefore, the competencies that teachers should have at the end of teacher training processes in order to implement the curriculum in the most effective way and obtaining efficient results (MoNE, 2006), are grouped under the headings as personal and professional values-professional development, b. knowing the student, c. teaching and learning process, d. monitoring and evaluating learning and development, e. school, family and community relations, f. curriculum and content knowledge. On the other hand, these competencies are determined as general professional competencies, professional knowledge, professional skills and attitudes and values (MoNE, 2017). In this context, qualification criteria for teacher candidates (TC) to fulfill their responsibilities related to their professions have been defined by drawing the framework of what behaviors teachers should have regarding their profession. TC should be prepared for the profession by gaining knowledge, skills, attitudes and values regarding these competencies in pre-service education. It is aimed for TC to acquire these professional knowledge and skills through courses of field knowledge, teaching profession knowledge and general culture (Council of Higher Education, CHE**,** 1998, 2007 and 2018) in pre-service education processes. One of these basic professional knowledge skill areas that prospective teachers should gain is assessment and evaluation (AE).

In general, while assessment is considered as the process of observing any quality, expressing the results of the observation with numbers or symbols, evaluation is defined as the decision-making by comparing the measurements obtained from the measurement process with a criterion (Turgut, 1990; Tekin, 1993; Baykul, 2001; Tan, 2008; Tekindal, 2009; Özçelik, 2010). In the evaluation phase, defining, explaining and implementing the criterion are decided on the objective value, quality, benefit, efficiency and importance of the evaluation made based on this criterion (Fitzpatrick, Sanders, & Worthern 2011). According to these features put forward regarding the concepts of assessment and evaluation, it can be said that both concepts are dimensions of an integrated process that cannot be considered separately from each other.

Black and William (1998) and Baykul (2001) stated that the aims and functions of AE are the evaluation of the curriculum, evaluation of teaching effectiveness, determination of learning deficiencies, determination of students' interests and abilities, and evaluation of student achievement. On the other hand, according to Popham (1995), AE provides benefits in determining the strengths and weaknesses of students, monitoring students' progress, evaluating classroom learning and placement of students according to determined institutional standards. In this context, AE indicates whether the curriculum achieves the expected results, whether the expected knowledge, skills and attitudes are developed in students; provides the opportunity to continuously monitor the teaching process, to identify and regulate the problems that arise at every stage (MoNE, 2009). The fulfillment of the stated objectives and functions of the AE largely depends on whether teachers perform the AE processes and activities correctly. Therefore, it can be said that AE is an indicator of the effective use of teachers' competencies.

The competences of the teachers in AE includes determining the objectives for the assessment process, determining and developing the measurement tool (test types) appropriate for the purpose, ensuring the reliability and validity of the measurement tools, using basic test statistics and scores, student achievements or

grades (Kubiszyn and Borich, 2003). On the other hand, the competencies that teachers should have in the field of AE are defined by MoNE (2006, 2007) as determining the methods and techniques of AE, measuring the knowledge level of the students by using different measurement techniques, analyzing and interpreting the data, providing feedback on the learning of the student and reviewing the learning and teaching process according to the obtained results.

In the literature, it is seen that there are various studies that address TC and teachers' AE competencies in terms of various variables. Some of these studies focus on Primary School Teaching and conducted by various reesearchers (Birgin, 2007; Gelbal & Kelecioğlu, 2007; Kilmen, Köstereliođlu, & Köstereliođlu, 2007; Birgin-Gürbüz, 2008; Duban & Küçükyılmaz, 2008; Kilmen & Çıkrıkçı-Demirtaşlı, 2009; Pektaş, 2010; Yeşilyurt and Yaraş, 2011; Yaman and Karamustafaoğlu, 2011; Erdoğdu & Kurt, 2012; Yeşilyurt, 2012; Gencel & Özbaşı, 2013; Özenç, 2013; Özbaşı & Çıkrıkçı-Demirtaşlı, 2013; Şahin & Uysal, 2013; Yaşar, 2014; Yaralı, 2017; Sabancı & Yazıcı, 2017), and in these studies TC and teachers' AE competencies were examined in terms of various variables. In these studies, some problems were found in the knowledge and skill levels of TC and teachers in terms of AE, or the participants stated that they regarded themselves as inadequate. On the other hand, (Sezer 2010; Işıkoğlu-Erdoğan & Canbeldek, 2017) conducted studies on the AE competencies of pre-school TC and teachers. However, it is seen that the studies on the AE competencies of Preschool teacher candidates (PTC) and teachers are limited, which is found to be very striking.

In the above-mentioned studies, it was concluded that TC had significant problems and deficiencies in AE competencies in general, and Plake (1993) associated this situation with the inadequacy of pre-service training of teachers. However, since these studies are mostly based on collecting data through questionnaires, the results obtained quantitatively do not give much opinion on the causes of the problem. In addition, in the literature, the studies of PTC and in-service teachers regarding their AE competencies and applications could not be reached, and this situation was considered as an important deficiency for the field in question.

2.Purpose

In this context, the current study examines the general competencies of Classroom Teacher candidates (CTC) and PTC in terms of the basic concepts, measurement techniques, statistical analysis and reporting dimensions in the AE course and their level of fulfilling the requirements of these processes and determining their needs and problems in this regard. In this context, the following questions were sought:

2.1.What is the common competency perception level of TC in terms of assessment and evaluation?
2.2. Is there a significant difference between the scores of the TC obtained from MECCPSPT in terms of gender, department, and belief in appointment variables?
2.3.What are the opinions of TC on their competency levels in terms of AE course?

3.Method

In this study, a mixed research approach (Johnson & Christensen, 2014) and a convergent design, in which quantitative and qualitative studies are used to support each other's strengths, were used for the purpose of examining the general competencies and needs of CTC and PTC in terms of assessment and evaluation course. In this design, the researcher collects qualitative and quantitative data together, but analyzes them separately and compares the findings. In this approach, detailed qualitative information about the perspective of the participants and quantitative scores based on the measurement tool are frequently presented (Creswell, 2014; Creswell & Plano Clark, 2014).

3.1.Participants

The study group of the study consisted of 140 TC randomly selected from a total of 256 TC studying in the fourth grade of Classroom Teaching and Preschool departments of Burdur Mehmet Akif Ersoy University Education Faculty, Turkey. In the study, it was aimed to reach the whole population. However, volunteering was

taken as a basis and only the students who wished to take part in the study are included. Among these TC, 57 of them were studying at Classroom Teacher department. In this group, 19 of them were male and 38 were female. On the other hand, 83 of them were studying at Preschool Teacher department, and 8 of them were male and 75 of them were female.

A total of thirteen TC, five CTC and eight PTC, who were volunteer to take part in the study, were selected in order to obtain qualitative data. Among these students, three were male and ten were female. Based on the expert opinion, the number of the TC was found sufficient for obtaining qualitative data.

3.2.Data Collection Tools

To collect quantitative data on the general competencies of TC, the "Measurement and Evaluation Common Competency Perception Scale for Teacher Candidates" (MECCPSTC), which was developed by Nartgün (2008), was used. The scale consists of three sub-dimensions as "Basic concepts" (BC, 6 items), "Measurement techniques" (MT, 9 items), "Statistical analysis and Reporting" (SAT, 9 items). The scale is 5-point Likert type and the items range between "I am very sufficient" and "I am very insufficient." The internal consistency coefficients for the sub-dimensions of the scale were found as .84, .79 and .77, respectively. The reliability of the overall scale was found as .87. The reliability coefficient for the test-retest application of the scale was .91. For the data obtained from this study, the Cronbach Alpha reliability coefficients of the sub-dimensions of the scale found as α=.88; .90; .88, respectively and it was found as .93 for the overall scale.

Qualitative data in the study, on the other hand, were collected in the form of a focus group interview using a semi-structured interview technique. According to Seidman (1991), interview techniques makes it possible to understand the experiences of people and how they make sense of these experiences, and it is possible to systematically examine the subjective worlds of the individuals (cited in Türnüklü, 2000). Therefore, in this study interview technique was used in order to add depth and richness to the data regarding the general competencies of TC in the field of AE. Based on this, the following questions were addressed to the prospective teachers:

1. How do you evaluate yourself in terms of your knowledge of assessment methods and techniques and your application skills? (In terms of concepts, exam preparation, application, evaluation)
2. In which of the subjects in the AE course do you find yourself adequate and inadequate?
3. To what extent do you think you can reflect the concepts, assessment techniques, tools and other applications you learned in the AE course to your teaching life?
4. Which of the AE methods and techniques do you think you use and/or you will use better?
5. How did you use what you learned in the AE lesson in practice schools?
6. How would you like the AE course to be processed and which applications would you like to be included in order to be more effective?

3.3. Data Collection Process

In order to collect the quantitative data, the scale was applied to TC. Volunteering was taken as a basis and the scale were applied to the TC who were willing to participate in the study.

The qualitative data of the study were obtained thorough the open-ended questions that were asked to 13 TC using focus group interview technique. The focus group interviews were carried out in separate groups with PTC and CTC at different predetermined days and hours. Prior to the interview, TC were informed about the scope of the study. The focus group interviews were conducted in the instructor's office and each session lasted two hours, and in total four hours. In line with the answers given by the TC to these questions, it was aimed to provide depth in the data. Interview processes were recorded with a tape recorder.

3.4.Data Analysis

In this study, it was observed that the quantitative data showed normal distribution and the variances were equal. In this context, t-test and one-way ANAVO among parametric tests were used to analyze the data. The significance level of $p<.05$ was taken as a basis in interpreting the findings.

Content analysis was used for the data obtained through interviews conducted with TC. In this analysis process, similar data are brought together within the framework of certain concepts and themes, and arranged and interpreted in a way that the reader can understand. In this context, in the analysis of the qualitative data, the steps recommended by Yıldırım and Şimşek (2011) were followed. Accordingly, the data were encoded, the themes were found, codes and themes were revised and edited, the findings were identified and the interpreted. During the data analysis process, the interviews on the tape recorder were transcribed with the help of an assessment-evaluation expert besides the researcher. The transcribed data were examined sentence by sentence, and word by word, and coded. Later, the codes were checked by listening to all the recordings in the tape recorder twice. Thus, the determined codes were brought together, gathered under a common theme and interpreted.

For the rater reliability of the findings obtained during the analysis process, Miles and Huberman's (1994) formula of Reliability (Reliability= Agreement/ (Agreement+ Disagreement) x 100 was used. According to this formula, the rate of consistency between codes was calculated as [82 / (82 + 10)] x100 =, 89. In addition, the analyzed data were shared with the participant TC and their confirmation was obtained.

3.5.Validity and Reliability

The following measures were taken for the validity and reliability of the qualitative data:
While preparing the open-ended questions, opinions and assistance were received from two experts in the field of assessment and evaluation, and one expert in the curriculum development in education. During the interviews, the assessment and evaluation expert was also present together with the researcher to benefit from his opinions when necessary. All interviews were recorded with audio recording devices. Focus group interviews took place in the instructor's office in a comfortable environment and in a conversation mood. It was tried to have no impact on the participants and their identities were kept confidential. In the data analysis process, an objective approach was employed in determining the codes and themes, with the help of the assessment and evaluation experts besides the researcher. The identified codes were checked by listening to the interview records twice from beginning to end. The data obtained with the encoder consistency were then confirmed to them after analyzing. Regarding the themes, examples are given with direct quotations from the statements of each participant.

4.Results

In this section, the findings obtained from the study are presented in Tables in accordance with the sub-problems.

Competency level of TC in terms of AE course

The findings related to the competence level of the students in terms of AE course are presented in Table 1.

Table 1: Descriptive Statistic Results for the MECCPSTC

Dimensions	**n**	**x̄**	**ss**
BC	140	2.71	.76
MT	140	2.72	.74
SAT	140	2.79	.72
Total	**140**	**2.74**	**.63**

As can be seen in Table 1, the mean scores of the TC was $\bar{x}$=2.71 for BC dimension, $\bar{x}$=2.72 for MT dimension, was $\bar{x}$=2.79 for SAT dimension. In addition, it was obtained as $\bar{x}$=2.74 for the total mean score of the scale. Accordingly, it was determined that the general competencies of the TC in terms of AE course were at "moderate" level.

Within the second sub-problem of the study, it was aimed to determine whether the scores of the TC obtained from MECCPSPT differ significantly in terms of gender, department, and belief in appointment variables. The findings are presented below separately.

Competency level of TC on AE course in terms of gender variable

Table 2: Independent Samples t-Test Results for Gender Variable

Dimensions	Gender	n	$\bar{x}$	ss	t	df	p
BC	Male	27	2.57	.89	-1.043	138	.299
	Female	113	2.74	.73			
MT	Male	27	2.67	.87	-.436	138	.664
	Female	113	2.73	.71			
SAT	Male	27	2.47	.78	-2.667	138	.009*
	Female	113	2.87	.69			
Total	Male	27	2.57	.76	-1.634	138	.104
	Female	113	2.79	.59			

According to the Table 2, no significant difference was found in the BK, MT dimensions and total mean score according to gender variable [p>0.05], while a significant difference was found in the SAT dimension [p<0.05] in favor of female students. Therefore, it can be said that female TC consider themselves more component in terms of AE course than male TC.

Competency level of TC on AE course in terms of department variable

The results of independent samples t-test conducted to determine whether the scores obtained from the scale differed significantly according to department variable are presented in Table 3.

Table 3: Independent Samples t-Test Results for Department Variable

Dimensions	Departments	N	$\bar{x}$	ss	t	df	p
BC	Preschool T.	83	2.88	.71	3.729	138	.000
	Classroom T.	57	2.47	.79			
MT	Preschool T.	83	2.90	.70	3.153	138	.002
	Classroom T.	57	2.45	.71			
SAT	Preschool T.	83	2.92	.70	3.667	138	.000
	Classroom T.	57	2.60	.72			
Total	Preschool T.	83	2.90	.58	2.644	138	.009
	Classroom T.	57	2.51	.64			

According to Table 3, significant differences was found in the BC, MT and SAT dimensions in terms of department variable [p<0.05]. When the source of the difference was examined, it is seen that the mean scores of the PTC were higher than CTC. Therefore, it can be said that PTC find them more competent in AE course than

CTC.

Competency level of TC on AE course in terms of belief in appointment variable

Table 4 presents t-test analysis results regarding the comparison of the scores obtained from the scale in terms of belief in appointment variable.

Table 4: Independent Samples T-Test Results for Belief in Appointment Variable

Dimension	Belief	n	x̄	ss	t	df	p
BC	Yes	91	2.74	.82	.512	138	.609
	No	49	2.67	.65			
MT	Yes	91	2.72	.72	.100	138	.921
	No	49	2.71	.77			
SAT	Yes	91	2.81	.72	.515	138	.608
	No	49	2.75	.74			
Total	Yes	91	2.76	.66	.419	138	.676
	No	49	2.71	.59			

According to Table 4, no significant difference was found in the BK, MT, SAT dimensions and total mean score according to belief in appointment variable [p>0.05].

Opinions of TC on their competency levels in terms of AE course

Within the third sub-problem of the study, it was aimed to reveal TC' opinions on their competency level in terms of AE course. For this purpose, students were asked to what extent they consider themselves component in AE course. The obtained themes and sub-codes are presented in Table 5.

Table 5: TC' Opinions on The Their Competence Level in AE Course

Themes	Codes
High or very high competency	Defining basic concepts of measurement and assessment
	Knowing the features of the basic concepts
	Knowing the characteristics of test type measurement tools
	Being familiar with the characteristics of alternative assessment
	Knowing the central tendency and distribution measurement

As seen in Table 5, the participants studying in two different departments thought that they were component in AE course in terms of knowing the features of measurement tools (T/F, Short answer, multiple choice, matching, written and oral examination, portfolio, performance, observation form, etc.), knowing the characteristics of test type measurement tools, knowing the characteristics of alternative assessment, knowing the central tendency and distribution measures. For example, P-TC 3 stated that; *" ... I am very happy that the we had AE course. Due to this course, I know the topics such as measurement, standard deviation, range, arithmetic mean, types of evaluation etc."* Similarly, C-TC 5 mentioned that; *"AE course helped me learn the concepts related to measurement better."*

The Opinions of the TC on their incompetency in AE course

It is aimed to reveal TC' opinions on the issues that they find themselves incompetent in terms of AE course. The opinions of the TC on this issue were examined separately. It was also aimed to examine whether preschool

and CTC opinions differ from each other. For this purpose, the opinions of the preschool and CTC were examined in detail and the findings were presented in separate columns in Table 6 below.

Table 6: TC' opinions about the issues that they find themselves incompetent

	f	CTC	PTC	f
Common Codes	5	Preparing and applying measurement tools for Preschool/Primary Education		7
	4	Preparing T/F questions, short answer, multiple choice, matching, written exam, verbal exam, etc		6
	4	Alternative measurement tools (Observation form, rubrics, self, peer and performance evaluation etc.)		6
	3	Writing questions in accordance with the learning outcomes		5
	3	Application of measurement tools		4
	4	Scoring measurement tools		5
Differentiated Codes	4	Establishing the relationship between learning outcomes, related domain and the questions	-	-
	3	Ensuring and determining the appropriateness of question types and expressions for primary school students	-	-
	3	Deciding in which situations product or process-based approaches will be used	-	-

As can be seem in Table 6, CTC and PTC find them incompetent in terms of preparing and applying test types or alternative measurement tools, writing questions in accordance with learning outcomes, scoring measurement tools, performing statistical analysis on the obtained scores and interpreting them. On the other hand, it was obtained that CTC mentioned about some issues that were not stated by PTC. Other than the common opinions stated by both primary and PTC, CTC said that they felt incompetent in terms of establishing the relationship between learning outcomes, related domain and the questions; ensuring and determining the appropriateness of question types and expressions for primary school students and deciding in which situations product or process-based approaches will be used. Some of the opinions of the TC are as follows:

"… I cannot establish the relationship between target level, question type and measurement tool…" (C- TC1, TC3).
"… We can use checklists and rubrics, but we are not very sufficient in preparing them… We can only use existing tools… We can also prepare them by using the indicators of the learning outcomes, but I have no idea how appropriate it will be" (P- CT7).
"… I'm not very good at preparing questions such as true-false, short answer, multiple choice, matching, observation form, rubrics and statistics … There is no application for the field…" (C-TC1, TC5, TC6).
"… We are lacking in adapting measurement tools for preschool period. No sample application has been conducted" (P- TC2, TC5).
"… But I am not competent enough to prepare measurement tools." (C-TC3).
"*Right now, if many TC are asked to prepare true-false, gap filling tests, I do not think that most TC will be able to prepare them according to the qualifications they should have."* (C- TC1).
"… As long as it is not put into practice, the preparation of measurement tools for the product or the process is not a permanent knowledge for us…" (C-TC 5).

As it is understood from the opinions of the participants, they prefer using measurement tools which are prepared by others and appropriate for a certain target level. In addition, it is clear that they do not know how to create and apply them. It is also indicated that they find themselves insufficient or very insufficient in terms of when to apply the process and product evaluation approaches.

Classroom and PTC also mentioned about the reasons that caused them feel incompetent. Their opinions were grouped under three themes as; a. The teaching process of AE courses in the faculty; b. teaching and school practices c. negative examples regarding the applications of AE course. The codes obtained for these sub-themes are presented in Tables 7.1, 7.2 and 7.3, respectively.

Table 7.1: Reasons Caused by Teaching Process of AE Course

	f	CTC	PTC	f
Common Codes	**2**	Inability to establish a relationship between concepts		**2**
	3	Abstract nature of the course		**2**
	3	Being passive in the course		**4**
	2	Surface learning in some topic		**2**
	2	Insufficient content of the AE course taught in the faculty		**3**
	4	Mismatch between course content and the application of this course		**3**
	4	Not being prepared to apply measurement tools in lessons		**4**
	5	No sample practices for Pre School and Classroom Teaching field		**4**
Differentiated Codes	**2**	-Considering that some topics are unnecessary/unimportant	-	-
	3	-Less experienced faculty members in classroom teaching	-	--
	1	- Inadequate knowledge of the instructor to apply the assessment and measurement		
	4	- Desire to just pass the exams	-	-
	3	- Not including/not processing measurement applications classes in special education	-	-

As can be seen in Table 7.1. the teachers stated that some approaches and practices in the teaching of the AE courses in the faculty make hem feel inadequate in this course. In this context, TC stated that the AE courses at the faculty were processed in an abstract way, they were not active in the course, in some topics the learning was very surface-based and not detailed, and the course contents could not be adapted to their field. In addition they thought that the content of the assessment and evaluation course was not sufficient and sample applications could not be made for his fields. It is found that these issues caused both preschool and classroom teacher candidate feel incompetent in term of the knowledge and skills related to AE course.

In the sub-dimension of the teaching of the AE courses in the faculty, the CTC also stated that some subjects in the AE course were seen as unimportant or easily ignored or overlooked by the instructors regarding their departments and fields. They also said that some instructors followed just text-book based teaching style they lacked classroom teaching experience and they did not know how to apply the theoretical knowledge, which also negatively affects the efficiency of the AE course. In addition, they stated that in the courses such as Turkish Teaching, Life Science Teaching, Science Teaching, Mathematics Teaching which are taught within the Classroom teaching department, there were no applications related to AE course content, and further the AE course content was just covered in one of these courses.

Table 7.2: Reasons Caused by Teaching and School Practices

	f	CTC	PTC	f
Com. Codes	4	No opportunity to make practices in schools		5
	3	Measurement activities are not given importance in schools		6
Dif. Codes	-	-	Faculty-School conflict and incompatibility between them	4

In the sub-dimension of Teaching and School Practices, the TC of both departments stated that they were not provided with the opportunity to make practices in schools related to AE topics, they were not asked to do activities on these issues, and even based on their observations they concluded that AE course was not given importance in schools. In addition, in this sub-dimension, PTC, in particular, thought that in some other courses, what they were taught at the faculty was not used in schools, did not work or was used differently, and in this case, they were in a dilemma (Table 7.2).

Table 7.3: Reasons Caused by the Negative Examples Regarding the Applications of AE Course.

Sub-theme	f	CTC	PTC	f
I. In terms of instructors of AE course	3	Not applying the measurement principles and criteria in the classes		4
	4	Not preparing the exams in accordance with the exam preparation criteria		3
	4	Not preparing the exams in accordance with purposes		3
	3	Not applying validity and reliability issues in exams		3
	3	Not using criteria and answer keys		3
	2	Negative scoring approaches (biased/not checking the exam papers in detail)		2
	3	Directing by saying the topics that the questions will be asked about		3
	3	Asking the questions that were asked in previous exams		3
II. In terms of teachers in the practice schools	3	Downloading measurement tools from the internet	-Not paying attention to AE applications	6
	4	Asking the questions in the text books		
	3	Having multiple choice test applications in 1st and 2nd grade primary school students		
	3	Make students compete with each other		
	3	An effort to prepare students for the exams in future years		
	2	Not to take into account the learning outcomes and developmental characteristics of the student		
	2	Making applications that measure the product (level of knowledge), not the process		

As can be seen in Table 7.3. the TC had negative opinions regarding the use of AE course knowledge and skills both in faculties and in practice schools. In this context, TC stated that lecturers of the AE course at the faculty generally do not apply the assessment and evaluation principles, criteria and tools they teach themselves. On this issue, TC said that instructors did not apply the principles of writing questions and preparing measurement tools in their exams, the purpose of using these tools. In addition, they did not pay any attention to validity and reliability issues, determining criteria in scoring, using answer keys and making objective scoring. The TC were also in the opinion that some of the instructors of the AE course guided the students by saying the topics that they would ask in the exam, which shows that the faculty members did not comply with some of the information they taught.

Some examples that reflect the opinions of the pre-service teachers about the reasons that cause them feel incompetent are given below:

"...I did not prepare a measurement tool in school practices, but many of the subjects we covered in AE course are not used in Preschool grade, and so these topics cannot be applied...."(P-TC5)

"...They did not make us prepare measurement tools and make application studies, statistical analysis and evaluation applications." (C-TC3, TC4)

"...The measurement subjects and applications taught us at the faculty in pre-school and applications in the practice school are very different... Which one is correct" (P-TC6)

"...Teachers are not competent about AE course, they do not prepare exams, they download it from the internet, they do not know what and how to evaluate, they do not take into account the characteristics of the students." (C-TC3)

"...In the faculty, the subject of measurement tools and their characteristics is şgenerally covered as the last subject of the measurement courses..." It is already considered as an easy subject, and just the photocopies are used to review the course content, but I think this is wrong. Questions such as true-false, gap-filling, matching, etc. for primary education are important but we cannot learn how to prepare these measurement tools properly. (SS-TC1)

"... They taught the features of multiple choice gap filling, written examination and similar measurement tools both in the faculty and in the classroom, but they do not fit themselves either. For example, the instructor of the measurement course applied a 10-question multiple-choice test, and all correct answers were option A... "C, TC4)

"... In practice schools, teachers only ask us to teach our lessons; they do not expect or want any activity related to measurement from us..." (C-TC3)

"...The teacher tells us that "you will not use any of the courses you take at the university, the kitchen of the job starts when you start working... you will improve in the first 3 years. You just learn teaching mathematics, teaching science, teaching Turkish, you learn how to teach these courses, but you will not use any of them when you start working." (C-TC3)

"... We could not make connections between the topics covered in the classes and the applications we did in the classes, because private education course content is based on preparing a presentation or a report...." (C- TC3).

"... There is some struggle about how to teach in private education classes, but measurement is neglected; connection is not established"(C-TC1, TC5)

TC were asked about the assessment and measurement tools that they plan to use in their professional lives. The findings are presented in Table 8.

Table 8: AE Tools That TC Think to Use in Their Professional Lives

CTC	PTC
• Observation forms	• Observation
• Game	• Portfolio
• Written exam	• Rubrics
• True-false questions	• Game
• Gap-filling	• Checklist
• Matching	• Interviews
• Portfolio	• Project
• Project	• Home visits
• Concept maps	• End-of-activity questions.
• Diversify measurement tools as much as possible	-
• Process assessment	-

As can be seen in Table 8, primary school TC stated that they would prefer using the measurement tools such as game, observation, written exam, true-false, gap-filling, matching, portfolio, project, concept maps, process evaluation and they aimed to diversify measurement tools as much as possible. PTC stated that they would use games, observations, projects, rubrics, individual interviews, home visits and end-of-activity questions. Some statements of TC' on this sub-question is given below:

"I can use observation techniques and I can observe the student in each part of the school" (C-TC8)

"I think I will use end-of activity questions as they help students to reinforce what they learn…" (C-TC3)

"…I want to observe students in the process with games. I think we will not use test type exams as we will be primary school teachers. "(C- TC1)

"…it is better to use games or different measurement tools rather than tests" (C-TC2).

Even if TC of both departments tried to list some measurement tools for product and process evaluation in the theme of the AE tools they intend to use in their professional lives, they could not put forward satisfactory justifications based on "why and how to use them." As a matter of fact, the issue of preparing and applying measurement tools was at the forefront among the subjects that they found "insufficient or very insufficient."

Table 9: Recommendations for Teaching the AE Course at The Faculty

	f	CTC	PTC	f
Common Codes	**2**	Motivating the TC that what is learned in the course is necessary professionally		**2**
	4	Asking TC for preparing measurement tools.		**5**
	4	The course content to be taught should be useful in schools		**6**
	5	Presenting practical information on how to use the information in the course content in Preschool/Classroom Teaching		**6**
Differentiated Codes	**1**	AE course should be taught in two semesters	To have AE course for pre-school	**4**
	1	Teaching research statistics course prior to measuring course		
	2	To use data entry and analysis programs		
	2	University must have a practice school		

Under this theme, the TC stated that it is important to motivate the TC about when to use what they learned in AE course with a common view and understanding, it would be much more beneficial to give the course contents in practice and to ask TC to prepare measurement tools in lessons, which emphasizes that the information to be taught within the scope of the course should be applicable in schools (Table 9).

In addition, PTC recommended that a separate AE course for preschool term should in the curriculum. CTC, on the other hand, stated that the AE course should be given in two semesters, research statistics course should be taught prior to measuring course, data entry and analysis programs should be used in these courses, and university should have a practice school in order for the TC to apply what they learn in the classes. Some statements of the TC reflecting their recommendations regarding the teaching of the AE course in the faculty are given below:

"When I graduate, I will not be able to apply my knowledge properly in the school where I work. … The faculty should prepare me for teaching; teach me how to prepare a test, how to apply. However, I cannot do this. We know the features of the concepts, but these are the information that can be applied in upper classes, not suitable for Preschoolers ..." (P-TC7)

"…There must be consistency between the faculty and the practice schools… We should either apply what we have learned or learn what to apply. We should learn useful topics …"(P-TC6)

"…The theoretical existence of knowledge does not make sense; we should learn useful things" (P-TC5, TC8)

"…AE course we take at the faculty should be oriented towards Preschool, and I should be given a practice like it would be applied in a preschool…" (P- TC8)

"...I think it is necessary to take the research statistics course first and then the AE course...(C- TC1)
"...I do not think about how we can associate AE course with teaching life, where I will use it, so I have only anxiety of passing the course..." (C- TC3)
"...the instructor of the AR course has higher level of knowledge, but he cannot teach the course efficiently. Sample applications should be made for the field of classroom teaching (C-TC4)

Table 10: Misperceptions of TC About AE Course

	f	CTC	PTC	f
Common Codes	**3**	To have the understanding that AE means taking an exam (information assessment-grading)		**3**
	4	To have the understanding that they will learn through trial and error after appointment		**4**
	2	Not considering process evaluation practices as a part of AE		**3**
	4	Considering making practice as solving test questions		**4**
	3	Considering learning the concepts as memorizing		**1**
Differentiated Codes	**1**	Using written exams for student creativity	Considering that assessment subjects are not applicable in Preschool	**6**
	2	To have the understanding that a person who teaches well will conduct better assessment and evaluation	To have the understanding that it is impossible to make evaluation using one learning outcome	**5**
			To think that children cannot do self and peer assessment	**4**
			To think that AE course is not professionally applicable	**6**

As can be seen in Table 10, regarding the misperceptions of TC about AE course, the TC of both departments consider AE as only taking an exam, determining the level of knowledge of the student and giving a grade to the student in return. For this reason, they do not consider alternative evaluation practices regarding the process as a part of AE. In addition, TC in both departments stated that they would solve their deficiencies regarding the AE course through trial and error when they needed it after they were appointed. In addition, it was obtained that they considered solving multiple choice test questions as the application of the knowledge about the course and the way to learn the concepts as memorization.

Apart from this, PTC stated that AE subjects will not be applied at Preschool level since they think that there are no exams in Preschool and therefore Preschool children cannot do self and peer assessment. Some of the opinions reflecting the opinions of the preservice teachers regarding their misperceptions about the AE course are as follows:

"...For example, I wish students could associate the things I taught today with the numbers they learned before. Therefore, I would do the assessment tomorrow, not today. I would do it by relating it with the next learning outcome. I would see if students could remember..."(P- TC7)
"... Preschool children cannot do self-evaluation and peer evaluation. The children are not so aware of themselves yet..."(P- TC6)
"A teacher who teaches in accordance with the leaning outcome correctly in the teaching process can also evaluate very well" (C- TC1)
"Of course, the AE course is important for us ... When we have our own class after appointment; we will learn the missing aspects by trial and error, unfortunately!" (C-TC4)

As the misperceptions of TC about AE, the TC studying in both departments basically experienced confusion of knowledge and perception towards the goals and principles of AE applications, and they considered these practices as only knowledge assessment and grading.

5. Discussion

In this section, the results obtained at the end of the study are first evaluated on the basis of quantitative and then qualitative findings and recommendations are presented.

a. Quantitative Results

It was determined that TC' competencies in BC, MT, and SAT dimensions of and the total mean score obtained from MECCPSTC were at "moderate level." Accordingly, in the studies conducted by Pektaş (2010), Erdoğdu and Kurt (2012); Yeşilyurt (2012) and Sabancı & Yazıcı (2017), who used the same scale in their studies, it was found that TC were "sufficient" in terms of BC and MT dimensions, which contradicts with the findings obtained in this study. However, in this study it was found that TC' competency level was at "moderately sufficient" level in terms SAT dimension. This finding supports the studies conducted by Pektaş (2010); Sabancı and Yazıcı (2017); Erdoğdu & Kurt (2012). Various variables such as university, curriculum, teaching approaches, and student characteristics can be considered for the causes of this situation.

On the other hand, when the frequency and percentage distributions of the answers given by the TC in the study are examined, 21% of them considered themselves adequate in terms of BC; 24% of them considered themselves adequate in terms of MT and 24% in terms of SAT. From this point of view, 23% of the TC considered themselves adequate and very adequate regarding what they learned in the AE course, 37% considered themselves sufficient at moderate level; and 40% of them found them inadequate and very inadequate. Accordingly, those who consider themselves competent constitute a quarter of the total participants. Considering that being competent at moderate level is not an acceptable level for TC, it can be said that three quarters of the TC (about 77%) do not have the general proficiency of AE.

When the AE competencies of the TC were examined according to the gender variable, no significant difference was observed in the scores of the basic concepts, measurement techniques and total dimensions of the scale. Accordingly, it can be thought that there is no difference in the competencies of the TC in the basic concepts, measurement techniques and total dimensions of the scale. This finding shows similarities conducted by Pektaş (2010), Yeşilyurt (2012) and Yaralı (2017).In addition, many studies in the literature reveal that there is no significant relationship between AE competencies and gender variable (Yavuz, 2011; Yaman & Karamustafaoğlu, 2011; Çalışkan, 2012; Şahin & Uysal, 2013; Evin Gencel & Özbaşı; 2013; Çalışkan, Uymaz & Tekin, 2013; Şaşmaz-Ören, Ormancı & Evrekli 2014; Sabancı & Yazıcı, 2017; Yaralı, 2017). However, in this study, a significant difference was found in favor of females in the SAT dimension of the scale. In other words, it can be said that female TC consider themselves more competent in statistical analysis than male candidates. On the contrary, Şimşek (2018), who used the same scale, found a significant difference in favor of females in BC dimension. These results contradict with both the results of the above-mentioned studies and the results of Yeşilyurt (2012), who determined the perception levels of male TC regarding the field of AE at a higher level than female TC. These different and inconsistent results in terms of the gender variable emphasize that other factors related to gender should also be considered.

The findings also showed that there was a significant difference between the AE competence level of TC and department variable in favor of PTC. This finding is similar to the studies (Karaca, 2003; Kilmen, Akın-Kösterelioğlu, Kösterelioğlu, 2007; Karacaoğlu, 2008; Yavuz, 2011; Erdoğdu & Kurt, 2012; Evin Gencel & Özbaşı, 2013) which concluded that CTC' competences in AE is higher than the TC studying in other departments. Among the possible reasons of this result, it may be that there has not been much work in the Preschool field regarding the AE competencies, and the TC in both programs take courses from lecturers who have different characteristics in terms of teaching understanding and approaches. On the other hand, Yaman & Karamustafaoğlu (2011); Şaşmaz-Ören, Ormancı and Evrekli (2014); and Yaralı (2017), no significant difference was obtained between the department variable and the measurement competencies of TC.

A significant difference was not obtained between all dimensions of the scale and TC' beliefs in appointment. In this context, it can be said that beliefs of TC in appointment do not make a difference in terms of competency characteristics in the AE course. However, it may be necessary to examine the reasons that cause the emergence of such a result in TC who are expected to be more competent in order to be appointed to the profession.

b. Quantitative Results

When the data obtained through focus group interviews were analyzed, it was seen that TC stated that they found themselves sufficient in terms of knowing the features of basic concepts of measurement tools, central tendency and distribution measures.

The TC of both programs thought that their adequacy level was low or very low in terms of using measurement tools, creating and applying them in accordance with a specific purpose and learning outcomes; knowing in which situations they will use the process and product evaluation approaches, performing statistical operations and interpreting the scores. In relation to this result, even though Classroom and PTC tried to list the names of some measurement tools within the framework of the AE tools, and they intended to use them in their professional lives, they could not make convincing explanations based on the correct information "why and how to use them." These results support the findings that teachers cannot apply what they know about AE, that their knowledge is not sufficient in determining the methods and techniques apprporiate for the purpose, analyzing and interpreting the data (Ulutaş, 2003; Güneş, 2007 & Karacaoğlu, 2008) On the other hand, they support the findings that teachers are also inadequate in using alternative measurement tools (Acar, 2008; Akdağ, 2011 & Özenç, 2013). In addition, these results are in line with the research results stating that prospective teachers and teachers were inadequate or weak in terms of their AE competencies (Güven, 2001; Çakan, 2004; Gelbal & Kelecioğlu, 2007; Birgin & Gürbüz, 2008; Yaman & Mustafaoğlu, 2011). This shows that the weakness (/insufficiencies) of TC in terms of AE competencies continues to exist as a general "problem." Considered in this context, although CHE (2006) emphasizes "the ability to apply" while defining the content of the AE course in teacher training programs, the fact that CHE (2018) only defined AE in the theoretical dimension in the curriculum also reveals a thought-provoking result in terms of how well pre-service teachers can gain these competencies in the future.

It was also obtained that the issues that TC found themselves inadequate or very inadequate were grouped under three headings as teaching process of the AE course at the faculty, their teaching and school practices, and the negative examples they experience in these two institutions. The TC stated that the AE courses at the faculty is taught in an abstract way. They particularly emphasized that the subjects were not associated with each other, some subjects are not handled in detailed, sample applications could not be made especially regarding the course contents, and they did not participate actively in the lessons. In addition to these, CTC stated that some subjects in the AE course were ignored or they were considered as easy and unimportant by the instructors, some instructors lacked classroom teaching experience and did not know how to apply the theoretical knowledge, which decreased the motivation of TC. In addition, TC stated that in private education courses that are taught in their department (Turkish, Life Science, Science, Mathematics, etc.), the emphasis was given to "how to teach," but AE course content was not given. Considering that AE aims primarily at teaching basic concepts and principles as a common lesson, it is thought that the functionality of the private teaching lessons in both programs should be discussed especially for the application and sample inadequacies for the fields. In summary, these opinions of TC are consistent with the studies of Pilten (2001), who stated that teachers do not believe that they have received sufficient information from their school, and Yaman and Karamustafaoğlu (2011), who stated that the TC did not consider themselves competent in the subjects of AE.

In terms of teaching and school practices, candidates of both programs emphasized that schools were not provided with the opportunity to practice and that they were not asked for doing activities on these subjects. In addition, they argued based on their own observations that there was no emphasis on AE in schools. Another issue that TC stated strongly is that what they were taught at the faculty was not used in schools, did not work or used differently, and in this case they were in a dilemma. This finding supports the ideas of Sağ (2019)

emphasizing that the knowledge learned in the education faculties is not applied in schools.

Another factor that TC cited as a source for their inadequacies is the negative examples of the AE practices they have experienced in faculty and in school practices. They also stated that instructors generally did not implement the principles of preparing exam questions and measurement tools and scoring. In practice schools, PTC said that AE applications were not included and ignored in schools. CTC, on the other hand, stated that teachers in schools applied the measurement tools downloaded from the internet or in the textbooks; that they made students compete with each other in an effort to prepare students for the exams in advanced years (exam-oriented). They also expressed that they did not take into account the learning outcomes and developmental characteristics of the student in these measurement tools used, and that they did multiple-choice tests and knowledge-measuring exams in 1st and 2nd grades of primary school. The TC stated that these practice made the AE course insignificant for them.

In the theme of recommendations for the teaching of the AE course, TC indicated that it would be very beneficial to give "hands-on" course content and to ask them to prepare measurement tools. They stated that it is very important to take care that the lecturers who teach this course should be from Preschool or Classroom teaching department or they should know what is applied in that field. In addition, they wanted the instructors to motivate them about where to use what they have learned within the scope of the course. The TC also recommended that the Research Statistics course should be taught prior to the AE course in Classroom Teaching in terms of forming the basis of the AE course, the AE course should be taught during two semesters, data entry and analysis programs should be used, and there should ve practice school in the university to enable them practice while learning.

Finally, TC in both departments stated their misperceptions about AE course. They stated that they considered AE course only as taking an exam, determining the students' knowledge level and giving a grade to the student in return; and they did not consider process based alternative assessment practices as a part of AE, which reflects very important misconceptions.

Regarding the of TC about AE course, the TC of both departments consider AE as only taking an exam, determining the level of knowledge of the student and giving a grade to the student in return. For this reason, they do not consider alternative evaluation practices regarding the process as a part of AE. In addition, TC in both departments stated that they would solve their deficiencies regarding the AE course through trial and error when they needed it after they were appointed. In addition, it was obtained that they considered solving multiple choice test questions as the application of the knowledge about the course and the way to learn the concepts as memorization. With these points of view, it is understood that TC ignore the issues of aiming to determine the precondition learning or readiness level of students, evaluating the level of learning and the effectiveness level of teaching service, providing educational, vocational and personal guidance services to students (Turgut, 1990; Tekin, 1993; Baykul, 2001). In this context, it should be evaluated as a very striking result that PTC find the AE inapplicable in their field. In addition, they stated that they will solve their own inadequacies regarding the AE course through trial and error after their appointment, they consider solving multiple choice test questions as the application of the knowledge about the course and the way to learn the concepts as memorization, which also highlights different questions that need to be discussed in terms of the candidates' teaching profession and professional competence.

In conclusion, it was determined that TC' AE competencies were generally at moderate level, and three quarters of the participants did not consider themselves sufficient in term of AE course competency. AE courses should be taught in a hands-on manner in each department with the contents appropriate to the characteristics of that field/branch. Considering that AE is a common and basic course, the knowledge and skills gained in this course should be enriched with special education courses in related fields and the functionality of these courses should be ensured. By ensuring faculty-school harmony and integrity within the framework of the "truths and priorities" of science and educational sciences in the practices of teaching staff and teachers in schools, the workforce of these two institutions should be made stronger. The emphasis should be placed on applied trainings that improve the professional competencies of lecturers and teachers in the field of AE, and mechanisms should be established

to encourage the use of the knowledge and skills gained in these trainings in professional processes. It should be considered as a professional requirement that lecturers and teachers should be a "positive model" for candidates in their schools and exhibit encouraging behaviors in this sense.

More time should be allocated to TC for the preparation and application of measurement tools, statistical analysis, and these subjects should be taught both in practice and school practices should be provided with opportunities to use these competencies. The fact that the lecturers who will teach the AE course should have teaching experience in their field and they should help TC to eliminate the problems that TC have about where to use what they learn.

References

Acar, M. (2008). Sınıf öğretmenlerinin yeni ölçme ve değerlendirme yöntemlerine ilişkin yeterlikleri. (Yayınlanmamış Yüksek Lisans Tezi). *Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü*, Ankara.

Akdağ, G. (2011) Fen ve teknoloji öğretmenlerinin ölçme-değerlendirmeye ilişkin yeterlilik algıları ve görüşleri. (Yayınlanmamış Yüksek Lisans Tezi). Adıyaman Üniversitesi Fen Bilimleri Enstitüsü, Adıyaman.

Baykul, Y. (2001). *Eğitimde ve psikolojide ölçme*. Ankara: ÖSYM Yay.

Birgin, O. (2007). Sınıf öğretmeni adaylarının ölçme-değerlendirme konusundaki okuryazarlık düzeylerinin incelenmesi. *16. Ulusal Eğitim Bilimleri Kongresi,* 5-7 Eylül 2007, Tokat: Gaziosmanpaşa Üniversitesi.

Birgin, O. ve Gürbüz, R. (2008). Sınıf öğretmeni adaylarının ölçme değerlendirme konusundaki bilgi düzeylerinin incelenmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 1*(20), 163-179.

Black, P. ve Wiliam, D. (1998). *Inside the black box: Raising standards through classroom assessment.* London: Kings College School of Education.

Council of Higher Education, CHE (2018).https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/yeni-ogretmen-yetistirme-lisans-programlari

Council of Higher Education, CHE, (2016). https://www.yok.gov.tr/kurumsal/idari-birimler/egitim-ogretim-dairesi/ogretmen-yetistirme

Creswell, J.W. (2014). Giriş. İ. Erdoğan (4. Baskıdan çev.). S. B. Demir (Çev. Ed.). *Araştırma deseni nitel, nicel ve karma yöntem yaklaşımları.* (4. baskı). (ss.105-121) içinde Ankara: Eğiten kitap

Creswell, J.W. ve Plano Clark, V.L (2014). Karma yöntem araştırmaları tasarımı ve yürütülmesi. (S.Yaman, Çev.). S. B. Demir (Ed.), *Karma yöntem araştırmalarında veri toplama*. (ss. 183-216) içinde. Ankara: Anı yay.

Çakan, M. (2004). Öğretmenlerin ölçme-değerlendirme uygulamaları ve yeterlik düzeyleri: ilk ve ortaöğretim. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 37*(2), 99–114.

Çalışkan, H., Uymaz, M. ve Tekin, D. (2013). The evaluation of the competency of social studies teachers candidates' regarding measurement and evaluation methods. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi.6(*14),239-261

Duban, N. & Küçükyılmaz, E. A. (2008). Primary education pre-service teachers' opinions regarding to the use of alternative measurement-evaluation methods and techniques in practice schools. *Elementary Education Online,* (3), 769-784.

Erdoğdu, M.Y. & Kurt, F. (2012). The analysis of teacher's competency perceptions on measurement and assessment according to some variables. *Electronic Journal of Education Sciences Elektronik Eğitim Bilimleri Dergisi, 1*(2) 23-36.

Evin Gencel, İ. & Özbaşı, D. (2013) Investigating prospective teachers' perceived levels of competence towards measurement and evaluation. *Elementary Education Online, 12 (1), 190-201:* http//ilkoğretim-online.org.tr

Gelbal, S. ve Kelecioğlu, H. (2007). Öğretmenlerin ölçme değerlendirme yöntemleri hakkındaki yeterlik algıları ve karşılaştıkları sorunlar. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 33*, 135-145

Güneş, A. (2007). Sınıf öğretmenlerinin kendi algılarına göre ölçme ve değerlendirme yeterlikleri. (Yayınlanmamış Yüksek Lisans Tezi). *Marmara Üniversitesi Eğitim Bilimleri Enstitüsü*, İstanbul,

Işıkoğlu-Erdoğan, N. ve Canbeldek, M. (2017). Assessment and evaluation in early childhood education. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 17*(3), 1306-1327.

Jody L. Fitzpatrick, J.L., Sanders, J.R. and Worthen, B. R. (2011) *Program evaluation alternative approaches and practical guidelines (4. Baskı).* ISBN 13: 978-0-205-57935-8

Karaca, E. (2003). Development of a likert type competence perception scale towards measurement and evaluation competencies of teacher candidates. *Dumlupınar Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9, 179-198.

Karacaoğlu, Ö.C (2008). Avrupa Birliği uyum *s*ürecinde öğretmen yeterlilikleri. (Yayımlanmamış Doktora Tezi). *Ankara Üniversitesi Eğitim Bilimleri Enstitüsü*, Ankara.

Kilmen, S. ve Çıkrıkçı-Demirtaş, N. (2009) The perceptions of primary school teachers about their application levels of measurement and. *Ankara University, Journal of Faculty of Educational Sciences, 42*(2), 27-55

Kilmen, S., Akın-Kösterelioğlu, M. ve Kösterelioğlu, İ. (2007). Öğretmen adaylarının ölçme değerlendirme araç ve yaklaşımlarına ilişkin yeterlik algıları, *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 7*(1),117-127.

Kubiszyn, T. & Borich, G. (2003). *Educational testing and mesurement:classroom application and practice* (11th ed.), New York: Harper Collins.

MEB. (2009). Öğretmenlik mesleği özel alan yeterlikleri. Öğretmen Yetiştirme ve Eğitimi Genel Müdürlüğü, http://otmg.meb.gov.tr.

Nartgün, Z. (2008). Measurement and evaluation common competency perception scale for prospective teachers: a validity and reliability study. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 8*(2),377-395.

Okur, M. (2008). 4. ve 5. Sınıf öğretmenlerinin fen ve teknoloji dersinde kullanılan alternatif ölçme değerlendirme tekniklerine ilişkin görüşlerinin belirlenmesi. (Yayınlanmamış Yüksek Lisans Tezi), *Zonguldak Karaelmas Üniversitesi Sosyal Bilimler Enstitüsü*, Zonguldak.

Özbaşı, D. ve Çıkrıkçı-Demirtaşlı, N., (2013). Evaluation of measurement and evaluation skills qualification perceptions of elementary school teachers according to various variables. *Ankara University, Journal of Faculty of Educational Sciences, 46*(2), 25-46

Özçelik, D.A. (2010) *Ölçme ve değerlendirme*. 3.Baskı. Ankara: Pegem A Yayınevi.

Özenç, M. (2013). Determination of levels of primary school teachers' alternative assessment and evaluation knowledge. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi.* 21*,157-178*.

Özenç, M. ve Çakır, M. (2015). Exploring primary school teachers' competencies of alternative assessment and evaluation. *Elementary Education Online, 14*(3), 914-933.

Pektaş, S. (2010). Öğretmen adaylarının ölçme değerlendirme yeterlik algılarının incelenmesi. (Yayınlanmamış Yüksek Lisans Tezi). *Abant İzzet Baysal Üniversitesi Eğitim Bilimleri Enstitüsü,* Bolu.

Pilten, P. (2001). Sınıf öğretmenlerinin eğitimde ölçme değerlendirme alanındaki anlayış ve uygulamalarının değerlendirilmesi. (Yayımlanmamış Yüksek Lisans Tezi). *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü,* Konya.

Popham, W. J. (1995). *Classroom assessment*. Needham Heights, MA: Allyn & Bacon

Sabancı, O. ve Yazıcı, K. (2017). Examining pre-service teachers' efficacy perceptions towards measurement and evaluation. *Trakya Üniversitesi Eğitim Fakültesi Dergisi 7*(1), 128-153.

Sezer, C. (2010). Okul öncesi öğretmenlerinin ölçme değerlendirmeyi kullanma düzeylerinin belirlenmesi**.** (Yayınlanmamış Yüksek Lisans Tezi). ***Ç****anakkale Onsekiz Mart Üniversitesi Sosyal Bilimler Enstitüsü,* Çanakkale.

Şahin, A. E. (2004). Öğretmen yeterliklerinin belirlenmesi. *Bilim ve Aklın Aydınlığında Eğitim Dergisi*, 5, 58.

Şahin, Ç. ve Karaman, P. (2013). Sınıf öğretmeni adaylarının ölçme ve değerlendirmeye ilişkin inançları. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi. 28*(2), 394-407.

Şahin, M. ve Uysal, İ. (2013). Öğretmen adaylarının ölçme değerlendirme konusundaki öz-yeterlik algılarının incelenmesi. *Bartın Üniversitesi Eğitim Fakültesi Dergisi 2*(2), 190–207.

Şaşmaz-Ören, F., Ormancı,Ü. ve Evrekli, E. (2011) Fen ve teknoloji öğretmen adaylarının alternatif ölçme-değerlendirme yaklaşımlarına yönelik öz-yeterlilik düzeyleri ve görüşleri. *Kuram ve Uygulamada Eğitim Bilimleri 11*(3),1675-1698.

Şimşek, E. (2018). General competency perceptions on measurement and evaluation of teacher candidates: Atatürk University Faculty of Theology Example. *Amasya Üniversitesi İlahiyat Fakültesi Dergisi*,11,59-80.

Tan, Ş. (2005). *Öğretimi planlama ve değerlendirme*. Ankara: Pegem Akademi Yayıncılık,

Tekindal, S. (2002). *Okullarda ölçme değerlendirme yöntemleri*. Kocaeli: Evrim yayınevi ve Bilgisayar San. Tic. Ltd. Şti.

Turgut, M.F. (1990). *Eğitimde ölçme değerlendirme metotları*. (7. Baskı.). Ankara: Saydam Matbaacılık

Ulutaş, S. (2003). Genel liselerdeki öğretmenlerin ölçme ve değerlendirme alanındaki yeterlikleri ile ölçme ve değerlendirme ilkelerini uygulama düzeylerinin araştırılması. (Yayınlanmamış Yüksek Lisans Tezi). *Ankara Üniversitesi Eğitim Bilimleri Enstitüsü*, Ankara.

Yaman, S. ve Karamustafaoğlu, S. (2011). Öğretmen adaylarının ölçme değerlendirme alanına yönelik yeterlik algı düzeylerinin incelenmesi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi 44*(2),53–72.

Yaralı, D. (2017). The analysis of teacher candidates'competency perceptions toward measurement and assessment (Example of Kafkas Universty). *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 17*(1),487-504.

Yaşar, M. (2014). An investigation of candidate teachers' attitude towards "measurement and evaluation in education" course in terms of some variables. *Trakya University Journal of Education, 4*(2), 64-83.

Yıldırım, A. ve Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri*. (8.Baskı). Ankara: Seçkin Yayıncılık.

Yavuz, G. (2011). Öğretmen adaylarının öğrenme öğretme süreci ve ölçme değerlendirme alanındaki yeterliklerine ilişkin görüşleri. (Yayınlanmamış Yüksek Lisans Tezi). *Mersin Üniversitesi Eğitim Bilimleri Enstitüsü,* Mersin.

Yeşilyurt, E. (2012). Common competency perceptions of teacher candidates about measurement and evaluation. *Mustafa Kemal University Journal of Social Sciences Institute*, *9*(17), 377-395.

Yeşilyurt, E. ve Yaraş, Z. (2011) Assessment of classroom teacher candidates' perception of knowledge level about measurement and evaluation methods. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi. 12(4),* 95-118.