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A CROSS-SECTIONAL RESEARCH ON PROSPECTIVE TEACHERS' OPINIONS ABOUT PROFESSIONAL KNOWLEDGE AND FIELD EDUCATION

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Abstract:
In this study, it is aimed to examine the prospective teachers' opinions about the level of using the knowledge and skills they have learned within the scope of professional knowledge and field education. The research process was designed in accordance with the cross-sectional survey model. This basic research question was sought what the prospective teachers' opinions (feelings and thoughts) are about the level of using and synthesizing the knowledge and skills they learned in scope of professional knowledge and field education? A questionnaire developed by the researcher was applied to 148 prospective teachers in the education faculty of a state university. The collected quantitative data were analysed with SPSS 20 program. The findings were evaluated according to the collected data. According to the findings, it was determined that the prospective teachers could not use all lessons in professional knowledge and in field education. It was also determined that they could not use the knowledge and skills in the scope of field education from the context of professional knowledge. Finally, it was determined that the prospective teachers' opinions (feelings and thoughts) about the level of using the knowledge and skills they received in the scope of professional knowledge in the field education differ according to the departments. Depending on the results, it was determined that professional knowledge and field education should be designed as a synthesized discipline rather than different departments in teacher education.

Keywords: Professional knowledge, field education, prospective teachers

1. Introduction

The scope of teacher training was regulated by the Basic Law of National Education No. 1739, which was accepted by the Turkish Grand National Assembly in 1973. In Article 43 of this Law, the fields where prospective teachers will receive education are stated as "*Preparation for the teaching profession is provided via knowledge of general culture, knowledge*

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of field matter and knowledge of pedagogical formation." (T.C. Resmi Gazete, 1973, p. 4). Then, the content and scope of the lessons to be taken by the Council of Higher Education were determined. In this context, the scope of professional knowledge lessons is stated as information given to prospective teachers within the scope of field knowledge lessons and information about how regulation of the learning environment to teach according to the developmental characteristics of students (YÖK, 2007). In this context, the credit and amount of professional knowledge lessons were increased by designing the faculties of education in terms of content. At the same time, it was ensured that professional knowledge lessons were in line with the lessons given in the field of education. Besides, it was emphasized that the knowledge and skills given within the scope of the lessons of field should be organized based on practice, especially in the education process (YÖK, 2007, p. 54).

2. Literature Review

The main purpose of these regulations made by the Council of Higher Education is to ensure that prospective teachers receive more effective education within the scope of both professional knowledge and field education. Thus, the basic and necessary qualifications that teachers should have will be realized better. In this context, Stephens and Crawley (1994, p. 5) stated the basic five qualifications that teachers should have. The researchers listed these qualities of teachers as follows: having knowledge about the target subject, having knowledge and skills related to the application of the target subject, knowledge of classroom management, evaluation of the learning process and recording of the student's progress in the learning process and gaining awareness about the advanced development of the profession. At the same time, different approaches within the scope of teacher education have emphasized the characteristics of teacher. Thus, the teacher education was given related to four approaches as learning-oriented teacher training, program-oriented teacher training, training-oriented teacher training, and product-oriented teacher training (Cochran-Smith and Fries, 2008).

Cochran-Smith and Fries (2008) treat teacher education as a learning problem with a focus on knowledge in the educational process. According to this approach, good teacher definition cannot be made because the quality of the teacher may vary according to the learning environment and characteristics. In the program-oriented approach, teacher education is handled within the scope of the program problem. According to this approach, researchers should focus on the content of the lessons in the program, the order of the lessons, and the processing of the lessons. According to teacher education approaches, there is a teacher qualification problem in the process of a prospective teacher's education. According to this approach under the influence of behavioural learning theory, the characteristics of teaching skills are to be observed, measured, clearly defined and taught. The last approach, product-oriented teacher training, focuses on the product problem. According to this approach, the level of student achievement created by teachers in the classroom shows the effectiveness of teacher education. Therefore,

teacher's success is associated with the success of the student and is handled within the scope of accreditation, program standards, and proficiency exams. According to these approaches, different aspects of teacher education were examined. In this context, the studies on teacher education are classified under five dimensions as follows: "*(1) Prospective teachers' attitudes and perceptions about the teaching profession or changes in these attitudes and perceptions by years; (2) prospective teachers' perceptions of their competencies within the framework of teacher competencies inventories; (3) prospective teachers' perceptions about teaching staff and application teachers in schools; (4) analysis of one or all aspects of teacher education programs; (5) effects of teacher education processes on prospective teachers' knowledge, skills, and attitudes."* (Yıldırım, 2013, p.181).

In teacher education, it is very important to use pedagogical and field knowledge and skills together and in a related way. Therefore, it is necessary to examine in detail the prospective teachers' proficiency to use the knowledge and skills they have acquired within the scope of field knowledge in professional knowledge (Baran, Yaşar, and Maskan, 2015). Because teacher candidates' knowledge, skills, attitudes and qualifications that they should acquire within the scope of professional knowledge and field education constitute teacher qualities. For this reason, a prospective teacher needs to take enough general culture, subject field knowledge, and teaching profession knowledge lessons to have the necessary qualifications. Because it is aimed that prospective teachers gain special skills and knowledge related to teaching with profession knowledge lessons (Ekici, 2008, p. 112). Teachers need to have some qualifications specific to their field together with the general competencies they need to know about professional knowledge. In this context, since teachers' competencies in science education, social studies education, and physics education are not adequately researched, there is a need for scientific research focused on field education (Çepni, 2018).

In addition to the general field competencies of the teaching profession that teachers should have, there is a need for research based on defining specific field competencies and preparing performance indicators for branch teachers (Bahar and Çakıroğlu, 2009). In this context, first of all, the necessary theoretical knowledge should be added to the content of the related programs of the faculties of education to train prospective teachers about how the teaching is structured. Then, the second important component of teacher education should be given to the practices related to teacher candidates' learning to teach by using the experiences gained in the real classroom environment (Brickhouse and Bodner, 1992; Britzman, 1991; Fosnot, 1996; Mclntyre et al. 1996; cited in Maskan and Efe, 2011). Therefore, especially in studies related to School Experience and Teaching Practice lessons, non-functional aspects of undergraduate programs in the faculty of education should be determined and improved (Görgen, Çokçalışkan, and Korkut, 2012).

According to Yıldırım, although the studies related to teacher education are conducted within the scope of professional knowledge, field knowledge education is effective on the quality of prospective teachers in various aspects (2013, p.186-p.187). In particular, general culture and field lessons have a significant impact on candidates'

teaching quality. In this context, answers to the following questions should be sought especially in teacher education: "*What kind of field knowledge education is required and what amount of field knowledge is sufficient for qualified teachers? Should a physics teacher know physics as much as a student who graduated from the physics department of the science faculty? What are the differences between the prospective teachers who receive field education at different scopes and levels in terms of teaching competence?"* (Yıldırım, 2013, p. 186-p.187). At the same time, Yıldırım emphasizes that the balance between theory and practice and the relationship between the lessons given within the scope of teacher education should be examined. In this context, the prospective teachers' opinions (feelings and thoughts) about the level of knowledge and skills used in professional knowledge were examined.

This study aimed to determine the adequacy, functionality, suitability, effectiveness, and effectiveness of the education received from the related undergraduate programs within the scope of professional knowledge and field education and to determine participants' opinions about the contents of these two aspects. For this purpose, the following research questions were sought in the study.

1) What are the prospective teachers' opinions (feelings and thoughts) about the level of using the knowledge and skills they learned in professional knowledge lessons within the scope of field education?
2) What are the prospective teachers' opinions (feelings and thoughts) about the level of using the knowledge and skills they learned in field education within the scope of professional (professional) knowledge?
3) How are the prospective teachers' opinions (feelings and thoughts) about the adequacy, functionality, suitability, effectiveness and the level of compatibility of the education they received within the scope of professional knowledge?

2. Material and Methods

2.1 Model

In this study, the prospective teachers' opinions about the knowledge and skills they have learned within the scope of professional knowledge and field education were examined. To determine the prospective teachers' opinions, a cross-sectional survey model was used (Fraenkel and Wallen, 2006). The cross-sectional survey model is a descriptive survey based on the collection of data from the sample and determination of the situation to determine the situation examined (Büyüköztürk, Kılıç, Akgün, Karadeniz and Demirel, 2018). Depending on the research questions, quantitative data were collected from the participants through the questionnaire, respectively. Prospective teachers' opinions related to the education they received within the scope of professional knowledge and field educations were determined.

2.2. Study group

The data of the research were collected from 148 prospective teachers who were in the fourth year of the Department of Preschool Education, Department of Elementary

Education, Department of Elementary School Mathematics Education, Department of Turkish Education and Department of Social Sciences Education of a state university in the 2019-2020 academic year. Participants were determined with the purposeful sampling method. In this sample selection method, according to the aim of the research, the participants must meet certain criteria and have certain characteristics (Büyüköztürk, et al. 2018). Depending on the criteria and characteristics determined in the research, participants should complete at least six semesters of field education and professional knowledge lessons. The participants' demographic characteristics identified in this scope are given in the table below.

Table 1: The sample group's demographic characteristics

		f	%
Gender	Female	92	62,2
	Male	56	37,8
	Total	**148**	**100**
Department	Preschool Education	30	20
	Elementary Education	31	21
	Elementary School Mathematics Education	24	16
	Turkish Education	34	23
	Social Sciences Education	29	20
	Total	**148**	**100**

2.3 Data collection process and data collection tool

Through the questionnaire developed by the researcher, prospective teachers' opinions about the education they received within the scope of professional knowledge and field education were examined in three dimensions. In this context, *in the first dimension of the questionnaire, prospective teachers' opinions about how often they use professional knowledge lessons* were examined. The professional knowledge lessons taken by the prospective teachers from five different departments up to the seventh semester were added to the questionnaire as items. Thus, the first dimension of the questionnaire consisted of 13 items. In the second dimension of the questionnaire, there are items to determine the opinions of prospective teachers about how often they use their knowledge and skills in the field of professional education. In this context, the subjects related to 19 compulsory field education lessons taken by the prospective teachers from five different departments until the seventh semester were added to the questionnaire as items. Since the contents of these items were prepared according to the field education, these items differed according to five departments. Therefore, the second dimension of the questionnaire, which varies according to the departments, consists of 19 items. In the third dimension of the questionnaire, there are items to determine the adequacy, functionality, suitability, effectiveness, and effectiveness of the education received by the participants within the scope of their professional knowledge. 13 characteristics (evaluation statement) prepared in this context were added to the questionnaire as items. Thus, the third dimension of the questionnaire consisted of 13 items. To examine and evaluate the reliability, validity and application process of the questionnaire prepared in this context, the questionnaire was

applied to 15 participants. The data collected by this pilot application was examined by three subject experts in the field of measurement and evaluation in education. As a result of this examination, it was determined that 3 items in the survey were ambiguous in meaning. By simplifying, these items have become more comprehensible. Besides, all items in the questionnaire were found to be appropriate for the study. Therefore, there was no need to eliminate any items. The response interval of the questionnaire which was completed as a result of the expert evaluation was prepared according to 5-point Likert. Thus, the questionnaire consists of three dimensions and 45 items. During the actual implementation, the questionnaire was applied to 155 participants. Seven questionnaires were eliminated during the review process because five participants answered to their questionnaire irrelevant to the research aim and two participants responded to their questionnaire as incomplete. As a result of this qualification, the 148 participants' questionnaire was examined.

2.4 Data analysis

Frequency analysis of the SPSS 20 program was used for percentages and frequencies of the data in the four dimensions of the questionnaire. At the same time, the statistical significance level of the differentiation of the answers of the participants to the first and third dimensions of the questionnaire was examined. In this context, One Way ANOVA analysis was used. Since the number of participants in the departments was close to each other, One Way ANOVA of the parametric test was used. The significance level was accepted as .05. Statistically significant items were determined based on the participants' answers. The items with a significance level of .05 and below as they differ significantly were shown in the tables. Complementary post-hoc analyses were used to determine the source (cause) of the difference in the relevant items with significant differences. The homogeneity of the variances was determined to determine which post-hoc would be used. For this reason, the Tukey test was preferred. In this context, the mean values of the related items were compared. Thus, comparisons were made between the departments according to the height of average values. The results obtained were given in the tables.

3. Results and Discussion

The data collected from the participants through the questionnaire were analysed. According to these data, the prospective teachers' opinions about the adequacy, functionality, suitability, effectiveness of professional knowledge lessons, contents of the field education lessons, and contents of the professional knowledge lessons were determined. The findings obtained through research questions are given in the following three sections.

3.1 Findings related to the level of using the knowledge and skills that the prospective teachers learned in professional knowledge lessons within the scope of field education

In this section, 148 participants' answers about using professional knowledge lessons within the scope of their field education were examined. In this context, the frequency analysis of the answers given by the participants about each lesson was conducted. As a result of the analyses, the levels of using the knowledge and skills acquired by the participants in the professional knowledge as *Never, Rarely, Sometimes, Frequently,* and *Always* were examined. In the second step of this section, according to the answers given by the participants, whether there is a significant difference between the departments was examined. One Way ANOVA test was used to determine the comparison of the participants' answers about the professional knowledge lessons according to the departments.

In Table 2, the level of using the knowledge and skills of the professional knowledge lessons in field education was examined. In this context, the participants' opinions about using the lesson contents were determined. In the first dimension of the questionnaire, 13 lessons taken by the prospective teachers during the faculty education were added as items. The normal distribution levels of the participants were examined. When the Skewness and Kurtosis values of the 13 items in Table 2 were examined, it was seen that the distribution was between -1 and +1. As a result, it can be said that there is a normal distribution between the answers to the items.

When the 48 participants' answers were examined, it was seen that the knowledge and skills within the scope of professional knowledge lessons were not used more in the field education. Because the participants' answers were concentrated on the ranges of Never ($\bar{x}$: 20, Rarely ($\bar{x}$: 21), and Sometimes ($\bar{x}$: 31), which showed a low frequency of using knowledge and skills in the field education. It is seen that the frequency of using the knowledge and skills of lessons except for the Guidance and Principles and Methods of Teaching within the scope of professional knowledge in field education was Sometimes. Therefore, at this step, the sometimes was determined as a limit. Thus, the answers given by the participants were examined in two groups as being under the Sometimes and being above Sometimes.

Table 2: Participants' answers about using professional knowledge lessons in the field education

Items		Never %	Rarely %	Sometimes %	Frequently %	Always %	Normality Skewness	Kurtosis	Mean
I1	Introduction to Educational Science-basic knowledge, concepts, etc. about education...	**19**	**26**	**35**	14	6	-0,93	,221	**3,1**
I2	Educational Psychology- research methods, development theories, etc.	18	24	32	20	6	-,303	-,236	**3,1**
I3	Principles and Methods of Teaching- teaching and learning principles, models, strategies, methods and techniques, objectives in teaching, etc.	**51**	**11**	**14**	11	13	-,264	-,632	**3,5**
I4	Instructional Technologies and Material Design - information technologies in education, design of instructional materials, evaluation of instructional materials, etc.	**26**	**26**	**25**	16	7	-,404	-,263	**3,5**
I5	Turkish Education History: the subject of the history of Turkish education, methods, and resources, the foundations of Turkey's education system, its structure, organization, and development, etc.	**24**	**22**	**35**	14	5	,118	-,611	**2,6**
I6	Research Methods in Education: research process, data collection tools, data analysis and evaluation, research models and types, etc.	8	22	32	**29**	**9**	,104	-,462	**2,9**
I7	Measurement and Evaluation in Education: the validity, reliability, usefulness of the measurement tools, development and application of achievement tests, interpretation of test results and giving feedback, analysis of test and item scores, etc.	8	14	37	**26**	**15**	-,154	-,635	**3,2**
I8	Turkish Education System and School Administration: basic laws regulating the Turkish education system, reform and innovation in the Turkish education system, etc.	7	13	35	**32**	**13**	,110	-,743	**2,9**
I9	Teaching Methods: reading, writing, speaking, listening, grammar, etc.	10	22	34	**26**	**8**	,501	-,203	**3,6**
I10	Classroom Management: class rules and discipline in the classroom, models related to classroom management, management of student behaviour in the classroom, time management in the classroom, etc.	12	24	33	24	7	-860	,282	**4**
I11	Guidance: the philosophy, purpose, principles, and program of the developmental guidance model, basic services, the role and function of teachers in classroom guidance, etc.	**35**	**20**	**24**	16	5	-,647	,188	**3,5**
I12	Special Education: principles and historical development of special education, legal regulations on special education, diagnosis and evaluation in special education, etc.	**20**	**28**	**32**	18	2	-,309	-,321	**3,1**
I13	School Experience: using field-specific teaching methods and techniques, developing field-specific activities and materials, preparing instructional environments, managing the classroom, measuring, evaluating, and reflecting, etc.	18	26	32	17	7	-,426	-,398	**3,8**
	i. Total mean ($\bar{x}$):	**20**	**21**	**31**	**20**	**8**			

At this step, the prospective teachers' answers about the using of professional knowledge lessons which are used as never or rarely were examined. Regarding the frequency of using each lesson towards these two categories it was found that participants stated that they never (51%) or rarely (11%) use knowledge and skills such as information technologies, design of instructional materials, assessment of instructional materials, and so on. Which are in the context of the Principles and Methods of Teaching (I3) lesson (information technologies, design of instructional materials, assessment of instructional materials, etc.) as never (51%) and rarely (11%) in the field education. When compared with other lessons, it was seen that there are more opinions about the fact that Principles and Methods of Teaching lesson is not used in field education. Similarly, another less frequently used professional lesson in field education is Guidance (I11). Participants stated that they use never (35%) or rarely (20%) knowledge and skills such as philosophy, aim, principles, and curriculum, basic services, teachers' role and function in classroom guidance, etc., which are in the context of the Guidance lesson (philosophy, aim, principles, and curriculum, basic services, teachers' role and function in classroom guidance, etc.) as never (35%) and rarely (20%) in the field education. In this section, one of the lessons that the participants use less in field education is Instructional Technologies and Material Design (I4). Participants stated that they could use knowledge and skills of the Instructional Technologies and Material Design (I4) (information technologies, design of instructional materials, evaluation of instructional materials, etc.) as never (26%) and rarely (26%) in the field education. Similarly, according to the participants, the knowledge and skills of the Turkish Education History lesson (I5) (history, methods, and resources, the foundations of Turkey's education system, its structure, organization, and development, etc.) are not used in field education enough. Therefore, the contents of this lesson were used as never (24%) or rarely (22%). Special Education (I12) is another less used professional knowledge in field education. Participants stated that they could use knowledge and skills of the Special Education (the principles and historical development of special education, legal regulations about special education, diagnosis and evaluation in special education, etc.) as never (28%) and rarely (20%) in the field education. In addition, prospective teachers stated that they could not use the knowledge and skills they learned within the scope of Introduction to Educational Science (I1) and Educational Psychology (I2) lessons. Because, when the average of the answers given for Introduction to Educational Science was examined, it was seen that they were used as rarely (26%) and never (19%) in the field of education which includes the basic information, concepts, and contents of the Introduction to Education lessons. Similarly, the content of Educational Psychology such as research methods, development theories, etc. was used in field education as rarely (24%) and never (18%). A remarkable result in this section is related to the School Experience (I13) lesson. Because, although the opportunity to use the knowledge and skills within the scope of the field knowledge and the professional knowledge is the most in this lesson, the participants stated that they do not use this lesson more in the field education. When the answers were examined, it is seen that the contents of this lesson (using field-specific teaching methods and techniques, developing

field-specific activities and materials, preparing instructional environments, managing the classroom, measuring, evaluating and reflecting ...) were used rarely (26%) or not used (18%).

The least frequently chosen value selected by the participants was determined as Always ($\bar{x}$: 8). According to this result, the participants stated that they frequently ($\bar{x}$: 20) used some professional knowledge lessons. Therefore, although the prospective teachers stated that they do not use their knowledge and skills in the field of education, this result differs for some lessons. In this context, many answers indicated the knowledge and skills of Research Methods in Education (I6), Measurement and Evaluation in Education (I7) and Turkish Education System and School Management (I8) lessons were used in the education field as frequently and always. The participants stated that they used the contents of the Turkish Education System and School Management as frequently (32%) or always (13%) in field education. The other lesson used frequently in field education is Measurement and Evaluation in Education. The participants stated that they used the content (validity, reliability, usability characteristics, development and application of success tests, interpretation of test results and giving feedback, analysis of test and item scores ...) they learned in the scope of this lesson as frequently (26%) or always (15%). The participants stated that they used the content of the Research Methods in Education (the research process, data collection tools, data analysis and evaluation, research models and types ...) in the field lessons as frequently (29%) or always (9%). Finally, in this section, participants stated that they frequently (32%) or always (13%) used the content of the Turkish Education System and School Management (I8) (Basic laws regulating the Turkish education system, education levels, reform and innovation in the Turkish education system, initiatives ...) in the field lessons.

At this step, whether the department is effective as a variable was examined. In this context, the level of differentiation of the participants' answers about the usage level of the professional knowledge lessons in the field education was examined according to the departments they received education. In this context, the effect of the independent variable on the answers (dependent variable) related to the professional knowledge lessons was evaluated. The data uploaded to SPSS 20 program was examined by the One Way ANOVA test. As a result of the study, no statistically significant difference was found between the answers given by the participants for the Introduction to Education Science (I1), Educational Psychology (I2), Research Methods in Education (I6), Measurement and Evaluation in Education (I7), Classroom Management (I10), Special Education (I12) and School Experience (I13) lessons. Therefore, it was determined that the students' opinions about using these lessons in the field education did not differentiate among the departments. The lessons which have a significant difference between the departments and the directions of this difference were given in Table 2a.

Table 2a: The test results of One Way ANOVA related to the participants' answers

Items	The department	*N*	Mean	*SD*	*F*	*P*	The direction of the difference*
I3	Preschool Education	30	3,06	,91	5,008	,001	2>3 2>1
	Elementary Education	31	3,93	,96			
	Elementary School Mathematics Education	24	3	,98			
	Turkish Education	34	3,67	,97			
	Social Sciences Education	29	3,55	,98			
I4	Preschool Education	30	3,50	1	3,916	,005	2>3
	Elementary Education	31	4	,73			
	Elementary School Mathematics Education	24	3,04	1			
	Turkish Education	34	3,41	,92			
	Social Sciences Education	29	3,62	,90			
I5	Preschool Education	30	2,50	1,04	3,144	,016	5>2 5>3
	Elementary Education	31	2,35	1,08			
	Elementary School Mathematics Education	24	2,37	1,05			
	Turkish Education	34	2,71	1,03			
	Social Sciences Education	29	3,17	,89			
I8	Preschool Education	30	2,56	1,04	3,944	,005	4>2
	Elementary Education	31	2,35	,98			
	Elementary School Mathematics Education	24	2,91	1,13			
	Turkish Education	34	3,29	1,24			
	Social Sciences Education	29	3,19	1,16			
I9	Preschool Education	30	3,30	1,09	3,449	,010	4>1
	Elementary Education	31	3,68	1,04			
	Elementary School Mathematics Education	24	3,54	,98			
	Turkish Education	34	4,18	,87			
	Social Sciences Education	29	3,45	1,15			
I11	Preschool Education	30	3,47	1,01	2,886	,025	4>5
	Elementary Education	31	3,35	1,11			
	Elementary School Mathematics Education	24	3,46	,93			
	Turkish Education	34	4,03	,83			
	Social Sciences Education	29	3,28	1,1			

*p < 0,05; Criteria: 1- Preschool Education, 2- Elementary Education, 3- Elementary School Mathematics Education, 4- Turkish Education, 5- Social Sciences Education

As can be seen in Table 2a, the answers given for the Principles and Methods of Teaching lesson (**I3)** showed statistically significant differences according to the departments (F= 5,008; p=,001<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the level of using elementary school prospective teachers' knowledge and skills of Principles and Methods of Teaching in the field education is higher than that of elementary school mathematics prospective teachers. Similarly, elementary education prospective teachers' tendency to use the knowledge and skills of the Principles and Methods of Teaching lesson in field education is significantly higher than the prospective teachers of the Department of Preschool Education (p<,05). The answers given for

Instructional Technologies and Material Design lesson **(I4)** showed a statistically significant difference according to the departments (F=3,916; p=,005<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the prospective teachers in the Elementary School Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Elementary School Mathematics Education Department. The answers given for the Turkish Education History lesson **(I5)** showed a statistically significant difference according to the departments (F=3,144; p=,016 <,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the prospective teachers in the Social Studies Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Elementary Education Department. Similarly, the prospective teachers in the Social Sciences Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Elementary School Mathematics Department.

The answers given for the Turkish Education System and School Management lesson **(I8)** showed a statistically significant difference according to the departments (F=3,944; p=,005<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the prospective teachers in the Turkish Education Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Elementary School Department. The answers given for the Special Teaching Methods lesson **(I9)** showed a statistically significant difference according to the departments (F=3,449; p=,010<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the prospective teachers in the Turkish Education Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Preschool Department. The answers given for the Guidance lesson (**I11**) showed a statistically significant difference according to the departments (F=2,886; p=,025<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained by the Tukey test, the prospective teachers in the Turkish Education Department have higher frequencies of using the knowledge and skills of this lesson than the prospective teachers in the Social Sciences Department.

3.2 Findings related to the level of using the knowledge and skills that the prospective teachers learned in field education within the scope of professional knowledge lessons

In this part of the study, the prospective teachers' opinions (feelings and thoughts) about the level of using the knowledge and skills they received in the field education were examined. In this context, nineteen field education lessons taught in the five departments until the seventh semester were determined. These lessons, which were prepared separately for departments, were added as an item to the second dimension of the

questionnaire. Thus, nineteen items in the second dimension of the questionnaire were prepared differently for departments. Therefore, the findings in this section were analysed and evaluated within the scope of the related departments. The results of the arithmetic average of the answers of the fourth-grade students in five departments about how often they use the lessons they take in the field education were given in Table 3. The answers given by the participants regarding 19 lessons were categorized as Never, Rarely, Sometimes, Frequently and Always.

Table 3: Answers about the level of using field education within the scope of professional knowledge

	Preschool Education					**Elementary Education**					**Mathematics Education**					**Turkish Education**					**Social Studies Education**				
	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Items no.	Never	Rarely	Sometimes	Frequently	Always	Never	Rarely	Sometimes	Frequently	Always	Never	Rarely	Sometimes	Frequently	Always	Never	Rarely	Sometimes	Frequently	Always	Never	Rarely	Sometimes	Frequently	Always
I1	3	7	5	10	5	1	5	7	12	6	0	3	2	**13**	**6**	0	2	10	13	9	2	4	8	14	1
I2	1	12	7	8	2	1	6	10	12	2	2	3	8	10	1	0	2	10	13	9	2	1	8	10	8
I3	2	5	9	9	5	0	10	7	8	6	2	6	10	3	3	1	1	6	**17**	**9**	**4**	**10**	5	7	3
I4	2	5	11	10	2	2	7	7	12	3	4	10	8	2	0	0	4	11	10	9	2	6	4	11	6
I5	0	5	17	6	2	3	8	12	7	1	2	0	12	6	4	**12**	**8**	7	1	6	4	4	9	6	6
I6	4	3	5	**13**	5	3	2	9	10	7	5	9	5	5	0	0	2	5	**13**	**14**	2	2	5	11	9
I7	4	4	6	9	7	**6**	**10**	8	3	4	5	4	8	6	1	0	1	11	11	11	3	1	9	11	5
I8	6	6	10	8	0	0	2	5	**11**	**13**	0	5	8	5	6	0	1	4	**13**	**16**	2	1	6	11	9
I9	3	5	7	8	7	2	6	10	10	3	**12**	**5**	5	1	1	1	2	10	16	5	2	4	9	10	4
I10	2	6	2	9	11	2	6	8	12	3	0	3	12	6	3	1	3	10	13	7	4	3	7	11	4
I11	2	4	6	7	11	1	2	8	**11**	**9**	0	2	6	**11**	**5**	1	6	12	9	6	2	1	4	**15**	**7**
I12	2	7	6	8	7	0	2	10	**14**	**5**	0	3	7	10	4	0	4	9	13	8	1	2	6	11	9
I13	3	3	8	**12**	4	0	0	6	**14**	**11**	1	3	8	9	3	0	4	8	10	12	1	2	2	**12**	**12**
I14	2	7	8	**12**	1	1	2	8	**13**	**7**	5	8	9	2	0	**3**	**13**	6	8	4	2	4	8	11	4
I15	7	3	7	**13**	0	2	9	12	3	5	**7**	**7**	8	2	0	0	3	9	14	8	3	4	5	14	3
I16	5	6	9	7	3	1	7	11	6	6	0	7	9	7	1	0	1	11	11	11	1	3	8	14	3
I17	4	6	7	9	4	**12**	**6**	7	5	1	2	3	9	7	3	0	2	11	11	10	2	1	11	9	6
I18	**8**	**8**	6	7	1	3	8	10	7	3	1	1	8	9	5	1	3	13	10	7	2	4	7	10	6
I19	**7**	3	8	11	1	3	2	10	12	4	0	2	7	**6**	**9**	**3**	**11**	11	4	5	**10**	**2**	5	6	6
$\bar{x}$	**4**	**5**	**8**	**9**	**4**	**2**	**5**	**8**	**6**	**5**	**3**	**4**	**8**	**6**	**3**	**1**	**4**	**9**	**11**	**9**	**3**	**3**	**7**	**11**	**6**

In the first dimension of Table 3, preschool education prospective teachers' opinions about the level of using knowledge and skills in field education within the scope of professional knowledge were examined. According to the frequency of the answers given in this context, the participants stated that they frequently used the field education within the scope of their professional knowledge ($\bar{x}$: 9). The participants stated that they used knowledge and skills of the Early Childhood Mathematics Education (I6), Recognition and Evaluation of Children (I13), Early Childhood Learning Approaches (I14) and Early Childhood and Environmental Education (I15) lessons more frequently in field education. In contrast to this, the participants stated that they did not use or rarely used the knowledge and skills of the Character and Value Education (I18) lessons within the scope of professional knowledge.

In the second dimension of the table, the frequency of the answers given by the prospective teachers in the Department of Elementary School Education about the level of using the knowledge and skills in the field education within the scope of professional knowledge were examined. When the arithmetic values of the answers given by these participants in five categories for 19 lessons were examined, a different result was seen than the answers given by the prospective teachers in the Department of Preschool Education. Because the prospective teachers in the Department of Elementary School Education stated that they use the knowledge and skills in the field education within the scope of professional knowledge as sometimes ($\bar{x}$: 8). When the frequent and low usage levels of these lessons were examined, the following findings were reached: The participants stated that they did not use and rarely used the knowledge and skills of Science Laboratory Practices (I7) and Foreign Language Teaching in Elementary School (I17) lesson within the scope of professional knowledge. On the other hand, the participants stated that the knowledge and skills that they learn in the scope of the First Reading and Writing Teaching (I8), Game and Physical Activity Teaching (I11), Turkish Language Teaching (I12), Life Science Teaching (I13) and Mathematics Teaching (I14) lessons used more frequently (always) with professional knowledge lessons.

The third dimension of the table consists often answers of prospective teachers in the Department of Elementary School Mathematics Education about the level of using the lessons in the field education within the scope of professional knowledge. The arithmetic means of the answers given by the participants in five categories for 19 lessons were calculated. When the arithmetic mean of answers was examined, the results were close to the answers of the prospective teachers in the Department of Elementary School Education. Because the prospective teachers in the Department of Elementary School Mathematics Education stated that they use the knowledge and skills in field education within the scope of professional knowledge as sometimes ($\bar{x}$: 8). When the frequent and low usage rates of these lessons were examined, the following findings were obtained: The participants stated that they did not use or rarely used the knowledge and skills of Algorithm and Programming (I9) and Algebra Teaching (I15) lessons within the scope of professional knowledge. In contrast to this result, the participants stated that they used the knowledge and skills of Fundamentals of Mathematics (I1), Teaching the Numbers

(I11) and Misconceptions in Mathematics Teaching (I19) lessons more frequently within the scope of professional knowledge.

In the fourth dimension of Table 3, the answers of the prospective teachers in the Department of Turkish Education about using knowledge and skills of the lessons of field education within the scope of professional knowledge were examined. In this section, when the arithmetic mean of the answers given in five categories was examined, a different result was seen than the previous three sections. The arithmetic average of the answers given by the Turkish Department prospective teachers as sometimes, frequently and always is higher than the averages given by the preschool education, elementary education and elementary school mathematics education prospective teachers for these three categories. When the arithmetic means of the answers given by the Turkish prospective teachers for the five categories were compared, it was seen that the using of knowledge and skills of field education as frequently ($\bar{x}$: 11) and always ($\bar{x}$: 9) were higher. Therefore, the prospective teachers in the Department of Turkish Education stated that they used the knowledge and skills in the field education more within the scope of professional knowledge. The participants stated that they did not use or rarely used the knowledge and skills of Oral Expression (I3), Turkish Grammar II (Phonetics) (I6) and Turkish Grammar III (Vocabulary) (I8) Ottoman Turkish (I5), General Linguistics (I14) and Teaching Turkish to foreigners (I19) lessons within the scope of professional knowledge.

In the fifth dimension of Table 3, the answers of the prospective teachers in the Department of Social Sciences Education about their level of using knowledge and skills in field education were examined. The arithmetic mean of the answers given by the participants according to the five categories was similar to the answers of the prospective teachers in the Department of Turkish education. The arithmetic means of the sometimes, frequently and always answers of the prospective teachers in the Department of Social Sciences Education is higher than the other two categories (never and rarely). According to this finding, the level of using the knowledge and skills of the field education within the scope of professional knowledge is high according to the prospective teachers in The Department of Social Sciences Education. When the arithmetic means of the answers given for the five categories were compared, it was seen that the using of knowledge and skills of field education as frequently ($\bar{x}$: 11), sometimes ($\bar{x}$: 7), and always ($\bar{x}$: 6) were higher. The participants stated that they used the knowledge and skills of the Social Studies Curriculum (I11) and the Human and Economic Geography of Turkey (I13) lessons more frequently within the scope of professional knowledge. In contrast to this result, the participants stated that they did not use or rarely used the knowledge and skills of the Political Science (I3) and the Disaster and Disaster Teaching (I19) lessons within the scope of professional knowledge.

3.3 Findings related to the adequacy, functionality, compatibility effectiveness, and suitability of the lessons given within the scope of professional knowledge

In this section, prospective teachers' opinions (feelings and thoughts) about professional knowledge were examined. In this context, the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons were presented to the participants with 13 items. 148 participants stated their opinions for items as disagree, partly disagree, neutral, partly agree and agree. The percentages of the participants' answers for each item were determined and indicated for the relevant item. The participants' answers for13 items were given in Table 4. The normal distribution levels of the answers given by the participants about the knowledge and skills learned in the professional knowledge were examined. When the Skewness and Kurtosis values of the answers for 13 items were examined, it is seen that the distribution is between -1 and +1. According to this result, there is a normal distribution between the answers given for the items.

Table 4: Prospective teachers' answers about professional education

Items		Disagree %	Partly disagree %	Neutral %	Partly agree %	Agree %	Normality Skewness	Kurtosis	Mean
I1	The knowledge and skills gained in professional knowledge lessons are sufficient for field education.	4	16	50	24	6	,222	-,571	**2,6**
I2	The distribution of professional knowledge lessons according to the classes of the field education is appropriate.	5	18	39	32	6	,086	-,810	**2,7**
I3	Practicing the School Experience and the Teaching Practice lessons in 4th grade are sufficient.	2	17	29	37	15	,746	-,973	**2,2**
I4	The current professional knowledge lessons and field education are sufficient to be a teacher.	2	13	29	**42**	**14**	,357	-,863	**2,5**
I5	The time given is sufficient to apply professional knowledge lessons in field education.	**16**	**28**	**35**	17	4	,208	-,751	**2,5**
I6	Professional knowledge lessons support the knowledge and skills of field education.	**8**	**28**	**37**	21	6	-,141	-,675	**3,1**
I7	Professional knowledge lessons support methods and techniques using in field education.	5	21	32	31	11	-,243	-,470	**3,3**
I8	Professional knowledge lessons are appropriate to the target group's learning characteristics (students in preschool, elementary school, secondary school).	**13**	**25**	32	20	10	-,336	-,375	**3,3**
I9	Professional knowledge lessons meet the target group's learning needs (students in preschool, elementary school, secondary school).	4	8	31	**33**	**24**	-,093	-,636	**3**
I10	Professional knowledge lessons are functional for current educational technology.	1	7	16	**41**	**35**	-,023	-,734	**2,9**
I11	It is sufficient applying of professional knowledge and field education only in the scope of internship in schools.	5	8	30	**41**	**16**	,423	-,959	**2,4**

I12	Knowledge and skills in professional knowledge and field education lessons are sufficient to design the teaching process.	7	18	39	31	5	,140	-,790	**2,5**
I13	Knowledge and skills in professional knowledge and field education lessons are sufficient to evaluate the teaching process.	2	7	31	**31**	**29**	,190	-717	**2,7**
	Total mean ($\bar{x}$):	**6**	**16**	**33**	**31**	**14**			

In Table 4 it is seen that the arithmetic means of answers given as neutral for the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons are higher ($\bar{x}$: 33) in general. However, the participants stated that they partly agree with some of the items. This factor increased the rate of partly agree ($\bar{x}$: 31) related to the proficiency, functionality, suitability, and effectiveness of professional knowledge lessons. Another noteworthy finding in the table is that the participants' opinion as disagree which indicates negative opinions about the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons ($\bar{x}$: 6). Therefore, participants stated that professional knowledge lessons were generally effective. In this section, the answers given as neutral have a decisive role in the evaluation of the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons. In this section, the answers given by the participants were examined in two groups as being under the neutral and being above the neutral. Therefore, the neutral option was determined *as a middle value*.

The results of the prospective teachers' answers that are under the middle value (neutral) and that given as disagree and partially disagree were examined. According to the results, the participants stated that they did not agree more with the following items: When the table was examined, it was seen that the participants did not agree with the I5 at most. Based on this result, according to the participants, the time given to apply professional knowledge lessons in field education is not enough. At the same time, the participants stated that they disagreed or partially agreed with the idea mentioned in I8. According to the participants, professional knowledge lessons are not sufficiently suitable to meet the learning characteristics of the target group (students in preschool, primary school, secondary school). In this section, I6 is an item that participants do not agree or partly agree with. Because, according to the participants, professional knowledge lessons do not support the knowledge and skills in the field education adequately.

In this section, the positive answers given as partially agree and agree about the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons were examined. Therefore, regarding the answers being above the neutral value, it was found that the participants preferred the partially agree and agree with options at a high level for the I10. This finding indicates that participants think that professional knowledge lessons are functional for current educational technology. Similarly, more than half of the participants stated that they partially agreed with and agreed with the feature given in I13. Therefore, participants think that the knowledge and skills in professional knowledge and field education are sufficient to evaluate the teaching

process. Another feature that the participants partially agree with and agree with is given in I9. According to the participants' positive answers to this item, professional knowledge lessons meet the target group's learning needs (students in preschool, primary school, secondary school). Participants also stated that they partially agree with and agree with the feature given in I11. According to this finding, the participants found it sufficient for practicing professional knowledge and field education only in the scope of the internship. Finally, the participants gave more positive answers to I4. According to the answers given as partially agree and agree, the participants found that professional knowledge and field education was sufficient for the teaching profession.

Table 4a: The results of One Way ANOVA that comparison of participants' answers depending on the departments

Items	Department	*N*	Mean	*SD*	*F*	*P*	The direction of the difference*
	Preschool Education	30	2,60	1,610			
	Elementary Education	31	1,74	1,264			
I3	Elementary School Mathematics Education	24	3,04	1,654	3,745	,006	3>2
	Turkish Education	34	2,18	1,358			
	Social Sciences Education	29	1,86	1,355			
	Preschool Education	30	2,13	,860			
	Elementary Education	31	2,32	1,107			
I5	Elementary School Mathematics Education	24	3	,978	2,460	,048	3>1
	Turkish Education	34	2,71	1,314			
	Social Sciences Education	29	2,55	1,241			
	Preschool Education	30	2,83	1,019			
	Elementary Education	31	3,65	1,018			2>1
I7	Elementary School Mathematics Education	24	3,13	1,191	2,858	,026	
	Turkish Education	34	3,53	1,079			
	Social Sciences Education	29	3,10	1,175			
	Preschool Education	30	2,63	1,066			
	Elementary Education	31	2,92	1,093			
I10	Elementary School Mathematics Education	24	2,71	,907	2,573	,040	4>1
	Turkish Education	34	3,38	1,155			
	Social Sciences Education	29	2,69	1,168			

*p < 0,05; Criteria: 1- Preschool Education, 2- Elementary Education, 3- Elementary School Mathematics Education, 4- Turkish Education, 5- Social Sciences Education

As shown in Table 4a, there is a statistically significant difference for the **I3** due to the participants' answers according to the departments (F=3,745; p=,006<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained via the Tukey test, the level of the elementary school mathematics education prospective teachers' answers about finding the School Experience and Teaching Practice lessons to be sufficient in the 4th grade is higher than elementary education prospective teachers' answers. The answers for **I5** showed a statistically significant difference according to the departments (F=2,460; p=,048<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained via the Tukey test, the level of the elementary school mathematics education prospective teachers' answers about the

sufficient level of time given to apply professional knowledge lessons in field education is higher than the preschool education prospective teachers' answers. The answers for **I7** showed a statistically significant difference according to the departments (F =2,858; p= ,026< 0,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained via the Tukey test, the level of the elementary education prospective teachers' answers about tendencies of professional knowledge lessons that support methods and techniques in field education is higher than the preschool education prospective teachers' answers. In this section, the answers for **I10** showed a statistically significant difference according to the departments (F=2,573; p=,040<,05). To determine the source of the difference, pairwise comparisons were made between the departments. According to the findings obtained via the Tukey test, the level of the Turkish education prospective teachers' answers about the functionality of the professional knowledge lessons for current educational technology is higher than the preschool education prospective teachers' answers.

4. Recommendations

There is a need for researching on how professional knowledge and field education should be designed in a way to complement and support each other. Through these researches, undergraduate curricula can be prepared especially about how to teach professional knowledge and field education in a more constructive way. Because, as emphasized in the previous research, professional knowledge lessons should be revised in order to meet the changing learner needs depending on the conditions of the society (Ada, 2001; Yurdakal, 2018).

The professional knowledge and field education should be designed as a synthesized discipline in teacher education, not as different disciplines. For example, Turkish lesson prospective teachers learn a lot of theoretical information about the curriculum. Thus, prospective teachers' performance that preparing a curriculum for the Turkish lessons by combining this knowledge and skill with the field education shall show the successful education realized. Because they shall synthesize and apply the knowledge and skills they received in both disciplines. When looking at the most remarkable feature of teacher education programs of the countries which are successful in education like Finland, it is seen that the practical and theoretical aspects of these programs were well synthesized **(**Yıldırım and Vural, 2014).

5. Conclusion

According to the prospective teachers' answers about the level of using the knowledge and skills they have learned in professional knowledge lessons; these lessons are used sometimes in the field education. Its main reason is non-existence of a strong relationship between professional knowledge and field education in general. As a result, the knowledge and skills within the scope of professional knowledge should be given in a

more relevant way to the field education. Therefore, professional knowledge lessons in faculties of education should be designed in a way to create more active and effective application opportunities in field education. The theoretical knowledge, models, methods, techniques and strategies learned within the scope of professional knowledge lessons should be informed to prospective teachers about how to use these lessons in field education. Thus, the prospective teachers' awareness about the fact that he/she should always use the knowledge and skills learned in the professional knowledge lessons should be increased. In the research, it was emphasized how the knowledge and skills learned within the scope of professional knowledge should be used in field education (Yalçın and Şengül Avşar, 2014).

To examine the use of the knowledge and skills acquired by prospective teachers within the scope of professional knowledge in field education in more detail, the effect of the department variable was examined. In this context, the statistical differences between the five departments were examined. Depending on the findings, it was determined that the answers given about the Introduction to Educational Science (I1), Educational Psychology (I2), Research Methods in Education (I6), Measurement and Evaluation in Education (I7), Classroom Management (I10), Special Education (I12) and School Experience (I13) lessons did not differ between the departments. Differing from this finding, it was found that there are different opinions among the departments for the Principles and Methods of Teaching (I3), Instructional Technologies and Material Design (I4), Turkish Education History (I5), Turkish Education System and School Management (I8), Special Teaching Methods (I9) and Guidance (I11) lessons. Because some participants stated that they used these lessons less in field education, while some participants stated that they used these lessons more frequently in field education. This result shows that students' opinions about professional knowledge lessons are not the same in all departments. As it is emphasized in the literature, it is seen that prospective teachers' opinions about professional lessons differ according to various variables (Atik Kara and Sağlam, 2014; Beşoluk and Horzum, 2011; Taşkın and Hacıömeroğlu, 2010; Yalçın and Şengül Avşar, 2014). To determine the reason for this, the education programs in the field of education should be examined. Because the feature of preparing the curriculum of the related department in a more convenient way to use professional knowledge lessons is a factor that will affect this situation. As a matter of fact, in the research conducted within this scope, it is seen that the teacher's qualifications are a very determining and effective factor in teacher education (Atik Kara and Sağlam, 2014; Yüksel, 2009).

In the second step, the levels of using the 19 lessons in the field education of the prospective teachers in five departments were evaluated. The results show that prospective teachers did not use all the lessons they have taken in field education within the scope of their professional knowledge. The prospective teachers' problem with not using professional knowledge lessons in the field education showed similarities with the findings at this step. Because at this step, it was determined that the answers about the usage levels of the lessons differed according to the departments. When the arithmetic means of the answers were examined (given as never, rarely, sometimes, often and

always), it was seen that the answers given as sometimes is higher. This result is similar to the frequency of answers given in the previous section for using professional knowledge. In this case, it can be concluded that prospective teachers use the knowledge and skills within the scope of field education in their professional knowledge as sometimes. A different result determined at this step is that the answers given about the field education differed according to the departments. Because, when the arithmetic means of the answers between the departments were examined, it was concluded that the prospective teachers in the Turkish Education Department and the prospective teachers in the Social Studies Education Department stated that they used the knowledge and skills in the field education more within the scope of professional knowledge. In particular, Turkish department prospective teachers' answers about the level of using field education within the scope of professional knowledge support the results of the previous research (Durukan and Maden, 2011). Despite this result, making a definitive judgment among the departments may not be an adequate assessment. To reach more definite results, there is a need for studies with a higher sample size. As a result of these studies, the effectiveness of the department variable can be evaluated more comprehensively.

In the last part of the research, the prospective teachers' opinions about professional knowledge were examined and evaluated. It was found that the participants think that (1) the time given to apply professional knowledge lessons in the field education is insufficient, (2) these lessons do not adequately meet the target groups' learning characteristics, and (3) these lessons do not support the knowledge and skills in the field education adequately. These results support the findings of the research within the scope of Educational Psychology that one of the professional knowledge lessons (Camadan, Kahveci and Olgun Kılıç, 2018). The reasons for the negative thoughts expressed by the participants in this context should be examined. Depending on the results, these weaknesses in professional lessons should be strengthened in accordance with students' needs.

Apart from these three characteristics, it was determined that the participants had positive thoughts about the adequacy, functionality, suitability, and effectiveness of professional knowledge lessons and professional knowledge education. In this context, participants stated that (1) the professional knowledge lessons are functional for current educational technology, (2) knowledge and skills are sufficient to evaluate the teaching process, and (3) these lessons meet the target groups' learning needs. Based on this result, it may not be an effective assessment to say those prospective teachers in all departments agree. Because the answers given by the participants about professional knowledge and lessons were observed to differ among the departments. As a result, there is a need for empirical studies based on determining the reasons for professional knowledge lessons to be sufficient or to be insufficient. The results of other research support some of these findings (Kuran and Aktaş, 2010). At the same time, it was determined that in addition to factors such as lecturers, students, and the education system, comprehensive

knowledge of general culture and field education are effective on the success of professional knowledge (Beşoluk and Horzum, 2011; Şirin and Cesur, 2008).

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