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The Readiness of Primary and Preschool Pre-Service Teachers' for Teaching Profession in Turkey: A Mixed Methods Research

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Abstract

This study aims to examine the readiness of pre-service teachers for teaching in terms of different dimensions. Among the mixed research designs, combined design in which the priority order of qualitative and quantitative methods is equal was preferred for the study. The participants were 127 pre-service teachers in the Faculty of Education. The research data set was obtained from the Preparedness to Teach Scale. In order to determine to what extent pre-service teachers, feel ready for teaching, two focus group sessions and the pre-service teachers were observed. In the study, it was determined that the pre-service teachers' level of readiness for teaching is at a medium level and the pre-service teachers used technology to attract attention and increase participation. It was observed that the pre-service teachers had problems in choosing appropriate teaching strategies, noticing special learning needs or difficulties, and classroom management.

Keywords: Pre-service teachers, preparedness to teach, teacher training, teaching profession, mixed method research

Introduction

In the century, the main objective of education is to help students acquire the knowledge and skills to keep learning for the rest of their lives in the developing and changing world. The practice of the twenty-first century skills is possible with the foundations laid out in schools. Teachers, who have an important role in schools, must meet a range of educational standards including pedagogical, professional, personality and social norms.

Teachers help start the teaching process that requires deep knowledge and understanding for students and the skill of synthesizing, practicing and implementing information in different conditions (Hollins, 2011). The teacher should support not only the development of the academic knowledge and skills of students, but also suggest different ways for them to improve themselves. Identifying teaching skills and knowledge which guide the professional development of teachers is considered crucial in terms of determining successful teaching techniques and unveiling learning activities with clear goals (Organisation for Economic Cooperation and Development [OECD], 2005). In this context, teacher qualifications in the professional sense are defined as knowledge, skills and attitudes that teachers must have in order to provide service efficiently (Ministry of National Education [MoNE], 2017).

It is very important to train effective, qualified and devoted teachers for future learners to achieve academic success since teacher qualifications are an important component in students' success and other education outcomes (Cochran Smith & Power, 2010; Rajić, Hoşgörür & Drvodelić, 2015). The most important way to get pre-service teachers ready to teach is to have a well-designed and strong teacher training program (Brown, Lee & Collins, 2015; Wilson, Floden & Ferrini Mundy, 2002). During the teacher training process that requires planning, pre-service teachers must be prepared to master basic learning, pedagogy and evaluation subjects (Darlin Hammond, 2000; Hollins, 2011). In recent years, pre-service teacher training has been examined to improve the quality of teachers, and pre-service teachers' readiness to the teaching profession has been studied. Different approaches, indicating the quality of teacher training, are, in this context, emphasized in teacher training for individuals with different learning characteristics (Cochran Smith & Power, 2010; Darling Hammond, Chung & Frelow, 2002).

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Conducted studies show that the education on training effective and qualified teachers is inadequate (Peske & Haycock, 2006), that the relationship between the training of pre-service teachers and what schools expect are incompatible (Adamson, 2012), and that teachers are not qualified for pre-service training and do not feel prepared for the teaching process (Ataş-Akdemir, 2019; Aybek & Aslan, 2019; Blomberg & Knight, 2015; Brown et al., 2015; Fontaine, Kane, Duquette & Savoie-Zajc, 2011; Karakaya, Uzel, Gül & Yılmaz, 2019; Liston, Whitcomb

& Borko, 2006). The strongest part of these studies is about the fact that effective and qualified teacher training increases student success (Beare, Torgerson, Marshall, Tracz & Chiero, 2012; Cochran Smith & Power, 2010; Feuerstein, 2011). In this context, many researches show that teachers' training and therefore the characteristics of teacher performance significantly contribute to the achievements of students (Feuerstein, 2011; Goldhaber, Liddle & Theobald 2013; Hattie, 2009; Ramsey, 2000; Rowe, 2004; Wenglinsky, 2002).

Creating and encouraging learning environments that include activities that support students' learning will be possible with a dynamic and interactive process created by teachers (Seidel & Shavelson, 2007). It is thought that teachers' encouragement of desired educational outcomes is related to how ready they are for the profession (Atteberry, Loeb & Wyckoff, 2015). The practical lessons that teachers take during their undergraduate years when they prepare for the profession are very important for them as they give them the chance to experience many different variables. In this context, the process of gaining experience in practice schools is considered as the first step in the practice of teaching knowledge for pre-service teachers. Pre-service teachers' performance in the teaching process increases with the experience they gain before entering the teaching profession (Harris & Sass, 2011). Teaching practice and school experience courses are important in terms of teacher training programs which contribute to the understanding of pre-service teachers by indicating the difference between theory and practice. The importance of pre-school and primary school teachers, who form the basis and the first step of formal education of these hands-on courses, is undeniable because pre-school and primary school education is where the basic knowledge and skills are obtained and social values are gained as well as where children take the first steps of understanding themselves, their environment and the society. In this context, it is aimed to measure the readiness of pre-service teachers in primary education departments to teach in pre-service education in terms of observing their practical practices, such as teaching practices, and of their theoretical knowledge via examining the perception of pre-service teachers for their academic process through interviews. The research has an important place in terms of revealing the nature of teacher education and determining the areas where pre-service teachers are missing. It is also thought that the research will be supportive in the development and improvement of teacher training programs.

Purpose of Research

The aim of this study is to examine the readiness of pre-service teachers for teaching in terms of different dimensions. For this purpose, answers for the following questions were sought:

1. On the preparedness of pre-service teachers for teaching:
- Is there a significant difference in total average scores based on section variables?
- Is there a significant difference in subfactor scores based on the section variable?
2. What is pre-service teachers' level of preparedness to teaching in terms of different departments?
- What is pre-service teachers' level in forming an effective learning atmosphere in terms of different departments?
- What pre-service teachers' level in designing the instructional process in terms of different departments?
- What is pre-service teachers' level on techno-pedagogical competency in terms of different departments?
- What is pre-service teachers' level on understanding the learner in terms of different departments?
3. What kind of behaviors are observed in the process of pre-service teachers' preparedness to teach?

Method

Research Model

The study used a simultaneous mixed research method involving both qualitative and quantitative research methods. This study preferred "combined design", the most common one among the mixed research patterns in which the priority order of qualitative and quantitative methods is equal (Creswell, 2017). The schematic view of the research pattern is shown in Figure 1.

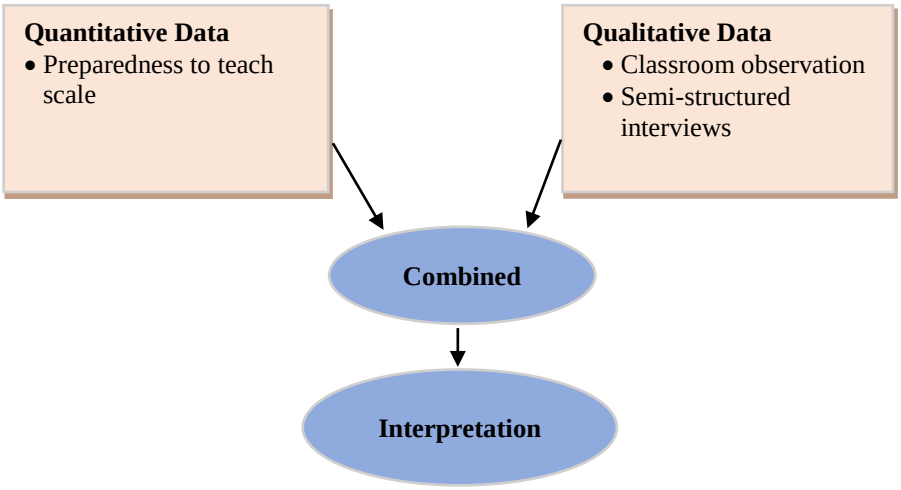

Figure 1. Schematic view of the research pattern (Creswell, 2017)

As shown in Figure 1, while using the combined design in a research, results from qualitative and quantitative data are kept apart during the analysis, then results are combined with general comments. The combined design is more functional than other designs in terms of effectively collecting data and identifying research problems both as qualitative and quantitative, allowing the consideration of a problem's different perspectives by combining the data obtained by means of qualitative and quantitative methods. (Creswell, 2017; Ivankova & Kawamura, 2010; Silverman, 2013).

Quantitative Part

The quantitative part of the research was based on the survey model (Karasar, 2012) which aims to portray existing conditions as they are. In this context, pre-service teachers' preparedness to teach and the examination of this situation according to variable of department were carried out.

Qualitative Part

The qualitative part of the research was based on the case study design (Yıldırım & Şimşek, 2013) in order to examine the quantitative results in detail and in the context of real life. Within the scope of the case study approach, the perspectives and observed behaviors obtained from the pre-service teachers, who were selected by means of purposeful sampling and criterion sampling methods and of focus group interview questions and observation forms prepared by the researchers in accordance with the content of the scale, were examined.

Research Group

Quantitative Research Group

The research group is formed by a total of 127 pre-service teachers studying in the Primary Education Department of the Faculty of Education at a public university in the 2019-2020 academic year. The purposeful sampling method was used in the selection of pre-service teachers. In special cases bearing certain criteria and characteristics, use of this sampling method is recommended (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2014). In this study, the pre-service teachers in the primary education department who were in the senior year were chosen as a research group. The features of the research group are included in Table 1.

Table 1. Research group

Gender	**Primary School Teaching**		**Pre-school Teaching**	
	N	Frequency	N	Frequency
Female	48	37,8	61	48,0
Male	12	9,5	6	4,7
Total	60	47,3	67	52,7

When Table 1 is examined, it is seen that 60 (12 male and 48 female) Primary School and 67 (6 male 61 female) Pre-school pre-service teachers participated in the research.

Qualitative Study Group

The stratified purposeful sampling method was used for the interviews carried out within the purpose of the research. This type of sampling is used to demonstrate, identify, and enable associations between relevant subgroups (Büyüköztürk et al., 2014). The interviews were held with 16 pre-service teachers at the senior level of primary and pre-school teaching taking the "Teaching Practices I" course. Thus, it was aimed to obtain different opinions from the pre-service teachers who had the opportunity to participate in classes directly. The genders of the interviewed participants are included in Table 2.

Table 2. Interviewed participants

Pre-service teachers	**Gender**	**Pre-service teachers**	**Gender**
Pri-P_1	F	Pre-P_1	M
Pri-P_2	F	Pre-P_2	F
Pri-P_3	M	Pre-P_3	F
Pri-P_4	F	Pre-P_4	M
Pri-P_5	F	Pre-P_5	F
Pri-P_6	F	Pre-P_6	F
Pri-P_7	M	Pre-P_7	M
Pri-P_8	M	Pre-P_8	F

Pri-P: Participant primary school teacher, Pre-P: Participant pre-school teacher

As seen in Table 2, 10 of the pre-service teachers who participated in the interviews were female and 6 were male. In addition, the observed pre-service teachers were selected among the pre-service teachers participating in the focus group interview according to the criterion sampling method. Within the scope of the Teaching Practices course for primary school teachers, different socio-economic levels of the practice schools and different academic levels of the practice classes were determined as a criterion. For the pre-school pre-service teachers, in addition to the socio-economic level of the schools, age groups were also determined as criteria. The pre-service teachers observed during the research process were given in Table 3.

Table 3. Observed participants

Pre-service teachers	**Gender**	**Pre-service teachers**	**Gender**
Pri -P_2	F	Pre-P_1	M
Pri -P_3	M	Pre-P_2	F
Pri -P_5	F	Pre-P_6	F
Pri -P_7	M	Pre-P_8	F

4 (2 females, 2 males) of the participants are primary school teachers and 4 (3 females and 1 male) of them are pre-school pre-service teachers.

Data Collection Tools

In the study, the quantitative data were obtained by using the Preparedness to Teach Scale which was used to determine how prepared pre-service teachers felt to the teaching profession. Focus group interviews were used to thoroughly examine the perspective of the pre-service teachers in the collection of the qualitative data, whereas in-class observations were used to determine the skills of the pre-service teachers presented during practices. Detailed information about these data collection tools is presented in subheadings: qualitative and quantitative data collection tools.

Quantitative Data Collection Tools
Preparedness to Teach Scale

The original scale was developed by Darling Hammond et al. (2002), and adapted to Turkish by Yıldırım & Kalman (2017). The scale contains a total of 20 items and consists of a four-factor structure. These factors are: "Forming an effective learning atmosphere", "Designing the instructional process", "Techno-pedagogical competency" and "Understanding the learner". There are no negative items coded in reverse on the scale rated as 5-point Likert. The minimum possible score from the scale is 20, whereas the maximum score is calculated as 100.
Yıldırım and Kalman (2017) calculated the Cronbach's Alpha reliability coefficient as .923 based on the total score of the Preparedness to Teach Scale. In this study, the Cronbach's Alpha reliability coefficient is .965. In the sub-factors, it was calculated as follows: α=.895 for 'Forming an effective learning atmosphere', α=.921 for 'Designing the instructional process', A=.909 for 'Techno-pedagogical competency' and α=.817 for 'Understanding the learner'.

Qualitative Data Collection Tools
Focus Group Interview

The focus group interview technique was used to examine the perspective of pre-service teachers on their preparedness to teach. This technique was preferred because a group dynamic can be found, and additionally the data obtained through social interaction is deep and rich (Thomas, McMillan, McColl, Hale & Bond 1995). Focus group interviews were conducted at different times, with two different groups which consist of eight primary school pre-service teachers and eight pre-school pre-service teachers This number is considered ideal for focus group interviews in the field type (Edmunds, 1999).

In the study, for the focus group interview, firstly the topics were sorted by importance; then, the characteristics of the participants, the common characteristics of the individuals, the main topics to be used in the interviews, and the questions were determined. Questions are included in Appendix B. One of the researchers participated in focus group interviews as a moderator, leading to the discussion. Another researcher listened to the interviews carefully and asked additional questions if needed, allowing the participants to express their perspective more clearly. The data obtained from the interviews were summarized, analyzed and reported.

Observation

Observation is used to define any teaching behavior in more detail. Observation in qualitative research allows the researcher to make deep and detailed explanations of the event, case or situation which are the subject of a research (Yıldırım & Şimşek, 2013). Additionally, observations also make the control of data from interviews and surveys (Patton, 2014). It is thought that participants being in their own natural environment is significant in terms of uncovering observed behaviors objectively and identifying the unspoken information through actions (Karasar, 2014; Patton, 2014).

In order to determine how prepared pre-service teachers felt to teach themselves, an observation form was created using the subdimensions of the "Preparedness to Teach Scale" adapted to Turkish by Yıldırım and Kalman (2017). The first section contains items on the school, class level, the number of students, observation date and time, whereas the second section contains items about the preparation of the pre-service teachers for teaching. The third part of the form is designed in a "description section" to make detailed descriptions of how observed behaviors are performed. In the observation form, behaviors are structured as triple ratings: "Observed" (2) "Partially Observed" (1) and "Not Observed" (0).

When the physical characteristics of the practice classes for primary school pre-service teachers were examined, it was observed that the classroom layout was prepared in a traditional method, that students sat in pairs, that the class population varied between 28-38 students, and that technological tools and equipment (computer, printer, smart board, speaker, projection) were available within the classroom. In the classrooms where pre-school pre-service teachers carried out the practice courses, it was seen that different learning centers (music, science, blocks, etc.) were placed in a single room, that the classroom population varied between 20-25 students, that classes had portable tables, and that chairs, and technological tools (computers, printers, speakers, projections) were available.

Data Collection

All the data obtained from the research were collected during the 2019-2020 academic year.

Collection of Quantitative Data

The quantitative data collected for the research was obtained during a 15-minute practice, and the participating pre-service teachers were chosen among volunteers.

Collection of Qualitative Data

The focus group interviews were formed as two separate sessions for primary school and pre-school pre-service teachers, with sessions lasting averagely between 30-40 minutes. The pre-service teachers were asked five questions determined by using the scale sub-dimensions for their preparedness to teach. During the focus group interviews, new ideas were led to emerge, the discussion was not taken off the point and the participants' in-depth perspectives were learned.

The observation process in the study was carried out within an eight-week period within the scope of the Teaching Practice I course, in two different schools (one primary school, one kindergarten) and four different classes (two primary schools, two pre-schools) in total. The days of observation were determined with school principals and teachers' cooperation. The observations were carried out simultaneously and independent from each other as non-participatory observations by two researchers who specialized in the field of education. Non-participatory observation is the type of observation in which the researcher is not involved and is only an observer and in which his/her identity, the research and the duration are clear (Ekiz, 2003). In the research, a systematic approach was aimed to be adopted in terms of teaching principles; so, the commute language was portrayed by a structured observation form. Configurated observations offer a better configuration and systematic approach on the observant (Büyüköztürk et al., 2014).

Data Analysis

The analysis of the quantitative data collected from the Preparedness to Teach Scale was conducted with SPSS. The arithmetic averages and standard deviations of the scores obtained from the scale were calculated by conducting a descriptive analysis to determine pre-service teachers' preparedness to the teaching profession. In addition, the independent t-test was performed to determine the state of the differentiation of the conditions of preparedness for teaching due to the normal distribution of the quantitative data.

Qualitative opinions from the focus group interview were analyzed according to content analysis with the MAXQDA Analytics Pro 2020 program. Combining, organizing and interpreting common opinions (codes), which are similar to content analysis used to access concepts and associated links from acquired qualitative data, were aimed.
To ensure content and face validity in the research, questions from focus group interviews and observation forms were evaluated by a total of six academics (two from educational sciences, two from Turkish education, one from pre-school education and a primary education specialist) in terms of appearance, content and clarity. The final qualitative data collection tools were formed by making necessary corrections in accordance with expert opinions.

It was attempted to express the results of the data with a clear language in a systematic way for the verifiability of the research. Direct excerpts were used to reveal the perspective of the pre-service teachers participating in the research to meet the transmissivity criteria of the research. In the quotations, Pre-P_1 (Participant- Pre-school Teaching) and Pri-P_1 (Participant- Primary School Teaching) codes were used instead of real names. The questions in the observation form and in the focus group interview were resolved by the researchers as well as by another expert in order to contribute to the credibility of the research, and then the results were evaluated together and it was found that there was no divergence. There was no disagreement between the evaluators that could affect the outcome. The credibility calculated by Miles & Huberman's (2015) reliability formula (Reliability = Consensus \ [Consensus + Disagreement] *100] was 86%. Reliability over 70% is considered to be reliable for a research (Miles and Huberman, 2015).

Findings

Under this heading, the readiness level of the pre-service teachers for teaching was examined as separate headings within the framework of the sub-problems of the research.

Findings Concerning the First Sub-Problem

Statistical information showing the preparedness levels of the pre-service teachers on a departmental basis is given in Table 4.

Table 4. Statistical information showing how pre-service teachers are prepared to teach

	N	Highest Score	Lowest Score	$\bar{x}$	Sd
Preparedness to Teach	127	99	30	71.12	16.88

When table 4 is examined, it is observed that the average values calculated over the total score gained by the pre-service teachers from the Preparedness to Teach scale are $\bar{x}$=71.12 and that the standard deviation values are Sd=16.88. The average scores of the pre-service teachers' Preparedness to Teach as low, medium and high were determined by plus-minus .5 standard deviation (X±.5xSd) criterion (Çamlıbel Çakmak, 2012). According to this calculation, 62 and lower scores were calculated as low, scores from 63-80 were calculated as moderate, whereas 81 and higher scores were calculated as high. Accordingly, it can be said that the pre-service teachers' preparedness to teach is moderate.

When the primary school pre-service teachers' preparedness to teach is checked, 16.6% were rated low; 56.7% were rated moderate; 26.7% were rated high. Also, 28.4% of the pre-school pre-service teachers were rated low; 40.3% were rated moderate; 31.3% were found to be highly prepared for teaching. Focusing on all of the pre-service teachers who participated in the study, 23% were rated low; 48% were rated moderate; and 29% were rated as highly prepared to teach. The examination of the pre-service teachers' preparedness to teach according to the departmental variable was given at Table 5.

Table 5. T-Test results according to departmental variable of pre-service teachers' readiness to teach

Preparedness to Teach	**Department**	**N**	$\bar{x}$	**Sd**	**T**	**Sd**	**P**
Forming an effective learning atmosphere	Primary School Pre-Service Teachers	60	21.38	5.36	.725	125	.470
	Pre-school Pre-Service Teachers	67	20.70	5.22			
Designing the instructional process	Primary School Pre-Service Teachers	60	22.30	5.21	1.166	125	.246
	Pre-school Pre-Service Teachers	67	21.13	5.96			
Techno-pedagogical competency	Primary School Pre-Service Teachers	60	17.85	4.89	.810	125	.420
	Pre-school Pre-Service Teachers	67	17.13	5.04			
Understanding the learner	Primary School Pre-Service Teachers	60	11.10	2.20	.683	125	.496
	Pre-school Pre-Service Teachers	67	10.80	2.60			
Total	Primary School Pre-Service Teachers	60	72.63	16.08	.952	125	.343
	Pre-school Pre-Service Teachers	67	69.77	17.57			

From Table 5, it is understood that there is no significant difference between the overall average scores and sub-dimensional average scores of the primary school pre-service teachers and pre-school pre-service teachers ($p>.05$). When looking at the average overall total and sub-dimension scores in the Preparedness to Teach Scale, the average score of the primary school pre-service teachers is higher than that of the pre-school pre-service teachers.

Findings Concerning the Second Sub-Problem

The qualitative findings obtained from the perspectives of the pre-service teachers through focus group interviews were given. Themes and codes obtained from private interviews with the primary school and pre-school pre-service teachers were modeled and presented with the MAXQDA program on the same figure. The aim of presenting both on the same model is to compare the perspective of pre-service teachers and to reveal similarities and differences clearly. In this context, the interview data of the research was given in a complementary and supportive manner of the rest of the research's data. In addition, the codes the most/frequently stated by the pre-service teachers are specified with dark colors in the model.

The model of the skills which the preschool pre-service teachers wanted to develop in students is included in Figure 2.

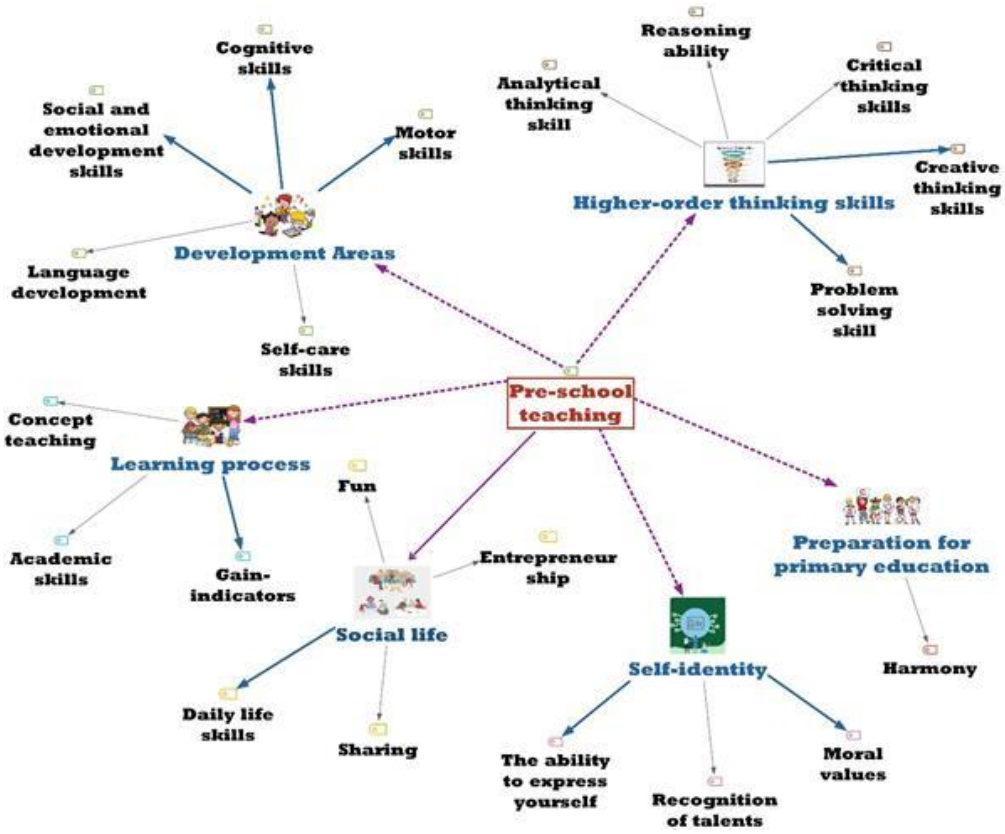

Figure 2. Skills that preschool pre-service teachers wanted to develop in students

The model of the skills which the primary pre-service teachers wanted to develop in students is included in Figure 3.

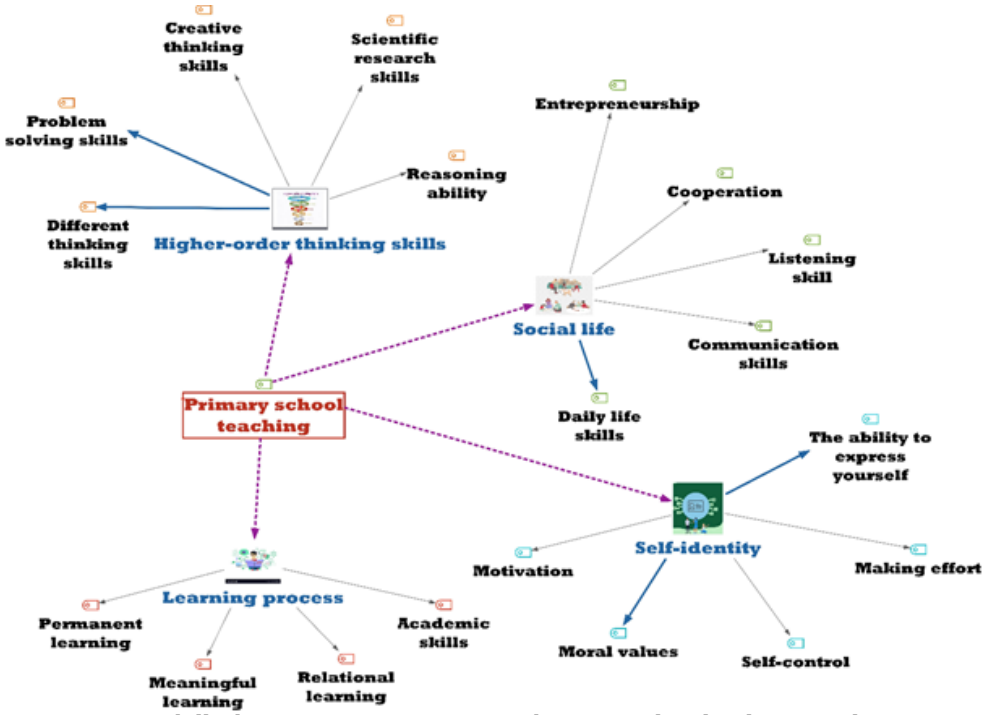

Figure 3. Skills that primary pre-service teachers wanted to develop in students

In Figure 2 and Figure 3, it is seen that the primary school and pre-school pre-service teachers mostly indicated *daily life skills* under the title of "social life", *creative thinking skills* and *problem solving skills* under the title of "higher-order thinking skills", *moral values and the ability to express yourself* under the title of "self-identity" while describing the skills they wanted to develop in students. In addition, *entrepreneurship* under the title of "social life", *reasoning ability* under the title of "higher-order thinking skills", *academic skills* under the theme of "learning process" were encoded less by the primary school and pre-school pre-service teachers. The primary school pre-service teachers drew attention to the development of *different thinking skills* in students, whereas the pre-school pre-service teachers indicated on the *gains, indicators and development areas* mentioned in pre-school teaching program. The examples of direct quotations from the perspectives of the pre-service teachers with featured codes are presented below:

> "First of all, I aim to develop moral skills... I want to develop their skills to be a good person, a good friend, a good child and a good citizen." (Pri-P_5)
>
> "... I think it is necessary to support all development areas of students by adding something to every area." (Pre-P_2)

The points that the preschool pre-service teachers cared about in designing the education process are shown in Figure 4.

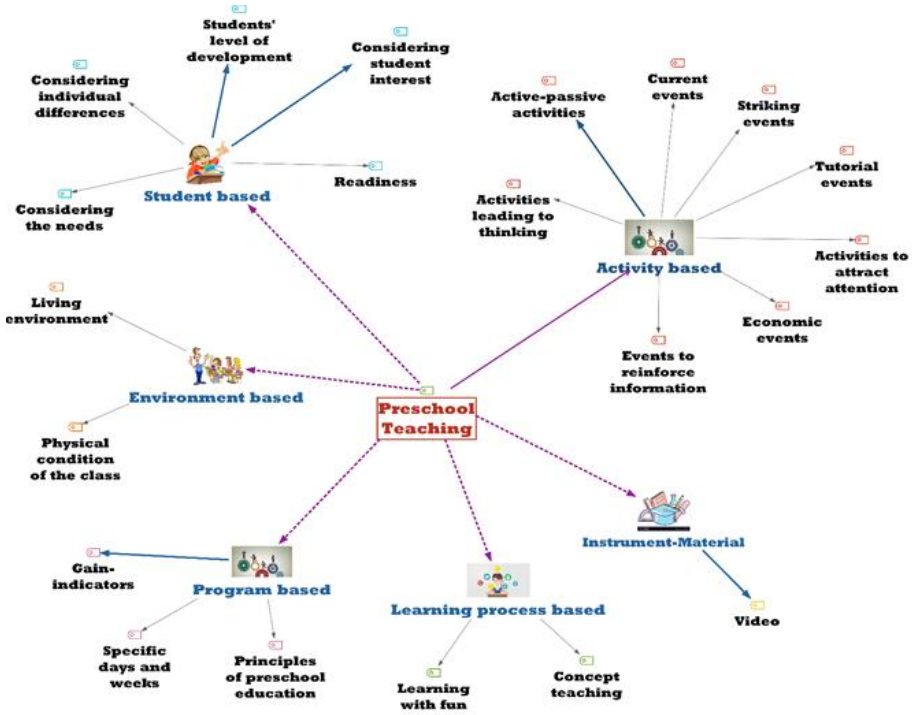

Figure 4. Points that preschool pre-service teachers cared about in designing the education process

The points that the primary pre-service teachers cared about in designing the education process are shown in Figure 5.

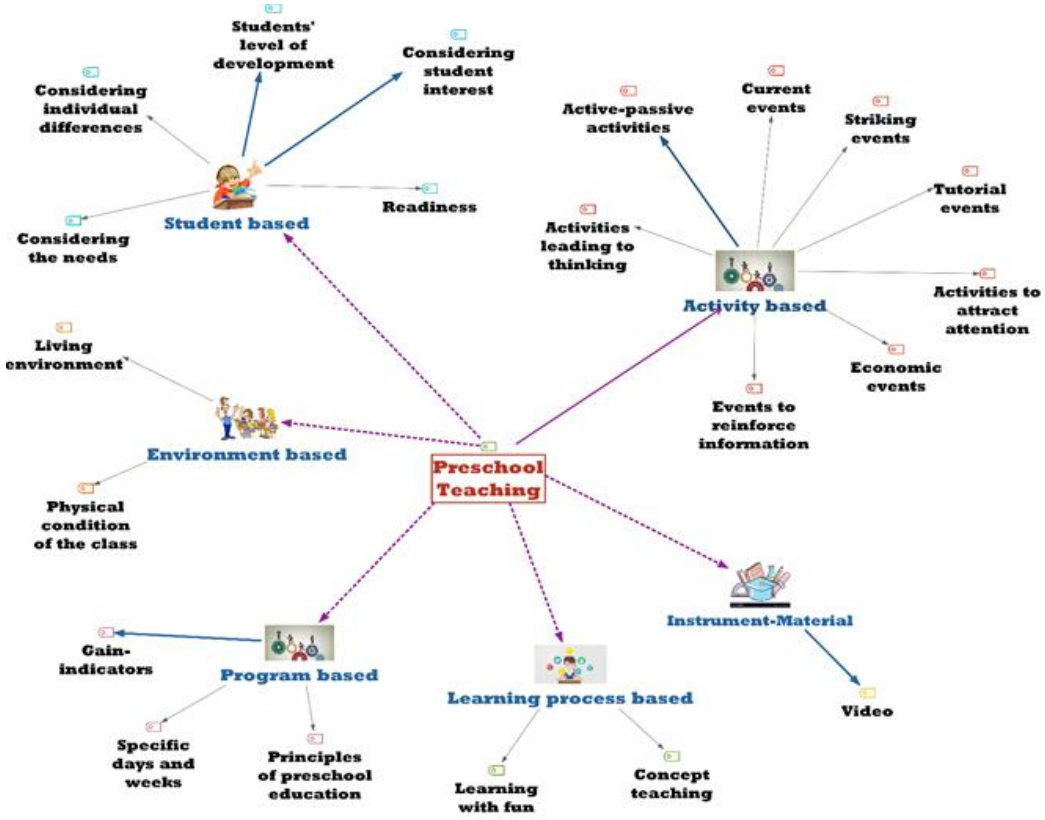

Figure 5. Points that primary pre-service teachers cared about in designing the education process

In Figure 4 and Figure 5, it is seen that the students rely on *Activities and Measurement-evaluation activities* under the title of "Activity based" in designing the education process. In addition, it is understood that the primary school pre-service teachers used *videos, images* and *materials* in this process. Besides, the pre-school pre-service teachers were relying on *considering students' level of development and interest* under the title of "Student based", *Gain indicators* under the title of "Program based" and *videos* under the title of "Instrument material". The examples of direct quotations from the perspectives of the pre-service teachers with featured codes are presented below:

> "I use activities that require active participation of students. With such activities, they will learn by doing and experiencing; so, what they learn will stay permanent in their minds." (Pri-P_3)
>
> "I think it is very important to establish the active-passive balance in the distribution of activities during the day...Children should not feel too tired or too bored." (Pre-P_5)

The preschool pre-service teachers' focus points about program outcomes are shown in Figure 6.

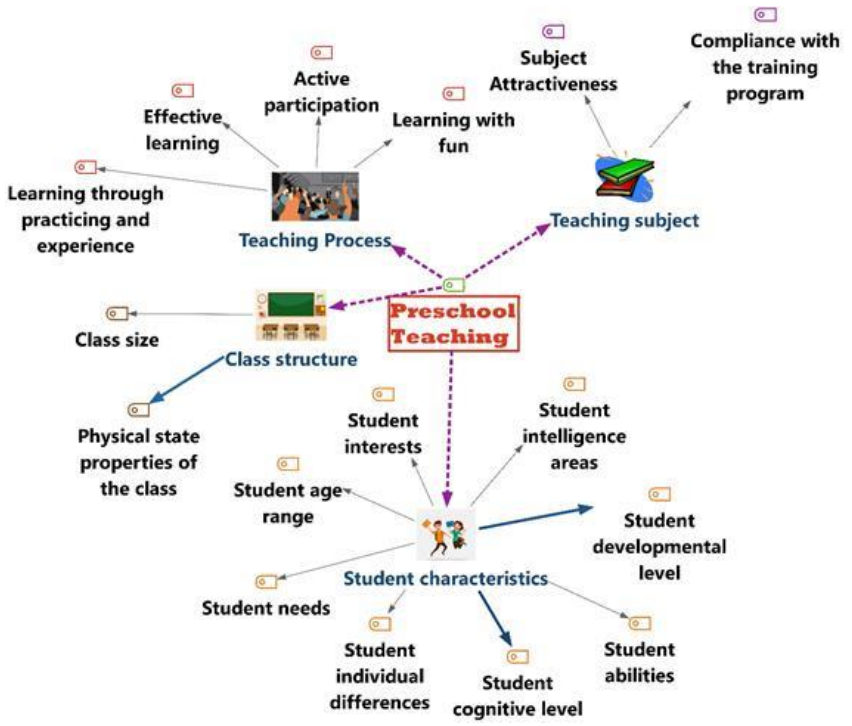

Figure 6. Preschool pre-service teachers' focus points about program outcomes

The primary pre-service teachers' focus points about program outcomes are shown in Figure 7.

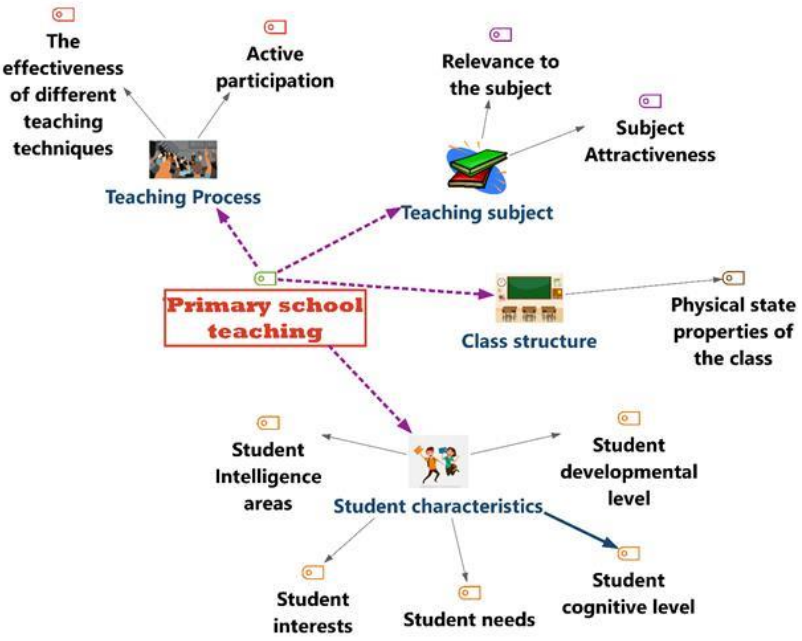

Figure 7. Primary pre-service teachers' focus points about program outcomes

In Figure 6 and Figure 7, it is seen that the primary school and pre-school pre-service teachers emphasize more on *developmental and cognitive levels of students* under the title of "student characteristics" to achieve the educational program outcomes of their students. It was determined that *class size* under the title of "Class structure", *student needs, intelligence areas and interests* under the title of "Student characteristics" and *subject attractiveness* under the title of "Teaching process" were less encoded according to the pre-service teachers' opinions. *Relevance to the subject* under the title of "teaching subject" in the opinions of the pre-service teachers and *Physical state properties of the class* under the title of "class structure" were stated by the pre-school pre-service teachers as the focus point they paid attention to in order to achieve the educational outcomes. The examples of direct quotations from the perspectives of the pre-service teachers with featured codes are presented below:

> "To achieve the outcomes, I first try to understand students' level of development. Then, I'll make the course more interesting according to their needs and make them curious." (Pri-P_6)
>
> "... I pay attention to the physical properties of the classroom. The classroom size limits me in terms of using some methods and techniques." (Pre-P_6)

The preschool pre-service teachers' technology usage during the class is included in Figure 8.

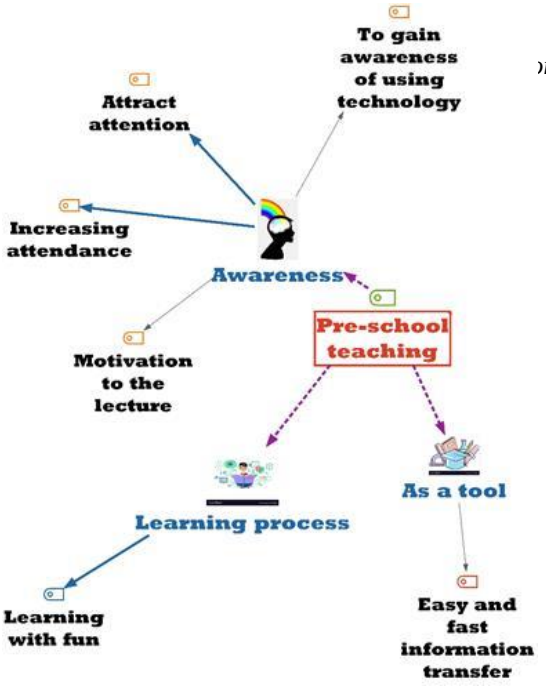

Figure 8. Preschool pre-service teachers' technology usage during the course

The primary pre-service teachers' technology usage during the class is included in Figure 9.

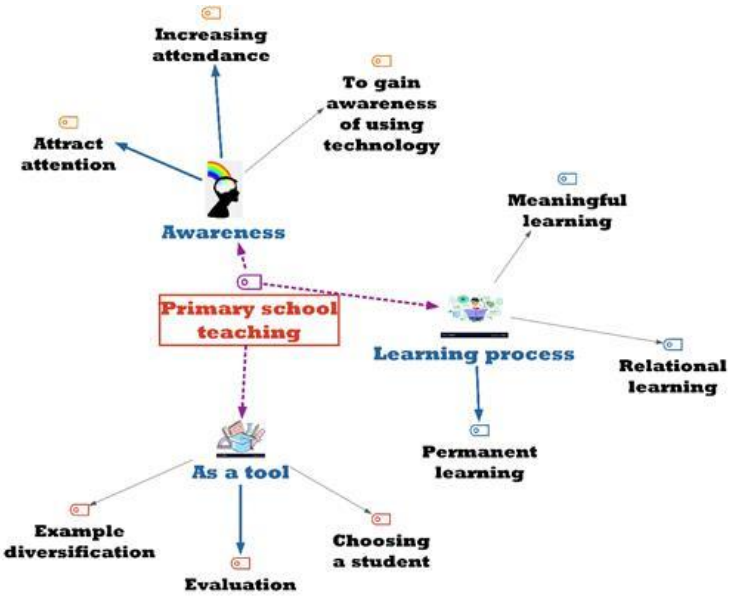

Figure 9. Primary pre-service teachers' technology usage during the course

In Figure 8 and Figure 9, it is understood that the primary school and pre-school pre-service teachers often emphasize *attracting attention* and *increasing attendance* under the title of "awareness" in their opinions that demonstrate the way they use technology in their classes. It is seen that the primary school pre-service teachers often use *permanent learning* under the title of "learning process" and *evaluation* code under the title of "As a tool". It was seen that the pre-school pre-service teachers emphasized *learning with fun* under the title of "learning process". The examples of direct quotations from the perspectives of the pre-service teachers with featured codes are presented below:

> "... I give examples to catch students' attention in the beginning, to strengthen the subject in the middle, and to make evaluations at the end of the class." (Pri-P_4)
>
> "In these times, children are very interested in technology and enjoy using it in classes. With activities that benefit from technological tools, their level of motivation increases and they have a lot of fun." (Pre-P_1)

The preschool pre-service teachers' obtaining information about students' level of learning is shown in Figure 10.

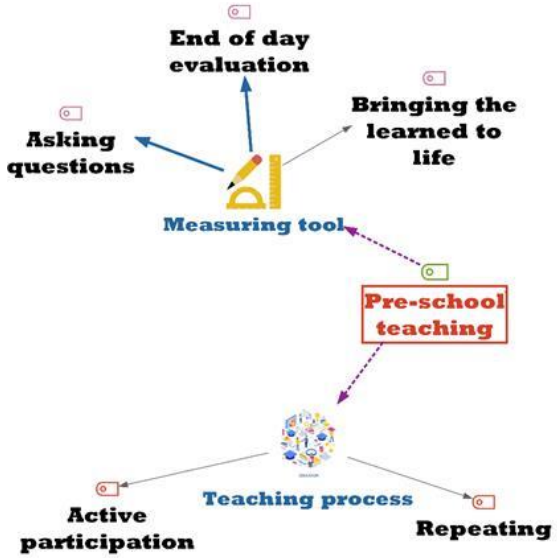

Figure 10. Preschool pre-service teachers' obtaining information about student's level of learning

The primary pre-service teachers' obtaining information about students' level of learning is shown in Figure 11.

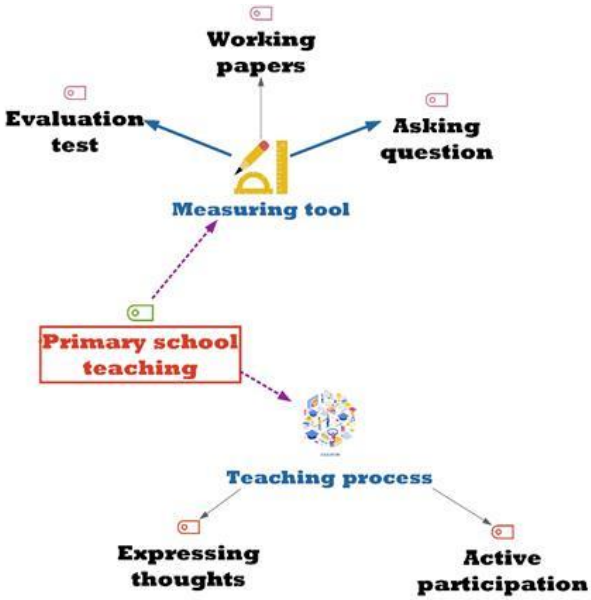

Figure 11. Primary pre-service teachers' obtaining information about student's level of learning

In Figure 10 and Figure 11, it is seen that the primary school and pre-school pre-service teachers frequently emphasize the code of *asking questions* under the title of "measuring tool" while obtaining information about student's level of learning. In addition, the emphasis of the *evaluation test* under the title of "measuring tool" by the primary school pre-service teachers was observed. The pre-school pre-service teachers were determined to maintain an *end-of-day evaluation* under the title of "measuring tool". The examples of direct quotations from the perspectives of the pre-service teachers with featured codes are presented below:

> "... A private time should be given for assessment and evaluation; I dedicate most of my time to this. I think the evaluation tests I did at the end of the class were useful." (Pri-P_1)

> "Children already actively participate in activities when they learn.... I give a chance to speak to children who do not participate actively in activities at the end-of-day evaluation section. In fact, I try to give all children a chance to speak so that I can figure out who understood and who didn't." (Pre-P_8)

Findings Concerning the Third Sub-Problem

The reason why observation was preferred in the study is the thought that pre-service teachers would reflect their professional readiness to their behaviour. In the study, the behaviours of the pre-service teachers within the scope of the Teaching Practice I course in the primary education department were interpreted with the observation form created within the framework of the sub-dimensions of preparedness to teach.

It was noticed that the pre-service teacher with the code Pri-P_1 materialized the course's acquisitions by keeping students active with original materials she prepared and attracted students' attention. Additionally, it was noticed that she maintained a democratic classroom environment where students could express their feelings and thoughts easily. Pri-P_3 coded pre-service teacher used the appropriate teaching methods and techniques for the course content and used various reinforcement types by giving appropriate feedback to students. The pre-service teacher with the code Pri-P_7 failed to manage his time effectively during the course observations and did not give clear instructions to students. Since he did not have sufficient knowledge about the course's concepts, he caused misconceptions. In addition, it was observed that he did not use appropriate assessment and evaluation approaches and did not ask questions to students at different cognitive levels. Therefore, it was seen that they were bored in the class of the pre-service teacher with the code Pri-P_7 and they lost their interest were distracted. Pri-P_5 coded pre-service teacher associated the subject of the course with other courses and took students' individual differences and development levels into account. In this context, it was seen that students were very happy in the class of the pre-service teachers with the code Pri-P_5 and participated in individual or group studies.

It was determined that the primary school pre-service teachers could not identify the special learning needs or difficulties of students in classrooms, did not use many questions at different cognitive levels, did not care enough about the importance of their thinking skill development, could not assist students to collaborate with different individuals using digital tools, and did not offer a high amount of intriguing examples that caught students' attention. It was detected that the pre-service teachers did not ask questions that would inspire students to research and did not use appropriate tools and materials to strengthen their teaching; they, therefore, had difficulties in enriching the content. Nevertheless, it was found out that all the primary school pre-service teachers started their classes with a video and simulation and animation images in order to get the attention of students and to increase their learning levels.

The pre-school pre-service teacher coded Pre-P_1, took advantage of technological tools within the classroom, thus trying to keep students' attention on the course. Compared to this, it was realized that the pre-service teacher had problems in directing children in dynamic music events, planning the subject information according to students' level of development and transferring his knowledge to students. It was also noticed that the pre-service teacher ignored the individual differences of students. Pre-P_2 configured the process by taking the needs and individual differences of students into account. It was seen that s/he planned their activities in a way that students would be active and passive in turns. Pre-P_2 was observed to be successful in configuring her knowledge and skills in a way that students could understand. However, Pre-P_2 and Pre-P_6 had trouble using their voice effectively in the process. Pre-P_6 was observed to be successful in providing suitable environment to allow them to learn as individuals and groups. However, she had trouble in giving students equal chances to participate in understanding how much students learned. Pre-P_8 included different types of activities in the process and allowed students to learn both as individuals and as groups through the techniques they used in the course. In addition to the help of these techniques, the pre-service teacher led students to think with the open-ended questions he directed.

In general, it was determined that all the pre-school pre-service teachers considered students' level of development as well as the gains in the education program while planning their activities. The pre-service teachers prepared intriguing materials that attracted students' attention and actively used them in the classroom environment, thus enriching the teaching activity. The pre-school pre-service teachers were able to direct questions that led students to learn differently and prepared a classroom environment where students could express their thoughts freely. However, the pre-service teachers were seen to have problems while choosing appropriate teaching strategies, identifying specific learning needs or difficulties, exerting their authority in the classroom, and using technology.

Discussion and Conclusion

In the study, pre-service teachers' preparedness to the teaching profession was examined according to the departmental variable. It was determined that the primary education pre-service teachers were at a moderate level of readiness to teach. In contrast to the results of this research, Aybek and Aslan (2019) stated that pre-service teachers in their study were prepared to teach at a high level. Additionally, Crosswell and Beutel (2012) revealed positive results on pre-service teachers' preparedness to teach in their study. Similar results were observed in the study of Croft (2018). There was no significant difference in the total scores of primary education pre-service teachers' preparedness to teach. Similar scores of the primary school and pre-school pre-service teachers in the Preparedness to Teach Scale can be articulated with the presence of similar courses they take in teacher training programs and with the fact that both departments are under the roof of the primary education department.

No significant difference was found between the departments in terms of sub-dimensions of forming an effective learning atmosphere in the Preparedness to Teach Scale. In the focus group interviews, it was stated that the pre-service teachers paid attention to students' levels of cognitive development in the selection of activities and that they focused on individual differences. In addition, they emphasized the necessity of preparing an effective learning environment according to students' interests, needs and type of intelligence. It was observed that the pre-service teachers had difficulties in choosing appropriate teaching strategies and recognizing students' special learning needs or difficulties. The pre-service teachers' problem in determining the appropriate methods and techniques for students within the scope of the teaching application course supports the research results of Karasu Avcı and Ünal İbret (2016). This result coincides with the fact that pre-service teachers in the study of Girmen, Kılıç and Kaya (2016) made mistakes while carrying out teaching methods and techniques in their teaching practice course experience and could not determine appropriate methods and techniques. Pre-service teachers gain teaching skills for teaching strategies they will use in the educational environment before entering the teaching profession. However, while gaining these skills, the theoretical aspect of the work shows the basis whereas the practical aspect shows effectiveness. Unless the theoretical dimension is transformed into experience with practices, it is not possible to raise teachers who own these skills (Çoban, 2015). Another reason for this result is the lack of field practices in the teacher training process (Aktemur Gürler & Tekmen, 2020).

No significant difference was found between the departments in terms of sub-dimensions of designing the instructional process in the Preparedness to Teach Scale. In the opinions of the primary school and pre-school pre-service teachers on the planning status of the teaching process, it was determined that the pre-service teachers emphasized that higher-order thinking skills such as reasoning, creative thinking and problem solving skills should be developed in students. In addition, they expressed the importance of developing daily life skills and stressed the fac that the ability to express themselves was required for students to keep up with social life. The points highlighted by the pre-service teachers also coincide with the development of lifelong learning, information literacy and high-level thinking skills which are the requirements of the twenty-first century (Demirel & Akkoyunlu, 2017). In addition, the pre-service teachers often emphasized that moral education should be seen as important as the education of academic skills and that teachers should be models for students when it comes to moral values (Prancisca & Rizqi, 2018). Especially primary school and pre-school teachers, working with a young group of students, are important actors in moral education. In order for primary school and pre-school pre-service teachers to educate generations properly, they must have knowledgeable qualifications, equipment and ideal values in moral education subjects (Gürdoğan Bayır, Çengelci Köse & Deveci, 2016; Çelik, Esmer & Yilmaz, 2016; Çetin & Ünsal, 2019). In addition, it was noticed that the pre-service teachers did not give students a chance to participate equally during their in-class observations and had class management problems. Different academic studies support this outcome of the research (Bektaş & Ayvaz Can, 2019; Ünver, 2003). In their research, Akyıldız, Altun, and Kasım (2020) revealed that being observed by consultant teachers troubled pre-service teachers at the point of class management, causing them to be distressed and not to be able to feel like teachers. It is thought that the crowded classes in which the pre-service teachers taught were the main reason why they used the reactive model which is one of the traditional approaches to classroom management.

No significant difference was spotted between the departments in terms of sub-dimensions of understanding the learner in the Preparedness to Teach Scale. Nevertheless, it was realized that understanding the learner status varied on the basis of departments in interviews and observations. It was determined that the pre-school pre-service teachers were based on the pre-school education program while designing the instructional process and paid attention to specified gains and indicators for the development levels in the program. Additionally, it was

realized that the pre-school pre-service teachers often indicated that they needed to consider students' main development areas such as motor, cognitive and social-emotional development. While designing activities that pre-school teachers will practice, they must take students' development levels into account (Zembat, 2007). The results of the study show that pre-school pre-service teachers gain this awareness during their undergraduate education. It is seen that primary school pre-service teachers are careful to act in accordance with the subject in activity preferences and to ensure students' active participation. Although the primary school and pre-school pre-service teachers frequently mentioned that they often asked questions to students at the point of evaluation, they did not point questions in the appropriate cognitive structure. In addition, it was found out that they did not spend enough time on alternative measurement and evaluation methods and techniques. In some studies, both pre-school (Karacaoğlu, 2008; Ünver, 2003) and primary school pre-service teachers (Gök & Şahin, 2009) were shown to have problems on measurement and evaluation practices. This conclusion from the study suggests that, although pre-service teachers theoretically learn about alternative measurement assessment approaches in detail, they cannot stop the influence of the traditional approach while practicing these methods and techniques.

No significant difference was found between the departments in terms of sub-dimensions of techno-pedagogical competency in the Preparedness to Teach Scale. The pre-service teachers' level of technology utilization was also examined in the observations and interviews. As a result, it was determined that the primary school and pre-school pre-service teachers used technology to catch attention and increase class participation. It was observed that the primary school pre-service teachers used technological tools such as video, simulation and animation images in the activities both at the start of the class and for evaluation purposes, thus trying to increase the learning levels of their students. The pre-school pre-service teachers were often found to include videos to make students learn by having fun, and other technological tools were used rarely in their classes. This result is also seen in studies that demonstrated pre-service teachers' lack of knowledge, skills and proficiency for technology (Bingimlas, 2009; Zhao, 2007). Use of technology in classes is known to have a positive effect on students' education and development (Couse & Chen, 2010; Yıldız Durak & Tekin, 2020). However, the development of higher order thinking skills such as logical thinking and decision-making skills can be achieved by early use of technology (Kol, 2017). A pre-service teacher should be able to follow technology closely and use it effectively. This is actually an inevitable consequence of being in the age of technology.

Recommendations

Based on the results obtained in the study, activities for forming an effective learning atmosphere, designing the instructional process, understanding the learner, and techno-pedagogical competency can be planned for pre-service teachers in primary education departments before entering the teaching profession. Courses such as school experience and teaching practices should have a bigger importance during teacher training programs, through which pre-service teachers will gain teaching practice. Educational environments based on social cooperation can also be created for primary education department pre-service teachers. This would allow them to share their experiences in professional life, as a consequence of which pre-service teachers would improve their preparedness to teach based on each other's experience. It can also be suggested that workshops and pre-service professional development programs can be created to provide a holistic understanding of the pre-service teachers' preparedness to teach, and to raise awareness regarding the implicit effects of teaching practices, and that, since primary education department pre-service teachers differ from other branches, the reflections of teaching in the educational process regarding their preparedness to teach can be examined in a longitudinal study by considering different variables.

The Limitations of the Study

The limitations of the study were as follows: The research was held in two different schools and four different classes according to the "Teaching Practices I" class of the pre-service teachers from the primary education department, and the observation, as one of the qualitative data collection tools of the research, was performed two hours a week for 8 weeks.

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APPENDIX A: SAMPLE SCALE ITEMS

Forming an effective learning atmosphere
To be able to identify and focus on specific learning needs or difficulties
To be able to choose appropriate teaching strategies for different educational purposes

Designing the instructional process
Using questions to encourage students to learn in different ways
Helping students develop critical thinking and problem-solving skills

Techno-pedagogical competency
To increase student interest and learning level
Evaluating and monitoring student success

Understanding the learner
Teaching field concepts, knowledge and skills in a way that students can understand
To create challenging, appropriate learning and success expectations for students

APPENDIX B: FOCUS GROUP INTERVIEW QUESTIONS

1. What are the focal points of pre-service teachers for achieving educational program outcomes? What are you focusing on?
2. What are the points that pre-service teachers pay attention to/care about while designing the instructional process?
3. What are the skills that pre-service teachers would like to develop in students?
4. How is pre-service teachers' technology usage? How do you use technology?
5. How do you learn about obtaining information about student's level of learning?

APPENDIX C: OBSERVATION FORM SAMPLE ITEMS

Forming an effective learning atmosphere
Recognizes the special learning needs or difficulties in the classroom.

Chooses appropriate teaching strategies for different educational purposes.

Designing the instructional process
Creates environments for students to express their different ideas.
Cares about the development of their thinking skills in students.

Techno-pedagogical competency
Teaches with enrichments.
Increases the level of learning with activities such as videos, simulations and animation images during the class.

Understanding the learner
Identifies learning deficiencies and tries to address them.
Uses questions to measure higher-order student skills such as analysis and synthesis.