

# The Relationship between Theory and Practice: An Examination Based on Pre-Service Teachers' Beliefs

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**Abstract:** The purpose of this study is to conduct an examination based on pre-service teachers' beliefs about the theoretical content of teacher education programmes. The research was carried out with a basic qualitative research design. The study group of the research was determined with the criterion sampling method, which is one of the purposive sampling methods. The study group of the research consisted of 134 pre-service teachers studying in three different programmes in their eighth semester. Analyses were performed on belief statements labelled with 582 in vivo codes. An extensive and detailed analysis process consisting of three stages was followed in the research. The research shows that the highest rate of pre-service teachers' beliefs about the functions of theoretical content were in the remembering category. Pre-service teachers' beliefs about the dysfunctionality of theoretical content mostly reflected their preconceptions about theoretical content. Beliefs about how the dysfunctionality of theoretical content could be overcome were related to the need to solve the problems of trust, permanence and context in teacher education programmes. In teacher education programmes, pre-service teachers need to focus on ways to deal with the functions of theoretical content at the metacognitive level and to overcome their preconceptions about theoretical content.

**Keywords:** Teacher education programmes, relationship between theory and practice in teacher education, teacher competencies

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## Introduction

Teacher education programmes undoubtedly perform an important function in raising individuals who have obtained the qualifications demanded by the 21st century. The fact that the quality of educational institutions, which have the responsibility of preparing individuals for life, cannot be superior to the quality of the teachers (Turkish Education Association, 2014), makes this function even more apparent. For this reason, the need for high-quality teacher education has become an almost universal quest (Imig & Imig, 2007). In this quest, the answers to many questions, such as "What should the teacher know?" "How should the exponentially increasing scientific knowledge be used for the development of pre-service teachers?" and "How should the relationship between theory and practice be established?" are sought. Nowadays, it is expected that teacher education should train teachers who can use scientific knowledge to shape effective educational practices. This requires a teacher education approach in which scientific knowledge related to many fields is synthesised with the knowledge of emerging approaches in education (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2020). When the conditions of the 21st century are considered, it is clear that a teacher will not be able to fulfil profession's requirements with inferences based only on their practices. Indeed, experience alone does not guarantee that the teacher will behave wisely in the classroom (Lunenberg & Korthagen, 2009). In this respect, making the theoretical knowledge required for quality teaching practices a part of the teacher's thinking and practice process constitutes a fundamental problem area.

Being a qualified teacher requires being equipped with more than mastery of the technical requirements of classroom practice (Larrivee, 2000). A professional teacher should have acquired more than the practical tools that serve to manage classroom situations. The most reliable resource for pre-service teachers to gain such a qualification is undoubtedly theoretical knowledge (Korthegan & Kessels, 1999). It is important to state here that being theoretically equipped in the area of expertise is a requirement of professionalism (Hoyle & John, 1995). Furthermore, considering the missions of universities, it is among the duties of education faculties to make available to pre-service teachers the scientific knowledge obtained from the many research studies conducted in fields related to teachers' professional lives in the last century.

Despite its importance in the training of qualified teachers, the inability of the theoretical content to support the practice is a long-standing problem. As early as the beginning of the 20th century, Dewey (1904) recognised the gap between theory and practice and discussed possible approaches to close this gap (Korthagen, 2010). When focusing on the reasons for the gap between theory and practice, the first place to look is undoubtedly teacher education programmes. In the related literature, teacher education programmes are criticised for consisting of a series of separate courses in which theory is presented with almost no connection to practice (Barone, Berliner, Blanchard, Casanova, & McGowan, 1996; Turkish Education Association, 2018). However, it is emphasised that the subjects included in the scope of today's teacher education should be handled within the framework of relational developmental systems (Lerner & Callina, 2013), in which

the relationships between the individual and the context are taken into account (Darling-Hammond et al., 2020). On the other hand, it can be said that teacher education programmes remain distant from this holistic view.

Although there are optimistic findings about the potential of teacher education for prospective teachers' mindsets and behaviours (Buitink, 2009; Stenberg, Rajala, & Hilppo, 2016; Wall, 2016), some studies show that many of the theories taught in teacher education are not internalised by teacher candidates (Eraut, 2004). Teachers often feel that there is little connection between the courses they take during their studies and their professional lives (Barone et al., 1996; Puustinen, Saentti, Koski, & Tammi, 2018). There are studies (Hobson, Malderez, Tracey, Giannakaki, Pell, & Tomlinson, 2008) that show prospective teachers believe there is no connection between their teacher education degree and their classroom teaching experience. Moreover, in a comprehensive review of international research on teacher education outcomes, it was concluded that teacher education had a limited impact on trainees' practices (Wideen, Mayer-Smith, & Moon, 1998). Zeichner and Tabachnick (1981) discussed the possibility that many concepts and educational understandings developed during pre-service teacher education were erased during field experience. In fact, teacher education never affected teacher candidates. Rust (2019), on the other hand, stated that the necessity for teacher education could be defended with very little evidence, and that teacher education failed to achieve what was expected of it.

There is an important need to examine why teacher education programmes do not have the expected impact on teacher candidates. At this point, it is seen that research studies that discuss the gap between theory and practice put forward strong arguments. First of all, it should be noted that this problem is discussed in terms of a socialisation process towards the patterns that exist in schools (Korthagen, 2010). It is stated that the social characteristics of the environment in which teachers carry out their profession may have an impact on their approach to theoretical knowledge. Another reason can be shown as beliefs. Beliefs form a basis for the teacher to make sense of the situations and events he/she encounters (Chong & Low, 2009). As Kennedy (1997) stated, prospective teachers use beliefs to evaluate new ideas related to teaching. Knowledge that is consistent with their own beliefs is defined as something new, and is accepted. Knowledge that conflicts with their beliefs is regarded as theoretical, unworkable, or simply erroneous, and is rejected. Another reason for the gap between theory and practice is seen as the structure of teacher education programmes.

Another of the reasons for the gap between theory and practice is the complexity of the teaching process. Unlike in theoretical courses, where the lessons are regarded as discrete structures, the teacher is faced with complex expectations (Darling-Hammond et al., 2020). The teacher's approach is influenced by the interaction of many elements, such as the curriculum, the context, and the students' to the instruction at a given time (Hoban, 2005). The teaching process requires a holistic judgement of what, when and how to teach concerning a particular class. Besides, teachers often have limited time to think. Therefore, they require quick and concrete answers (Eraut, 1995). What they need

differs from the abstract, systematic and general expert knowledge that teacher educators usually present to candidates (Tom, 1997).

Furthermore, it should also be remembered here that the teacher's need in his/her professional practice is not only knowledge. Some studies conducted on teacher development note that emotions play an important role in their decisions and practices (Hargreaves, 1998). However, in current teacher education approaches, this affective dimension is neglected. Finally, teachers' learning styles (Huibregtse, Korthagen, & Wubbels, 1994; Stofflett & Stoddart, 1994) can also be cited as a reason for this gap.

In addition to studies that examine the reasons for the gap between theory and practice, there are also studies that apply a range of strategies and models to address this gap. In discussing how theoretical knowledge can be built on the pre-service teacher's existing mental structures and how these mental structures can provide the source of teacher action, Korthagen and Lagerwerf's (1996) learning model draws attention. Moreover, there are empirical supports for the model's effectiveness (Korthagen, 2010). One of the most fundamental tools in eliminating the gap between theory and practice is undoubtedly reflective thinking. Within this scope, strategies that support reflective thinking (Derwent, 2015; Kim & Silver, 2016; Korkko, Kyrö-Ämmälä, & Turunen, 2016) are seen.

Furthermore, collaborative partnerships between teacher educators and teachers, in which the responsibility for pre-service teachers' development is shared, can also be counted here (Bullough & Kauchak, 1997). Models in which pre-service teachers in small groups gain direct experience with students in a real teaching and learning environment can be discussed in this context (Lampert, Beasley, Ghouseini, Kazemi, & Franke, 2010). In addition, some professional development models (lesson study) (Cajkler, Wood, Norton, Pedder, & Xu, 2015; Huang & Shimizu, 2016) are thought to be worth examining.

Pre-service teachers develop to become professional teachers through a process of active construction and reconstruction of knowledge from many different sources (Borger & Tillema, 1996). The aim of teacher education in this process is for the teacher to use the theoretical knowledge base to solve the problems he/she faces and achieve a synthesis from this knowledge base in their practices. However, teacher education encounters severe difficulties in this process. Studies conducted on this subject show that pre-service teachers' beliefs are important in their ability to make theoretical knowledge a part of their professional practice (Korthagen, 2010). Pre-service teachers' beliefs should be a starting point in bridging the gap between theory and practice. In this respect, studies examining pre-service teachers' beliefs on an analytical level and with a qualitative understanding are very valuable in teacher education. Beliefs are regarded as one of the valuable cognitive structures for systematically examining and understanding the teacher's decisions and practices in the classroom. In fact, Pajares (1992) stated that efforts to understand the teacher should form the centre of educational research and that belief studies are the most effective way of doing this. Belief studies enable teacher education to develop effective, accurate, and conscious teaching decisions and practices

(Levin & He, 2008; Stenberg, Karlsson, Pitkaniemi, & Maaranen, 2014) because without knowing how the prospective teacher thinks, it is highly unlikely that his or her mindset can be changed. Although the gap between theory and practice constitutes an important subject area, it is seen that it is discussed in only a few studies in the national literature. Examining the relevant international literature, one finds that there are studies examining how teacher candidates' teaching competence develops over time and the relative effects of teacher education programs and professional socialization on the development of teaching competence (Brouwer & Korthagen, 2005); the perceptions of pre-service teachers that lead to inconsistency between theory and practice. The characteristics of teacher education programs that help bridge the theory-practice gap (Cheng, Cheng, & Tang, 2010). The reasons for the theory-practice gap (Korthagen, 2010); Teacher education models that address the theory-practice gap (Gaudin & Chaliès, 2015; Grossman, Hammerness, & McDonald, 2009; Grushka, McLeod, & Reynolds, 2005; Huang & Shimizu, 2016; Korthagen & Kessels, 1999; Korthagen, 2011; Unver, 2014; Zeichner, 2010); and the impact of theory and practice in teacher education (Harste, Leland, Schmidt, Vasquez, & Ociepka, 2002). It is thought that this study will contribute to the literature in terms of examining a wide variety of pre-service teachers' beliefs about theoretical content on an analytical level with a qualitative understanding.

Within the scope of teacher education programmes, simply conveying important pedagogical knowledge and hoping that teacher candidates will apply this knowledge in their classrooms is an unrealistic approach. In order to eliminate the gap between theory and practice, many dimensions included in the scope of teacher education pedagogy, especially good familiarity with the belief structures that teacher candidates bring with them, should be taken into account. When it is considered that pre-service teachers' beliefs are determinative of their level of benefit from teacher education (Kennedy, 1997), it can be better understood how important it is to examine pre-service teachers' beliefs about theoretical content. This examination also makes it possible to draw meaningful conclusions about how the gap between theory and practice in teacher education programmes can be bridged.

In this study, which examines pre-service teachers' beliefs about the theoretical content of teacher education programmes, answers were sought specifically to the following questions:

1. What are pre-service teachers' beliefs about the functions of theoretical content?
2. What are pre-service teachers' beliefs about the reasons for the dysfunctionality of theoretical content?
3. What are pre-service teachers' beliefs about overcoming the dysfunctionality of theoretical content?

## Method

### Research Design

A basic qualitative research design, which is included in the qualitative research paradigm, was adopted in the study. Researchers who apply the basic qualitative research design are concerned with how people interpret their lives, how they construct their worlds, and what meaning they give to their experiences. Its primary purpose is to reveal and interpret these meanings (Merriam, 2009). This research focuses on how pre-service teachers interpret the theoretical content of teacher education programmes, how they build their relationship with the theoretical content, and how they perceive their experiences with the theoretical content. A basic qualitative research design was adopted in this research to reveal, understand and explain the teacher candidates' beliefs about the theoretical content and to obtain the basic patterns related to these structures. Merriam and Tisdell (2016) stated that the basic qualitative research design is the most widely used qualitative research design in education and other fields. Although basic qualitative research has all the main and common features of a qualitative research study, unlike other qualitative research designs, it is not specific based on several distinctive features (Merriam & Tisdell, 2016). In order to reveal pre-service teachers' beliefs about theoretical content, open-ended questions were used that allowed them to express their beliefs on the issues that the research problems focused on. An in-depth analysis process was followed for the obtained data set to understand and explain the teacher candidates' beliefs revealed by the data collection tool.

### Study Group

The research study group was determined by the criterion sampling method of purposive sampling. Purposive sampling allows for in-depth study of situations that are considered to have the potential to yield rich data concerning answering the research problem (Patton, 2014). The criterion sampling method is based on the idea of studying a group that meets a predetermined set of criteria. In this study, the key criterion for determining the pre-service teachers included in the study group was that they had taken all the theoretical courses included in the teacher education programmes in line with the research aims. Following this key criterion, 134 pre-service teachers studying in their eighth semester at the education faculty of a state university were included in the research voluntarily. Information about the characteristics of the study group is given in Table 1.

Table 1.

#### Study Group

	Preschool Teaching	Elementary Teaching	Turkish Teaching	Total
Female	38	34	30	102
Male	3	19	10	32
Total	41	53	40	134

## Data Collection

To reveal the beliefs held by the pre-service teachers within the scope of the subjects focused on in the research, it is necessary to make them visible. The best way to do this is to utilise research methods that make it possible to obtain in-depth data from teacher candidates (Luft & Roehrig, 2007). Pajares (1992) stated that to understand teachers' beliefs, tools should be used that enable deep and comprehensive analyses of them. In this regard, it was decided that it would be appropriate to use open-ended questions that would allow the pre-service teachers to express their beliefs in the context of the relevant topic. In the process of developing the data collection tool, first of all, a literature review was conducted to establish the theoretical bases of the opinion form (He, Levin & Li, 2011; Korthagen, 2011; Levin & He, 2008; Pitkaniemi, Karlsson & Stenberg, 2014). Following this process, data collection instruments used in the literature for similar purposes were examined for content and structure (Canbay & Beceren, 2012; Cheng, Chan, Tang, & Cheng, 2009; Fives & Buehl, 2008; He et al., 2011; Luft & Roehring, 2007), and an opinion questionnaire was developed consisting of three sections and six questions corresponding to the three sub-problems of the study (two different questions for each sub-problem). By this means, detailed information was obtained within the scope of the relevant topic. The draft opinion form was administered to four pre-service teachers studying different programmes. After the trial implementation of the data collection tool and the data, three expert academicians in the field were consulted for their opinions. The experts were interviewed face to face. Based on the views obtained from the experts, the necessary revisions were made and the form was given its final shape.

The research data were collected during the last week of May. In this way, it was ensured that the pre-service teachers had sufficient experience in all the theoretical courses in the teacher education programmes. Research permission for this study was obtained from the university's Social and Human Sciences Research Ethics Committee where the pre-service teachers studied. The data collection tool was delivered via a digital platform to teacher candidates in five programmes in the education faculty where the research was carried out, but data could be obtained from teacher candidates in only three programmes. No response was achieved from the other two programmes. During the data collection process, the researcher's contact information was shared with the participants, and it was stated that they could contact the researcher concerning any questions about the process. The trial implementation carried out on the opinion form revealed that the time required to answer the questions varied between 20 minutes and 40 minutes. Responses were obtained at the desired level from all of the data obtained within the scope of the research. All the data obtained from the participants were used in the analysis process.

## Data Analysis

In basic qualitative research, data analysis involves identifying repetitive patterns by characterising the data. The findings are themes supported by these repeated patterns

or by the data from which they are derived (Merriam, 2009). The three-stage data analysis process, in which the data analysis requirements of basic qualitative research were observed, is explained in detail below.

**First stage (open coding).** In the first stage of the analysis, open coding was performed on the data set. The whole data set was read line by line in the open coding stage. In this process, the data was divided into sentences, or expressions that formed a meaningful whole, reflecting the pre-service teachers’ beliefs. After this procedure, 582 expressions reflecting beliefs were identified from the data set. Each expression was coded using an *in vivo* code in the open coding process. *In vivo* codes are codes created using words expressed by the interviewees themselves (Strauss & Corbin, 1997). *In vivo* codes are words or phrases that best correspond to the meaning of the pre-service teacher’s belief statement. Selecting the code names from among the teacher candidates’ statements prevented errors from the researcher in the coding process. In this way, the aim was to minimise the researcher’s influence. In the research, all analysis was carried out on these codes. Following this process, a total of 582 belief statements, 264 from preschool teaching, 186 from elementary teaching, and 132 from Turkish teaching programmes, were labelled using *in vivo* codes.

**Second stage.** The process carried out at this stage is axial coding. Axial coding is the process of associating codes with themes, and is the process of classifying the data, which are broken down to the smallest detail with open coding, around themes. The purpose of axial coding is to classify the *in vivo* codes that have similar characteristics (Guler, Halıcioglu & Tasgin, 2013). At this stage, the question “What is this statement about?” was addressed to the coded belief statements. In this process, the statements were re-read and classified based on the subjects judged to be related. At this stage, each of the coded expressions was placed in the context of the topic to which it referred. The themes included in the study and the number of beliefs included in each theme are shown in Table 2.

**Table 2.**

*Appearance of Codes after Second Stage of Analysis*

	Functions of theoretical content	Reasons for the dysfunctionality of theoretical content	How the dysfunctionality of theoretical content can be overcome
Preschool Teaching	123	54	87
Elementary Teaching	112	15	59
Turkish Teaching	39	42	51
Total	274	111	197

**Third stage.** In the first sub-problem of the research, the pre-service teachers’ beliefs about the functions of the theoretical content were examined. After the first two stages of the analysis, it was seen that the pre-service teachers’ beliefs about the functions of the theoretical content could be analysed based on cognitive levels. The reason for this was that the pre-service teachers explained the functions of the theoretical content based on the knowledge and skills they believed this knowledge had endowed in them. The revised



Bloom Taxonomy was used for this examination. It is seen that a similar unit of analysis was used by Hong, Chen, Chai, & Chan (2011). In the research conducted by Hong et al. (2011), the revised Bloom Taxonomy was used to evaluate pre-service teachers' beliefs about the relationship between theory and practice (p. 473). Within the scope of the analysis, an analysis table was created by examining the related taxonomy (Anderson et al., 2010). In the first step of the analysis, coding was done with words/word groups showing at which cognitive level the function of theoretical knowledge was dealt with. At the same time, analytical notes, related to the pre-service teachers' assumptions about the function of the theoretical content, were written for each code. In qualitative data analysis, analytical notes are recommended for deepening understanding of the codes (Saldana, 2019). At this stage of the analysis, by reading the *in vivo* code and the analytical note together, it was decided which cognitive level corresponded to the function of theoretical knowledge perceived by the pre-service teacher in the analysis table. The explanations of cognitive levels in the findings section are based on the classification by Anderson et al. (2010).

To answer the other sub-problems of the research, statements expressing beliefs, classified based on the subjects they were related to, were classified based on the viewpoints they reflected. This stage, in which the continuous comparison method of analysis was used, is defined by Glaser (1965) as the comparison of data with other data coded under the same category. The analysis at this stage continued until the categories became saturated. At this analysis stage, statements expressing beliefs were classified in clusters named using letters, without giving any names based on their point of view. The necessary merging and separation processes were continued by continually comparing the clusters with each other. Following the repeated readings, the naming process was not carried out until it was decided that the classification was complete. After completing the classification process, the naming process was carried out using words or phrases that were thought to best match the classification clusters in terms of content. Following this analysis, five categories were obtained in the first theme, two in the second theme, and three in the third theme. The categories obtained after the third stage of the analysis, and the distribution of beliefs based on the categories, are shown in Table 3.

**Table 3.**  
*Appearance of Codes after Third Stage of Analysis*

Functions of theoretical content	Reasons for the dysfunctionality of theoretical content			How the dysfunctionality of theoretical content can be overcome							
	PT*	ET**	TT***	PT	ET	TT	PT	ET	TT		
Remembering	45	38	20	Preconceptions	20	10	19	Trust Problem	11	9	11
Understanding	20	9	4	Type of Instruction	34	5	23	Permanence Problem	17	18	5
Applying	35	25	11					Context Problem	59	32	35
Analysing	16	29	3								
Creating	7	11	1								
	123	112	39		54	15	42		87	59	51

\* Preschool Teaching programme  
 \*\* Elementary Teaching programme  
 \*\*\* Turkish Teaching programme

## Credibility and Ethics

In this research, the credibility, transferability and consistency requirements were fulfilled. One way to ensure credibility in qualitative research is to explain in detail the number and characteristics of the participants, how they are selected, and the data collection tools and analysis techniques used in the research (Creswell & Miller, 2000). This information is explained in detail under the method heading of the research. To fulfil the transferability requirement of research, it is recommended that detailed description and sample selection strategies are used (Meriam, 2009). The criterion sampling method was used in the study. In this way, a study group was worked with in which a rich data set could be accessed to answer the research questions. The study group was a group that had both taken the theoretical courses of the teacher education programme and had two semesters of field experience thanks to the teaching practice courses. In this respect, the participants had rich experiences both in the practice process and in terms of theoretical knowledge. Within the scope of the detailed description, direct quotations for each subcategory are presented in the findings section. All research analyses were performed on *in vivo* codes. By this means, the participants' statements directly constitute the most basic unit of analysis. To increase credibility in qualitative research, an expert review strategy is recommended (Meriam, 2009; Patton, 2014). In this study, the opinions of three experts were sought during the development of the data collection instrument. After the analysis of consistency among coders was completed, the data and the results of the analysis were shared with a subject matter expert. The expert was asked to evaluate all the codes, subcategories, categories and themes of the analysis. In addition, the expert was asked to explain the erroneous parts, correct them and perform the analysis that was deemed appropriate. After expert feedback, inter-coder agreement was calculated to be .87 using the formula of Miles and Huberman (Miles & Huberman, 1994). Then, a consensus study was carried out on the findings of the analysis by meeting with the expert. In this process, both researchers reached a consensus on the ultimate findings of the study.

## Role of the Researcher

My professional experience as a teacher educator has prompted me to delve deeper into pre-service teachers' beliefs about theoretical content. In the interviews and observations I have made with teacher candidates within the scope of the courses I have given, I have always been surprised to see that they handled their theoretical courses in very different ways from each other. While some candidates were nourished with theoretical content in terms of thoughts and actions, some were detached from or even at odds with these courses. My observations indicated that teacher candidates' beliefs about theoretical courses also created observable changes in their professional reasoning processes. For example, I realised that the beliefs held by teacher candidates on this subject were effective on many behaviours such as analysing the nature of the class and utilising scientific resources in the process of fulfilling professional requirements. This finding led me to investigate teacher candidates' beliefs about theoretical courses by interviewing as

many different teacher candidates as possible using the qualitative research method because I wanted to gain a deep understanding of prospective teachers' beliefs about theoretical content and understand the meanings and preferences underlying the patterns. I felt deeply that this insight would be a guide for the development of teacher education programmes that serve the purpose of making teachers' theoretical knowledge a part of their professional thoughts and actions, since the research shed light on precisely the cognitive area that we focus on in teacher education. During the research, I was in the role of a teacher educator who wished to increase the quality of teacher education. Being a teacher educator who regards theoretical courses as an undoubted necessity for prospective teachers and who teaches these courses has impacted the way I have approached and interpreted this research. In addition, my teacher education experiences and my readings of the literature on the gap between theory and practice have provided me with a strong background in the research process. The observations and interviews I have conducted regularly each semester about the benefits of the courses I teach have supported me in the research process. The research findings have deepened my perspective on the ways pre-service teachers understand the relationship between theory and practice. I have achieved clear insights about what I can do during the teacher education process to enable teacher candidates to absorb the theoretical content. Moreover, this process has led me to further investigate ideas for testing and deepening the findings I have made.

## **Research Context**

Trying to improve the quality of teacher education is on the agenda in Turkey, as it is everywhere in the world. Turkey has a long and deep-rooted history of teacher education. In Turkey, teacher education was linked to education institutes from the 1970s onwards; in the 1980s, however, it was linked to universities. Linking teacher education to universities was an important development in terms of constructing teacher education on a scientific basis. However, this process was criticised for introducing a teacher education approach that gave prominence to theory and increasingly moved away from practice. Within this framework, the curriculum that began implementation in 1998 is one that was restructured as part of the World Bank-funded National Education Development Project (1993-1999). The programmes developed during the restructuring process have an interdisciplinary and practice-coordinated approach that starts from the basic fields of educational sciences and focuses on teacher competencies. The majority of courses have practice periods. However, based on criticisms of this programme, the Council of Higher Education (YOK) changed the teacher education programmes in 2006 that reintroduced some of the former professional knowledge courses and removed the school experience course and the practice periods of the professional knowledge courses. In the revisions made in the following years, while the theoretical course load was increased, the scope of practice was narrowed. Today, YOK is conducting a new study on teacher education programmes. Draft programmes developed within the scope of these studies are criticised by experts since, rather than an interdisciplinary and practice-oriented approach, they consist of many dissociated areas of knowledge. They

reflect a teaching approach that is distanced from practice (Turkish Education Association, 2018). In the forty since the faculties of education were connected to universities, the question of how to establish the relationship between theory and practice in teacher education has constituted an important problem. How this relationship can be established is undoubtedly a multidimensional and comprehensive issue. However, examining pre-service teachers' beliefs on this subject with an approach enabled by qualitative research will be a guide in shedding light on this problem, for which a solution has been sought for many years.

## Findings

### Findings Regarding the First Sub-problem of the Study

In the first sub-problem of the study, pre-service teachers' beliefs about the functions of theoretical content were examined. It has been observed that the examined beliefs can be classified under five categories. Explanations of the findings obtained after the analysis are given in Table 4.

**Table 4.**

*Pre-service Teachers' Beliefs about the Functions of Theoretical Content*

Category	Explanation	Subcategory	f	%
Remembering	Theoretical content is justified on the basis of mental processes at the level of recognising and recalling.	Preparation for the KPSS	4	1.5
		General Knowledge	99	36.1
Understanding	Theoretical content is justified on the basis of mental processes such as interpreting, classifying, inferring, and comparing.	Self-knowledge	8	2.9
		Broadening one's perspective	25	9.1
Applying	Theoretical content is justified on the basis of mental processes such as performing, carrying out and using.	Guiding implementation of the teaching process	71	25.9
Analysing	Theoretical content is justified on the basis of mental processes such as dissecting, organising and scrutinising.	Examining classroom problems on an analytical level	35	12.8
		Analysing the reasons for learning theoretical content	10	3.6
		Analysing the students	3	1.2
Creating	Theoretical content is justified on the basis of mental processes such as designing, revising, and structuring.	Creating original understanding and practice	19	6.9

The study reveals that a large percentage of pre-service teachers' beliefs about theoretical content functions were in the remembering category. Among some of the beliefs under this category, it was stated that the theoretical content fulfils the function of preparing for the KPSS exam.

There is a reality called the KPSS. Theoretical courses may be included for this exam, which is mostly based on rote learning (Preschool Teaching / Female / P32)

When entering the profession, the exam we will take is based on rote learning and is theoretical. For this reason, this course is of great benefit to us in preparing for the KPSS. It has made me aware of the topics that I need to know for my appointment (Elementary Teaching / Female / P32)

In another subcategory of this category, it was seen that the teacher candidates stated that the theoretical content assumed the function of increasing their general knowledge level.

Theoretical courses can only give us information about certain subjects. For this reason, I think that they increase our knowledge in areas that I can call general knowledge. We acquire knowledge about certain things through theory (Turkish Teaching / Male / P6).

I think it is necessary to give general information to raise awareness in us. It equips us in terms of knowledge. It increases our general knowledge. It has the advantage of providing us with more information in a short time (Preschool Teaching / Female / K32)

Another category in the classification of the functions of theoretical content is *understanding*. In this category, the functions of theoretical knowledge are explained based on mental processes included in the level of understanding, such as interpreting, classifying, inferring and comparing. This category was analysed under two subcategories, the first of which is self-knowledge. In the self-knowledge subcategory, the pre-service teachers discussed the relationships between the theoretical content and the personal developmental processes.

It allows the individual to know themselves. For example, realising what stage of development you are in. I can see the changes in myself according to the developmental periods. By this means, I can interpret what kind of developmental tasks await me in the future. It has enabled me to see what I did not know. Thanks to the theoretical lessons, I have realised my preconceptions. I have concluded that some of the things I used to do were wrong. I can interpret the events in my own life with the things I have learned (Preschool Teaching / Female / P40).

I think that there are many benefits for the individual to get to know themselves. It has developed my power to interpret my life. It has made me understand what it is to be human, the value that I have. I have developed awareness of the things that make me who I am. For example, I can interpret why I am such a person today, the reasons for my preferences, my personality, and my reactions (Elementary Teaching / Female / P13).

The other subcategory in the *understanding* category is broadening one's perspective. Here, pre-service teachers discussed theoretical knowledge based on their relationship with the world. It was stated that their perspectives were broadened thanks to the

theoretical content. It is seen that in this process of broadening perspectives, mental processes were expressed at the level of understanding.

It contributes to the broadening and change of our perspective. For example, in the kindergarten I attended when I was little, my teacher was angry because a tree could not be pink, or he was trying to teach us four operations by getting angry. But thanks to the theoretical knowledge, I was able to understand why my teacher's behaviour was wrong (Preschool Teaching / Female / P40).

It has enabled me to see things from different perspectives. I saw that there were ten different views about an event. These perspectives have helped my knowledge and ideas to grow. It has enabled me to compare the knowledge I already had with the new knowledge and ideas I have learned and break down my stereotypes (Preschool Teaching / Female / P19).

It was observed that some of the pre-service teachers explained the functions of theoretical content in the *applying* category. Among the beliefs in this category, the theoretical content was justified on the basis of mental processes at the applying level, such as performing, using and carrying out.

It prevented the emergence of panic and obscurity when I saw the list of things I had to do when I became a teacher. Thanks to the theoretical lessons, I already knew where to do what and how to carry out the phases of planning, implementation and evaluation. This allowed me to use this information when I needed it in the classroom (Elementary Teaching / Female / P38).

Of course, the benefit of theoretical courses is enormous, as thanks to these lessons, I knew how to manage the implementation process from start to finish. I had no difficulty regarding how I would carry out my practices in the classroom. I used this information in the planning and implementation process. I applied the things I knew, from beginning the lesson to attracting the students' attention (Preschool Teaching / Female / P36).

It is also noteworthy that among the beliefs in this category, the functions of theoretical content were emphasised in qualitative subjects such as permanence in learning: "*It showed what I need to do for permanent learning... (Preschool Teaching / Female / P5)*"; effectiveness: "... It enabled me to know which ways I should follow in order to teach the lessons effectively to students... (Preschool Teaching / Female / P5)"; and supporting high-order thinking skills: "Thanks to the theoretical lessons, I was able to direct students to think at a higher level, not merely at the remembering level (Elementary Teaching / Female / P5)". This category also includes the fact that the theoretical content promotes the ability to deal with problems in the classroom: "The theoretical lessons show pre-service prospective teachers what negative situations they are likely to encounter in the classroom and what their intervention behaviour should be (Elementary Teaching / Female / P31)."

The beliefs with which pre-service teachers discussed the functions of theoretical content at the *analysing* level are included in this category. While explaining the functions of theoretical content in the beliefs included in this category, it is seen that mental processes such as dissecting, organising and scrutinising were mentioned. One of the subcategories in the analysing category emphasised that the theoretical content provided competence in dealing with the class on an analytical level.

Theory is the teacher's cognition. For this reason, the theoretical courses influenced my way of thinking. The theoretical lessons ask us to question. In fact, this information is given to

analyse the things we encounter and find new solutions. That is why it distanced me from simple rote solutions. It enabled us to analyse the classroom events and achieve syntheses (Elementary Teaching / Male / P23).

Another subcategory of this category is analysis of the reasons for learning the theoretical content. "I believe it helps us to understand what we need to know and why. I was able to scrutinise better the teaching practicum and the reason for all the other courses I took at the faculty. It allowed me to understand what kind of meaning these courses had in my training as a teacher" (Preschool Education / Female / P37). In the last subcategory of this category, the function assumed by theoretical knowledge in analysing students was mentioned.

There are many hidden reasons underlying children's behaviour. We cannot understand these without our theoretical knowledge base. Each piece of theoretical information received enables predictions about the situations to be encountered. Thanks to the theoretical lessons, we can correctly analyse children's characteristics and needs (Preschool Teaching / Female / P44).

We need to discover why they do what they do or what they actually need. We also need to take individual differences into account. When children exhibit a behaviour, the various reasons underlying this behaviour distance us from rote solutions. We can scrutinise the characteristics we observe in children with theoretical information and generate solutions (Elementary Teaching / Female / P27).

Finally, it is seen that the functions of theoretical content were discussed at the level of *creating*. It was observed that the least number of beliefs were in this category. In the beliefs included here, pre-service teachers stated that the theoretical content would be used to create their own teaching identity. The necessity of theoretical content was discussed based on mental processes such as planning, creating and producing.

It allows us to create ourselves so that students can convert these into practice themselves. It enables us to form our own teaching approach. The delivery of quality theoretical courses may be the responsibility of the school. However, we also need to have the ability to correctly create our way in practice by synthesising the knowledge we have learned (Preschool Teaching / Female / P8).

It offers information for the educational understanding that we will create ourselves. It fosters a way of thinking and knowledge accumulation specific to the profession. This year, I have tried to create my educational understanding by thinking about what was taught, implementing it in the classroom, and then thinking about the implementation again. We made plans together with our advisor in the teaching practicum. We used the theoretical knowledge in that plan. I then implemented that plan and tried to connect the two by filling out the reflective thinking forms. Here, the theoretical knowledge enabled me to create my own teacher personality, continuing and continuing (Preschool Teaching / Female / P42).

## **Findings Regarding the Second Sub-problem of the Study**

The second sub-problem of the study examined how pre-service teachers justified the dysfunctionality of theoretical knowledge. Findings related to this sub-problem are shown below.

**Table 5.**

*Reasons for Dysfunctionality of Theoretical Content*

Category	Preconceptions about Theoretical Content	Way of Teaching Theoretical Content
Subcategory	Theory is one thing, practice is another!	The equivalent of the theoretical content was not demonstrated in practice I have forgotten the theoretical content

The pre-service teachers' explanations about the dysfunctionality of the theoretical content were examined in two categories. One of these was the preconceptions that pre-service teachers had towards the theoretical content, and the other was the way of teaching the theoretical content. Pre-service teachers explained their beliefs about the theoretical content with repeated stereotypes in the category of preconceptions. It was observed that the beliefs expressed were based on erroneous knowledge about what the theory was and how it was developed. The nature of the beliefs that pre-service teachers held were such as to prevent them from making the theoretical content a part of their professional thinking and practice. Some pre-service teachers explained the reasons for the dysfunctionality of theoretical content as that the theory and practice were completely different from each other.

As the name implies, theoretical courses can only teach us the theory (Turkish Teaching / Male / P5).

Many things change when you move to practice. I believe that practice and theory are very different from each other (Elementary Teaching / Male / P22).

Theoretical knowledge does not correspond with the situations we encounter in the classroom. Unfortunately, the process does not operate as it is written (Preschool Education / Female / P15).

The other category related to the reasons for the dysfunctionality of theoretical content was the way theoretical content was taught. One of the subcategories included in this category emphasised that the theoretical content was easily and quickly forgotten.

Theoretical knowledge is forgotten in a short time. While struggling with a lot of problems in the classroom, none of the theoretical knowledge came to my mind. I could not remember it (Turkish Teaching / Male / P6). I realised that I had forgotten everything I had learned.

Theoretical knowledge is not permanent. You cannot be certain of the accuracy of the information you remember, either. I have to review the source to make sure it is correct. However, I can remember the knowledge I have acquired more easily through experience. I do not need to test it again. Therefore, theoretical knowledge is like a batch of subjects that need to be re-learned (Preschool Education / Female / P10).

In another subcategory, the reason for the dysfunctionality of theoretical content was that the direct equivalents of the theoretical contents were not seen concretely in the classroom.

Unless I see the theoretical lessons in practice, I think these lessons have no function. When they are not supported by practice, they cannot go beyond remaining on paper (Turkish Teaching / Male / P22).



In teacher education, experience is more effective than theory. All the theoretical knowledge we see is meaningless when its equivalent is not seen in practice. The more the theory is put into practice, the more meaningful and applicable to teaching practice it becomes (Preschool Teaching / Female / P4).

## Findings Regarding the Third Sub-problem of the Study

In the third sub-problem of the study, pre-service teachers' beliefs about how to overcome the dysfunctionality of the theoretical content were examined. Findings related to this sub-problem are shown in Table 6.

**Table 6.**

### *Ways to Overcome the Dysfunctionality of Theoretical Content*

Category	Trust Problem	Permanence Problem	Context Problem
Subcategory	I must have learning experiences that will give me confidence in the theory.	I must be actively involved in the process of learning the theoretical content	I need to understand how theoretical knowledge functions within different possibilities
		I must be involved in teaching practices that will ensure permanence in teaching the theoretical content.	I need to adapt the theoretical content on my own terms
			I need to see the use of theoretical content in problem contexts

This examination clarified the problem areas that teacher education programmes need to overcome to eliminate the gap between theory and practice. These are the trust problem, the permanence problem, and the context problem. Among the beliefs in the trust problem category, the general understanding was towards the need to have experiences that would provide trust in theoretical knowledge and enable understanding of the meaning of theoretical knowledge in teacher education programmes.

Yes, we learned the information, but how should we apply it? We may interpret the information as incorrect or deficient. We may also use the theoretical knowledge we have learned incorrectly in the classroom. To avoid this, I need to trust that information. From my point of view, what I have learned practically, rather than theoretical knowledge, has guided me more in the implementation process (Turkish Teaching / Female / P16).

While teaching something to a child at university, I saw that I remained incapable in case of any deficiency, since everything was taught positively as if it were normal. The child can say, "Enough, I don't want to do it, I want to play." I fell short there. I understood that while the theoretical content taught us the ideal, it did not prepare us for what we would experience in the classroom. Therefore, my confidence in this information about classroom practices was shaken (Preschool Teaching / Female / P8).

On the issue of permanence, there were beliefs related to the need to overcome the problem of theoretical content not finding a place in the mental world of prospective

teachers or in their teaching practices because they are not actively engaged in the learning process and do not know teaching practices that ensure permanence.

Activities in which the student will be active should be conducted. Practice is necessary for it to be permanent. If these courses are supported with plenty of examples and in-class activities rather than being taught in the classroom, they become more productive. Here, I think that the main duty falls on the teacher who teaches the course (Turkish Teaching / Female / P10).

For theoretical knowledge to support our practice, that knowledge must be made permanent. Theoretical courses should be taught more productively. Even though it was theory oriented, there were lessons that I applied in practice. If the topics taught are not supported by activities, they will not stick in the memory (Elementary Teaching / Female / P52).

Finally, it is seen that the context problems of teacher education programmes need to be solved. As can be seen from statements such as "I have to see how the theory works within different possibilities... (Preschool Teaching / Female / P42)"; "We must learn in real or possible situations within all possibilities where the theory applies... (Turkish Teaching / Female / P4)"; "I have to adapt the theory on my own terms... (Elementary Teaching/ Female / P54)"; "I need to know when and how to apply... (Turkish Teaching / Female / P32)"; "I need to see the use of theoretical knowledge in problem contexts (Preschool Teaching / Female / P36)", the emphasis on the need to deal with theoretical knowledge in a context-based approach draws attention.

We need to observe and experience the theoretical knowledge in a real classroom setting. When we came to the implementation part of the lesson plan we had designed, I saw that several different factors came into play, such as student psychology, inadequacy of students' previous knowledge, an annual plan we had to comply with and weekly lesson plans according to this plan, activity plans, students' expectations, practicum teachers' expectations, the inefficiency of distance education, proper communication with students, etc. (Elementary Teaching / Female / P33).

Environments should be provided where theoretical knowledge can be transformed into practice. I think that in theoretical courses, situations that we may encounter should be discussed and animated. My suggestion is to enrich the courses in terms of which solutions we can develop with case examples of theoretical knowledge, slices of real life, and possible situations that may arise (Preschool Teaching/ Female / P46).

## Conclusion and Discussion

In this study, an examination was carried out based on the beliefs held by pre-service teachers about the theoretical content of teacher education programmes. It is intended that the research findings will contribute to our understanding of the decisions and practices related to theoretical content faced by pre-service teachers during the teacher education process. It is important to view the research findings as a description that allows conclusions to be drawn about the questions, "What revisions can be made to teacher education programmes so that teacher candidates can benefit from the highest level theoretical content?" and "How can teacher candidates' beliefs based on theoretical knowledge be translated into a teacher profile in the future?" These questions are of vital importance for policy makers and teacher educators who aim to align teachers' qualifications with the requirements of the future world. Furthermore, it is thought that

the research findings will guide efforts to shape teacher education programmes and models based on teachers' beliefs and needs.

In this study, answers to three research questions were sought. In the first sub-problem, prospective teachers' perspectives and beliefs about the functions of theoretical content were examined. In this examination, it was seen that the teacher candidates justified the functions of theoretical content based on several mental skills. The mental skills that pre-service teachers used in explaining these reasons were classified under five categories. These categories are remembering, understanding, applying, analysing and creating. In the second sub-problem, pre-service teachers' beliefs about the dysfunctionality of theoretical content were examined. In this examination, pre-service teachers' preconceptions that theory and practice are different phenomena from each other were encountered in the first category. Another category for the causes of the dysfunctionality of theoretical content included critical beliefs about how theoretical knowledge is taught. Finally, in the research, beliefs about what should be done to overcome the dysfunctionality of theoretical content were examined. The findings obtained in this examination clarified the problem areas that teacher education programmes need to overcome. These problem areas are the trust problem, permanence problem and context problem.

When the findings related to the first sub-problem of the study were examined, it was seen that the pre-service teachers explained the functions of theoretical content with different cognitive requirements. It is thought that the difference observed in pre-service teachers' beliefs will also be determinative of their level of benefiting from theoretical content in their professional lives. It is predicted that a prospective teacher who justifies the theoretical content only at the remembering level and a pre-service teacher who justifies it at the creating level will establish relationships with the theoretical content at different levels. Indeed, Hong et al. (2011) considered pre-service teachers' explanations of the functions of theoretical content with high-level mental skills to be an indicator of their professional development. In this respect, by determining teacher candidates' beliefs that prevent them from establishing an advanced relationship with theoretical knowledge, it is very important to focus on these beliefs in the teacher education process. Studies revealing that teachers' professional beliefs can undergo change (Bikmaz, 2006; Hollingsworth, 1989; Richardson, 1996; Wall, 2016) are promising at this point. Here, it is necessary to focus on how different beliefs about the functions of theoretical content can be turned into a teacher profile in the future. Considering that beliefs are used in the evaluation of pre-service teachers' new ideas about their profession (Kennedy, 1997; Richardson, 1996), it is possible to make predictions based on the beliefs of prospective teachers regarding the extent to which they will make theoretical content a part of their professional thinking and action. In the teacher education process, the ways in which teacher candidates have experiences whereby they will comprehend the necessity of theoretical content should be emphasised.

Teachers are autonomous adaptive professionals depending on the extent to which they utilise theoretical content. It is predicted that a teacher who does not benefit from theoretical knowledge for his/her professional development from teacher education

onwards will not have high-level professional qualities. Indeed, experience alone does not guarantee that the teacher will make wise decisions in the classroom (Lunenberg & Korthegan, 2009). It is among the main duties of education faculties to embed in prospective teachers the awareness that theoretical content is an inseparable part of their professional development. Otherwise, there is a danger that schools' mission of "realising learning" cannot be nourished from scientific sources. In such a case, there is a big question mark as to the level of learning outcomes. Without correcting the problematic relationship that teacher candidates have established with theoretical content, it is possible to predict that policy and academic efforts to increase teachers' qualifications and the professionalism of the profession will not be reflected in practice. In the study, it was seen that pre-service teachers had more progressive beliefs towards theoretical content to the extent that they could comprehend the multidimensional and complex nature of the teaching profession. In this respect, it is thought that a teacher education approach should be adopted that allows pre-service teachers to realise and analyse the complex problems of their classroom experiences that need theoretical knowledge. It should be ensured that teacher candidates view their profession within a holistic structure. This situation shows similarity with the issue that Morin (2010) discussed under the heading of the specialisation problem. It is possible to see similar suggestions in the studies by Grossman et al. (2009) and Korthagen (2011), who proposed models for integrating theory and practice in teacher education programmes.

In the second sub-problem of the study, prospective teachers' beliefs about the reasons for the dysfunctionality of theoretical content were examined. In the study, it was seen that pre-service teachers had preconceptions towards theoretical knowledge. This finding is consistent with the findings of Korthagen and Kessels (1999) in their article discussing the reasons for the gap between theory and practice. In their study, it was found that beliefs in the category of prejudice contained repeated, stereotypical statements that contained errors related to theoretical knowledge. Among these beliefs, the belief that "theory is one thing, practice is another" was encountered. In these beliefs, it was seen that there was a deficient learning in the sense that the theory is developed based on observations and experiences that are used to explain any event, case or phenomenon, and that are constantly verified. It was observed that these preconceptions, which arose from erroneous learning about the nature of theoretical knowledge, did not change during teacher education. Another subcategory related to the reasons for the dysfunctionality of theoretical content was related to the necessity of seeing the exact equivalent of theoretical knowledge in concrete events in the classroom. Theoretical knowledge is general, abstract and rational. In fact, the pre-service teacher is expected to adapt the theoretical knowledge based on his/her own situation. In this case, stereotypes indicating the pre-service teacher's erroneous learning about the nature of theoretical knowledge were also encountered. It is known that these judgements play a powerful role in the extent to which pre-service teachers benefit from teacher education programmes (Scardamalia & Bereiter, 1989). This study finding corresponds with that of Korthagen and Kessels (1999). They stated that pre-service teachers began their teacher education with strong beliefs about education and training (Wubbels, 1992), but that these were not always compatible with the theories taught in teacher education. In fact,

the study shows that teacher candidates held beliefs that theoretical knowledge had no relation to practice. Furthermore, the study shows that pre-service teachers who were about to complete their teacher education still maintained their preconceptions. This finding also supports the findings that preconceptions are remarkably resistant to change (Joram & Gabriele, 1998). Pre-service teachers' firm roots can explain these preconceptions in their long years of experience as students in the education system (Brouwer & Korthagen, 2005; Calderhead & Robson, 1991; Levin & He, 2008; Lortie, 1975). Knowledge of these beliefs, which are inferences based on teacher candidates' life experiences, will ensure that an education process that focuses directly on these preconceptions is followed in the teacher education process. Otherwise, as this study also indicates, teacher education will fall short in changing the preconceptions of teacher candidates.

Another category of the dysfunctionality of theoretical knowledge was the way theoretical knowledge was taught. Beliefs in this category included criticism of teacher educators' teaching methods. It was seen that the forgetting of theoretical contents was due to the lack of inclusion of practices that would enable pre-service teachers to be actively involved in the process. As a matter of fact, it is known that in education faculties, there are serious deficiencies in terms of ensuring teacher candidates' active participation in the practice and research process (Jenkins & Healey 2009; Munthe & Rogne, 2015). On the other hand, many practices that are used in teacher education and that provide effective results in eliminating the gap between theory and practice are mentioned in the literature (Angrist & Lavy, 2001; Bilir, 2011; Hammerness, Darling-Hammond, & Shulman, 2002; Fletcher, Mandigo, & Kosnik, 2013; Grossman, Valencia, Evans, Thompson, Martin & Place, 2000; Haggarty & Postlethwaite, 2012; Orland-Barak & Yinon 2007; Sahin & Kartal, 2013). In addition to these practices, the effects of teacher educators as role models in this process are also highlighted (Cheng et al., 2010). At this point, it may be useful to recall Blume's (1971) view that "teachers teach as they are taught and not as they are taught to teach". Similarly, Korthagen (2010) stated that the gap between theory and practice is a faculty member problem as much as it is a curriculum problem. It is seen that the study findings support the related studies that see the faculty member as a determining factor among the reasons for the gap between theory and practice.

The third sub-problem of the study sheds light on the problem areas that teacher education programmes need to solve in order to eliminate the gap between theory and practice. One of the problem areas expressed by the pre-service teachers was the context problem. In this category, the pre-service teachers stated that they needed to see how the theory functioned within different possibilities. They also stated that they needed to adapt the theory on their own terms and to see the use of theoretical knowledge in problem contexts. The fact that pre-service teachers need to see the use of theoretical knowledge in a context and gain experience adapting it is an understandable situation. A teacher's actions in the classroom are influenced by the interaction of many elements, such as the curriculum, the context, and the students' response to the instruction at a given time (Hoban, 2005). In this interactive environment, on the other hand, they have

little time for reflection and need quick and concrete responses (Eraut, 1995). The knowledge that guides the action demanded from the teacher by the class is quite different from the more abstract, systematic and general expert knowledge that teacher educators usually offer to pre-service teachers (Korthagen & Lagerwerf, 1996; Tom, 1997). The skill expected to be developed by teacher candidates is adapting abstract information in concrete situations. It can be clearly seen that to furnish pre-service teachers with the aforementioned skill, a structured understanding of teacher education should be adopted according to the nature of teaching. However, similar to this research, other studies also show that prospective teachers believe a lack of connection between teacher education programmes and school-based teaching experiences (Hobson et al., 2008). Korthagen and Kessels (1999) explained this issue based on a learning principle (Skemp, 1979). Korthagen and Kessels (1999) stated that to be able to learn anything during teacher education, teacher candidates must have personal concerns about teaching or encounter concrete problems. Otherwise, the efficiency of the theory is not clear to them and they will not be motivated to study it. For this reason, it is very important to focus on the ways pre-service teachers relate the theory to their actions at school. In addition, in an article discussing the characteristics of a quality teacher education programme, Darling-Hammond, Hyler and Gardner (2017) emphasise the need for teacher candidates to be offered carefully selected teaching experiences appropriate to the contexts they will teach later on. Indeed, Cheng et al. (2009) explained how pre-service teachers who were made aware of varied teaching contexts showed improvement in professional skills. The same research stresses the need for teacher education programmes to raise awareness about varied teaching contexts. At this point, it would be useful to remember the principles of the realistic teacher education model that Korthagen (2011) proposed for achieving a real integration of theory and practice. Such practices will undoubtedly enable the problems of permanence and trust to be overcome.

Another of the problem areas expressed by the pre-service teachers was the trust problem. As Schon (1983) stated, the uncertain and value-laden nature of teaching practice may be effective in the emergence of the trust problem. Furthermore, many studies on teacher development state that emotions play an important role in teaching, but this part is generally left out of the picture (Hargreaves, 1998). It is important that all dimensions, including emotions, are taken into account in the teaching process so that pre-service teachers can establish the relationship between theoretical knowledge and practice within themselves.

Teacher education programmes have to confront the problem of the gap between theory and practice. Over a century has passed since Dewey (1904) expressed his concern about this gap. This requires accepting that learning to teach is too multifaceted to be dealt with simply. What is needed is to adopt a holistic view that considers all aspects affecting teacher development. To eliminate the gap between theory and practice, it is an important requirement to start primarily with the beliefs brought along by pre-service teachers. The first step should be to work on pre-service teachers' beliefs that stem from erroneous learning, are unquestioned and hinder development, and that prevent them from establishing a high-level relationship with theoretical knowledge in the context of

professional development. It is important to raise the awareness in pre-service teachers that only inferences based on practice will not be enough to fulfil the requirements of being a teacher. Secondly, teacher education programmes should focus on ways to develop pre-service teachers' sense of trust in theoretical knowledge, ensure permanence, and overcome the context problem. Within this scope, it should be ensured that a development process is followed which is suitable for the nature and quality of the knowledge and skills needed by the pre-service teacher in the classroom.

### Limitations and Recommendations

This research has some limitations. The first limitation is the number and characteristics of the prospective teachers included in the study group. The study is limited to the beliefs of 134 pre-service teachers studying in three different departments and determined by the criterion sampling method. The second limitation of the study is that teacher candidates' beliefs about theoretical content were obtained only from the data collection tool used in the research. The pre-service teachers in the study group were not observed in the classroom during lessons, nor were clinical interviews conducted. It is thought that these limitations can be eliminated in future studies.

Based on the research results, the following recommendations can be made. In teacher education, how pre-service teachers describe the functions of theoretical content at metacognitive levels should be emphasised. To overcome the dysfunctionality of theoretical content, possible preconceptions that the teacher candidates may have, as the research findings indicate, should be taken into account in teacher education. The necessary revisions should be made in the problem areas pointed out by the research findings regarding how to overcome the dysfunctionality of the theoretical content in teacher education programmes.

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