

Received: November 25, 2016

Revision received: April 7, 2017

Accepted: July 24, 2017

OnlineFirst: September 10, 2017

Copyright © 2017 EDAM

www.estp.com.tr

DOI 10.12738/estp.2017.5.0597 • October 2017 • 17(5) • 1847–1871

Research Article

Prospective Teachers' Professional Self-Efficacy Beliefs in Terms of Their Perceived Autonomy Support and Attitudes towards the Teaching Profession: A Mixed Methods Study*

Sedat Kanadlı¹
Mersin University

Abstract

The purpose of this study is to identify the probable factors that can contribute to prospective teachers' levels of professional self-efficacy beliefs. For this purpose, quantitative methods are used to measure their perceived autonomy support during undergraduate education, their attitudes towards the teaching profession, and their levels of professional self-efficacy beliefs, while qualitative methods were used to determine the factors affecting their professional self-efficacy beliefs. This study is carried out as a survey model, collecting data using mixed methods. The study group consists of 173 prospective teachers who graduated from a state university's faculty of education at the end of the 2014-2015 academic year. The study's quantitative data have been collected using the Learning Climate Scale, the Attitudes towards the Teaching Profession Questionnaire, and the Teacher Self-Efficacy Scale. The qualitative data are collected using an open-ended questionnaire. Correlation and regression analyses are used for analyzing the quantitative data, and inductive qualitative data analysis is used for analyzing the qualitative data. The quantitative data analysis shows professional self-efficacy to have a significant relationship with teachers' attitudes towards the teaching profession and their perceived autonomy support ($p < .05$); also, attitudes towards the teaching profession and perceived autonomy support ($r^2 = 0.0209$) are significant predictors of professional self-efficacy ($p < .05$). As a result of the qualitative data analysis, prospective teachers' self-efficacy beliefs have been determined to be affected by undergraduate education, internship experience, fondness of the profession, lecturers' attitudes, self-confidence, and societal status of the profession. The quantitative and qualitative findings are seen to be consistent and mutually supportive.

Keywords

Prospective teacher • Autonomy support • Attitude toward a profession • Professional self-efficacy • Mixed methods

* Sections of this study were presented at the First International Academic Research Congress, Antalya, Turkey, November 2016.

¹ **Correspondence to:** Sedat Kanadlı (PhD), Department of Educational Sciences, Faculty of Education, Mersin University, Mersin Turkey. Email: skanadli@mersin.edu.tr

Citation: Kanadlı, S. (2017). Prospective teachers' professional self-efficacy beliefs in terms of their perceived autonomy support and attitudes towards the teaching profession: A mixed methods study. *Educational Sciences: Theory & Practice*, 17, 1847–1871. <http://dx.doi.org/10.12738/estp.2017.5.0597>

Teachers are a most important factor contributing to students' learning. Hettie's (2009) meta-analysis, which examined the factors influencing students' learning, found that after genetics, teachers have the greatest influence on students' learning; however, only teachers who have profound pedagogical knowledge with high expectations from all their students and who create positive teacher-student relationships, follow students, and give them feedback can strongly influence students. Teachers are also known to require six areas of knowledge for specializing: content knowledge, pedagogical knowledge, knowledge about learners and how they learn, personality knowledge, high-level conceptual knowledge, and corporate-communication knowledge (Garmston, 1998). The places where teachers now receive knowledge and skills in these areas are the institutions that train teachers, and training qualified teachers depends on the quality of undergraduate education.

Many problems are seen in Turkey regarding training qualified teachers during their undergraduate education (Adem, 1988; Demircioğlu, Bulut, & Yıldırım, 1997; Kavcar, 1980; Sözer, 1989). The Council of Higher Education (CoHE) made some alterations to education faculties' teacher-training program in 1998 and 2006 to overcome these problems. These alterations have increased the course hours that prospective teachers spend on formation and content knowledge, making these two courses occur side by side and having hours of exercises added to the formation course. These changes aim for prospective teachers to be able to transfer their knowledge and skills gained in undergraduate education to their assigned schools, as well as to have them know the teaching profession in detail by discussing its basic features, difficulties, and joys (CoHE, 1998). One of the reasons for this change can be argued in terms of having prospective teachers be autonomous individuals who take responsibility for their own learning and feel good about themselves professionally by having them develop a positive attitude towards the teaching profession. This is because teachers' ability to transfer their knowledge and skills to school is closely related to their feelings of autonomy and competence, while knowing the profession's difficulties and joys is closely related to their attitudes towards the profession. The purpose of this study is to determine how prospective teachers' perceptions of autonomy support and attitudes towards the teaching profession contribute to teaching self-efficacy, as well as to identify the factors that affect teaching self-efficacy at the end of undergraduate education. When compared to those with low self-efficacy, prospective teachers with high teaching self-efficacy are known to perform better at lecturing, providing active student participation, and managing their classes (Saklofske, Michayluk, & Randhawa, 1988). Therefore, identifying the factors that affect prospective teachers' self-efficacy can contribute to the literature in the field.

Autonomy Support

The concept of autonomy is defined as the self-initiation and self-regulation of one's behavior (Deci, Vallerand, Pelletier, & Ryan, 1991). A person must experience self-affirmation or will of one's own behavior in order to meet the requirement of autonomy (Ryan & Grolnick, 1986). This experience can be achieved in the classroom by having students undertake the responsibility of self-learning on their own. Therefore, the learning climate a teacher creates in class will influence students' perceived autonomy (Black & Deci, 2000). The factor that determines the in-class learning climate is teachers' styles of interpersonal motivation (Williams & Deci, 1996). While motivating students, teachers use styles of interpersonal motivation that vary from being highly controlling to autonomy supportive (Rigby, Deci, Patrick, & Ryan, 1992). Teachers with highly controlling styles pressure students to think, feel, and behave a certain way; while with styles that support autonomy, teachers demonstrate a variety of behaviors to identify and improve students' sources of intrinsic motivation (Reeve, 2009). Teachers who use the autonomy-supportive approach facilitate learning by aligning students' intrinsic motivations with classroom activities (Reeve, 2006).

Assor, Kaplan, and Roth (2002) separated the three behaviors that autonomy-supportive teachers basically exhibit into: (a) explaining a learning activity's role in reaching students' individual goals, (b) reviewing activities and allowing students to explain their dissatisfaction with it, and (c) allowing students to choose tasks consistent with their individual goals and objectives. Various research has found that the students of autonomy-supportive teachers who perform these behaviors in class have a higher intrinsic motivation to learn (Guay, Boggiano, & Vallerand, 2001; Sossic-Vasic, Kies, Lau, Sitzler, & Streb, 2015), increased academic achievement (Black & Deci, 2000; Olusola, 2013; Soenens & Vansteenkiste, 2005), and exciting and energetic experiences (Núñez, Fernández, León, & Grijalvo, 2015) compared to the students of teachers who use a controlling style. Similarly, the autonomy-supportive learning climate is seen to have students who develop positive attitudes towards activities (Chatzisarantis, Hagger, Wang, & Thøgersen-Ntoumani, 2009) and learning (Stefanou, Perencevich, DiCintio, & Turner, 2004).

Whether prospective teachers become autonomous individuals can depend on the learning climate instructors create in class. By accepting criticism from prospective teachers in their field or during classes on vocational knowledge, by offering choices to prospective teachers, and by supporting their independent thinking, instructors can have prospective teachers feel autonomous, or they can inhibit them from becoming autonomous by not exhibiting these behaviors. When instructors demonstrate behaviors that support autonomy, prospective teachers' perceived autonomy support will increase and form an autonomous social context (Perlman, 2011). Because

these autonomy-supportive behaviors can be taught to prospective teachers (Reeve, 1998), they can both develop professional knowledge and skills and learn with more fun and freedom in environments where they feel comfortable, where their ideas are valued, and where they undertake responsibility for their own learning by being offered choices. In this way, prospective teachers' self-efficacy can be increased by developing positive attitudes towards the teaching profession.

Attitude towards the Teaching Profession

Attitude is defined as an internalized, affective condition acquired through experiences; attitudes impact the behaviors that individuals show when interacting with any object, event, or person (Senemoğlu, 2005, p. 419). In other words, it is a condition that psychologically directs a person's feelings, thoughts, and behaviors towards an object, event, or person (Semerci & Semerci, 2004). As understood from these definitions, attitudes can influence behaviors toward individuals' surroundings as well as the way they work in and feel about their profession. Similarly, one's attitudes toward any profession can be expected to influence one's success in that profession. Because teaching is also a profession, teachers' and prospective teachers' positive attitudes toward their profession gain importance in terms of affection for the profession and the ability to perform one's profession effectively. Attitudes toward the teaching profession determine how an understanding of the profession is taught (Çetin, 2006).

Teachers with positive attitudes toward the teaching profession can fulfill the profession's requirements more effectively (Üstüner, 2006). Prospective teachers' attitudes toward the teaching profession reveal positive relationships with personality traits such as socialness, helpfulness, supportiveness, tolerance, caution, balance, trustfulness, sensitivity, and determination (Şenel, Demir, Sertelin, Kılıçaslan, & Köksal, 2004). Accordingly, as prospective teachers' positive attitudes towards the teaching profession increase, so does their life satisfaction (Recepoğlu, 2013). In addition, as prospective teachers positively develop attitudes towards the teaching profession, their self-efficacy beliefs in being able to perform their teaching profession effectively also increase (Dadandı, Kalyon, & Yazıcı, 2016).

Teacher Self-Efficacy (Professional Self-Efficacy)

Self-efficacy is defined as the belief that one can successfully perform the required behaviors for producing an outcome (Bandura, 1977, p. 193). In other words, self-efficacy is what one considers the self capable of doing (Schunk, 2014, p. 105). In fact, various studies have revealed students' perceptions of self-efficacy to influence their willingness to study, the effort they exert, their persistence, and their success in difficult situations (Bandura, 1986; Pajares, 1996; Schunk & Pajares, 2005). However,

self-efficacy is a concept that concerns not only students but also teachers (Pajares, 1996) because teachers have various beliefs on whether or not they can successfully perform the teaching profession. Known as teacher self-efficacy (or professional self-efficacy), this belief is defined as teachers' judgments about their ability to have students reach the desired learning outcome through their influence in the learning process, even in cases where students are problematic or have low motivation levels (Tschannen-Moran & Woolfolk Hoy, 2001). Namely, teachers' own beliefs affect the extent to which they can positively influence students' performances (Ashton, 1984).

Teachers with low self-efficacy can exhibit behaviors such as avoiding activities that exceed their capacities, abstaining from helping pupils who have difficulty learning, spending less effort enriching lessons, and repeating a lesson until students understand it; but, teachers with high self-efficacy tend to enrich lessons with challenging activities, help students increase their success, and pay attention to students who have difficulty learning (Schunk, 2014, p. 113). Research has shown that teacher self-efficacy is associated with the efforts a teacher makes toward teaching, the goals set, and the persistence and resilience shown in the face of difficulties when things go wrong (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). In addition, teachers with high self-efficacy show higher levels of planning, organization, and determination (Allinder, 1994); are more likely to try new methods (Cousins & Walker, 2000); and are more inclined to create a positive classroom climate (Fritz, Miller, Kreutzer, & MacPhee, 1995) by less often criticizing students who make mistakes (Ashton & Webb, 1986).

Because teachers' perceptions of self-efficacy affect learning and teaching, teacher trainers, managers, and policy makers want to know where their self-efficacy comes from, how to support it, and what factors impede it (Woolfolk Hoy & Burke-Spero, 2005). According to social cognitive theory, self-efficacy has four sources: (a) *mastery experiences*, defined as past successes or failures in similar situations that a person has encountered, (b) *vicarious experiences*, which occur as a result of observing peers' successes or failures in similar situations, (c) *verbal persuasion*, which is expressed as the belief that those who doubt their own abilities in a situation can successfully accomplish the same task when someone else gives it to them, and (d) *physiological and emotional states*, which indicate the physical (health status, etc.) and psychological (stress, fear, etc.) conditions under which a person behaves (Bandura, 1997, pp. 79–115). However, together with the scant knowledge on the sources of teacher self-efficacy (Labone, 2004), the most important source affecting teacher self-efficacy is the performance successes that arise from teachers' successful teaching of students (Tschannen-Moran & Hoy, 2007). Mulholland and Wallace (2001) also found that direct experiences (performance successes) acquired from courses during the first year of a profession have the greatest impact on developing perceptions of self-efficacy.

Importance of the Study

Teachers can identify effective methods and strategies for their classes by experimenting with new methods to ensure students actively participate in class and also to manage the class effectively. Thus, teachers' self-efficacy beliefs regarding their profession can be developed through direct experiences. However, other sources (indirect experiences, verbal persuasion, physical and mental conditions) are expected to play an important role in forming prospective teachers' self-efficacy beliefs because of having less teaching experiences than in-service teachers (Tschannen-Moran & Hoy, 2007). Oh's (2010) study, which was conducted with prospective teachers to determine the factors affecting their teaching self-efficacy perceptions during a reading and writing lesson, found prospective teachers to improve their professional self-efficacy beliefs through teaching students; prospective teachers' personality traits, motivations, and indirect experiences were found to be significant predictors of their self-efficacy beliefs. Therefore, determining the factors that increase or decrease undergraduate prospective teachers' professional self-efficacy is important in terms of training qualified teachers. Because self-efficacy beliefs for any area begin to take shape in the first days of learning (Bandura, 1977), undergraduate education can be argued to have an important place in developing prospective teachers' professional self-efficacy beliefs as this stage is when prospective teachers gain their first experiences with the teaching profession.

In addition, when reviewing studies on prospective teachers' professional self-efficacy in Turkey, these studies are seen to examine professional self-efficacy through certain variables like department and gender (Demirtaş, Cömert, & Özer, 2011; Ekici, 2008; Şahin Taşkın & Hacıömeroğlu, 2010a; Yeşilyurt, 2013) or, rather, to have been conducted using quantitative methods to determine the relationship between professional self-efficacy and their attitudes towards the profession (Arastaman, 2013; Dadandı et al., 2016; Demirtaş et al., 2011). However, no studies were on the predictive power of undergraduate prospective teachers' perceived autonomy support or attitudes towards the teaching profession related to professional self-efficacy, nor were other studies conducted using mixed methods to determine the factors affecting prospective teachers' professional self-efficacy. For this reason, this study purposes to identify the probable factors that can contribute to prospective teachers' beliefs in their professional self-efficacy. This study is considered able to help prospective teachers achieve more effective learning experiences that will increase their professional self-efficacy. To this end, the study seeks answers to the following questions:

1. What is the relationship of prospective teachers' perceived autonomy support and their attitudes towards the teaching profession with their professional self-efficacy?

2. Are their perceptions of autonomy support and attitudes towards the profession a significant predictor of beliefs in professional self-efficacy?
3. What factors influence prospective teachers' feelings of professional self-efficacy?

Method

This research was performed using the survey model because it aims to determine a study group's characteristics in a particular situation (Karasar, 2005, p. 79). The convergent parallel design, a mixed-methods research design, is used for collecting data. In this design, the researcher collects the qualitative and quantitative data simultaneously, analyzes them separately, and then examines whether the findings confirm each other by comparing the obtained qualitative and quantitative results (Creswell & Plano Clark, 2015, p. 79). This type of pattern also varies according to which data collection method outweighs the other in the research. Because quantitative methods are given more weight in this study, a simultaneous quantitative-qualitative design on the quantitative axis has been used (formulated as *QUAN + qual*; Morse, 2003, p. 198). The model for the mixed-methods design employed in the study is given in Figure 1.

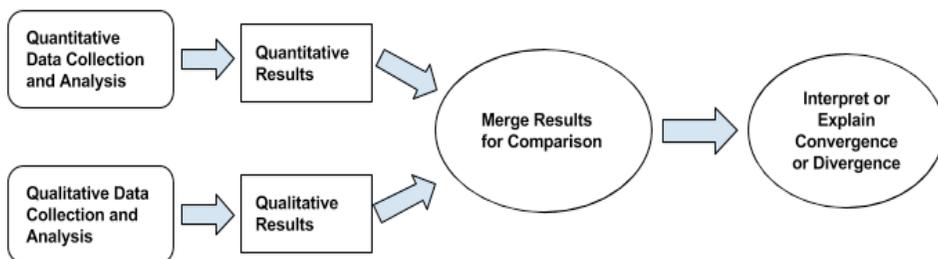


Figure 1. Diagram of the applied convergent parallel design (Creswell & Plano Clark, 2015, p. 56).

Mixed methods have five reasons for being used in any study: expansion, triangulation, completion, initiation, and development (Greene, Caracelli, & Graham, 1989). In this study, mixed methods are used for the purposes of expansion and triangulation. In other words, mixed methods are preferred for broadening the scope of quantitative data using the qualitative data and for evaluating the research problem from various aspects by determining the points where the data collected by these two research methods support/don't support each other. This study collects quantitative data on the perceived autonomy support and attitudes towards the teaching profession, as these are thought to influence teacher self-efficacy; however, open-ended questions have also been asked qualitatively as other factors may affect teachers' self-efficacy. Thus, these two data sets are considered able to explain the research problem better

than a single data set. Combining the two data sets in mixed methods research can occur in the data collection stage (according to the preferred mixed-methods design) as well as during the analysis, findings, or discussion stages (Creswell, 2015, p. 83). Because this study uses the convergent parallel design, quantitative and qualitative findings have been combined in the discussion section.

Study Group

The study universe of this research is 365 prospective teachers who graduated from the education faculty of a state university at the end of the academic year 2014-2015. The study group from this universe was identified using convenience sampling, a purposeful sampling method. In this kind of sampling, readily available individuals are included in the survey (Fraenkel & Wallen, 2009, p. 98). Therefore, quantitative and qualitative data were collected from 173 prospective teachers using this sampling method. Thirty-three of the teachers are in the Departments of English Teaching (19.1%), 31 in Science Teaching (17.9%), 40 in Mathematics Teaching (23.1%), 33 in Turkish (19.1%), and 36 in Primary School Teaching (20.8%). Fifty-one (29.5%) of these prospective teachers are male and 122 (70.5%) are female. The average age of the prospective teachers is $\bar{x} = 23.14$ ($SD = 1.92$).

Data Collection Tools

This study uses three scales for collecting quantitative data: the Teacher's Sense of Efficacy Scale, the Teaching Profession Attitude Scale, and the Learning Climate Questionnaire.

Teacher's Sense of Efficacy Scale. This scale, developed by Tschannen-Moran and Woolfolk Hoy (2001) to determine the professional self-efficacy levels of teachers, was adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005) as a 9-point Likert-type scale consisting of 3 factors (student participation, classroom management, instructional strategies) and 24 items whose reliability coefficients for the sub-dimensions of student participation, instructional strategies, and classroom management were .82, .86, and .84, respectively and whose reliability coefficient for the whole scale was .93. In this study, the reliability coefficients for the sub-dimensions of student participation, instructional strategies, and classroom management have been calculated as .88, .91, and .90, respectively; the reliability coefficient for the whole scale is .96. The possible scores that can be taken from the scale are between 24 and 216. Teachers' perceptions of self-efficacy can be interpreted as high with scores are higher than the neutral mark of 96 (4 being "neutral" on the scale) and increasingly higher as it approaches 216 (9 being "most efficient" on the scale).

Teaching Profession Attitude Scale. This scale, developed by Çetin (2006) to determine teachers' attitudes towards the teaching profession, is a 5-point Likert-type scale consisting of 3 factors (affection, value, and adaptation) and 35 items. The reliability coefficients for the dimensions of affection, value, and adaptation were originally .95, .81, and .76, respectively, and for the whole scale, .93. In this study, the reliability coefficients for the dimensions of affection, value, and adaptation are .94, .91, .80, respectively, and the reliability coefficient for the overall scale is .95. Scores on the scale can range between 35 and 175. Teachers' attitudes toward the teaching profession can be considered positive starting with an average score on the scale at the mid-point of 105 (3 being "neutral") and increasing as the score approaches 175 (5 being "certainly agree").

Learning Climate Questionnaire. This scale, developed by Williams and Deci (1996) to determine instructors' in-class learning climate, was adapted into Turkish by Kanadlı and Bağçeci (2016) as a 7-point Likert-type scale consisting of one factor and 15 items with a reliability coefficient of .89. This study's reliability coefficient for the scale is .94. Possible scores for the scale range from 15 to 105. Students' perception of autonomy support can be interpreted as high when the average score on the scale is above the midpoint of 60 (4 being "neutral") and increasingly higher as the score approaches 105 (7 being "strongly agree").

The qualitative data is collected from the open-ended question added to the Learning Climate Questionnaire: "In your four-year undergraduate education, what factors affected (increased or decreased) your level of professional self-efficacy (the belief that you can handle your profession effectively and deal with problems that may arise)? Please list them." This question was prepared by taking into account the opinion of a specialist who lectures in the educational sciences and has publications on professional self-efficacy. While the prospective teachers answered the qualitative data questionnaire, the researcher made necessary explanations about how to answer this question. As a result of analyzing the answers given by the prospective teachers, two themes emerged: factors positively influencing professional self-efficacy and factors negatively influencing professional self-efficacy. To determine the coding reliability for these themes, approximately 10% of the collected data was given to two different coders, together with code definition tables. Inter-coder reliability was calculated using the formula of $[agreements : (agreements + disagreements) \times 100]$ (Miles & Huberman, 1994, p. 64). Accordingly, inter-coder reliability was calculated as 92.3% $[24 / (24 + 2)]$ for the first coder and 88.8% $[24 / (24 + 3)]$ for the second coder. The average coding reliability for the two coders is found to be 90.6%. Miles and Huberman (1994, p. 64) recommend inter-coder reliability to be greater than 80%, preferably at least 90%.

Data Analysis Methods

The Kolmogorov-Smirnov test for normality was used to determine whether to apply parametric or nonparametric tests for analyzing the quantitative data. The results of this test are shown in Table 1.

Table 1
Normality Test Results

	K-S	<i>df</i>	<i>p</i>
Attitude towards profession	.064	173	.079
Autonomy support	.061	173	.087
Professional self-efficacy	.062	173	.200

$p > .05$.

According to Table 1, the data from all three scales are normally distributed ($p > .05$). For this reason, parametric tests will be used to analyze the quantitative data. Accordingly, Pearson's correlation coefficient was calculated to determine the relationship of perspective teachers' perceived autonomy support to their professional self-efficacy beliefs and attitudes, and a regression analysis was also conducted to determine whether perceived autonomy support and attitudes towards the teaching profession are significant predictors of professional self-efficacy beliefs.

Inductive qualitative data analysis was used when analyzing the qualitative data. This analysis involves the discovery of codes, categories, themes, or patterns in the qualitative data (Patton, 2014, p. 453). The process of inductive qualitative data analysis consists of reading all text, dividing the text into smaller information sections, coding these sections (labeling), examining the coding for overlaps and redundancies, and integrating the codes into broader themes (Creswell, 2008, p. 251). Therefore, this process has two basic steps (Saldana, 2013): (a) codes are assigned into data stacks, and (b) these codes are merged into broader categories.

Findings

Analysis of Quantitative Data

Pearson's correlation coefficient was calculated to determine the relationship between prospective teachers' professional self-efficacy beliefs, perceived autonomy support, and attitudes toward the teaching profession. The calculated correlation coefficients and the means and standard deviations for professional self-efficacy, attitude, and perceived autonomy support are given in Table 2.

Table 2
Relationships among Variables and Their Averages and Standard Deviations (N = 173)

Variables	1	2	3
1. Professional self-efficacy belief	-	.171*	.455**
2. Perceived autonomy support		-	.164*
3. Attitude toward teaching profession			-
Mean (\bar{x})	161.60	56.10	135.50
Standard Deviations (SD)	26.14	20.10	23.57

* $p < .05$, ** $p < .01$.

According to Table 2, the mean for prospective teachers' professional self-efficacy beliefs is 161.60 ($SD = 26.14$), while the mean for their perceptions of autonomy support is 56.10 ($SD = 20.10$), and the mean for their attitudes towards the profession is 135.50 ($SD = 23.57$). It can be interpreted according to these results that the prospective teachers' professional self-efficacy beliefs are moderate, their attitudes towards the teaching profession are positive, and their perceived autonomy support is low.

Table 2 shows a positive, low level ($r = .171$), significant relationship ($p < .05$) between the prospective teachers' professional self-efficacy beliefs and their perceptions of autonomy support. Similarly, a positive, moderate ($r = .455$), and significant relationship ($p < .01$) exists between teachers' professional self-efficacy beliefs and their attitudes toward the teaching profession. However, a positive, low level ($r = .164$), and significant ($p < .05$) relationship exists between prospective teachers' perception of autonomy support and their attitudes toward the teaching profession.

The relationships among the sub-dimensions of prospective teachers' attitudes toward the teaching profession, perceived autonomy support, and the sub-dimensions of their professional self-efficacy are given in Table 3.

Table 3
Relationships among the Sub-Dimensions of Prospective Teachers' Attitudes toward Teaching Profession, Perceived Autonomy Support, and the Sub-Dimensions of Professional Self-Efficacy (N = 173)

Variables	Sub-dimensions	Professional Self-Efficacy			Perceived Autonomy Support
		Student Participation	Teaching Strategies	Classroom Management	
Attitudes toward the Teaching Profession	Affection	.388**	0.353**	.361**	.151*
	Value	.416**	.424**	.437**	.045
	Adaptation	.402**	.372**	.381**	.207**
Perceived Autonomy Support		.207**	.134	.149	-

* $p < .05$, ** $p < .01$.

Table 3 shows the sub-dimensions of affection, value, and adaptation in the variable of attitudes toward the teaching profession to have a moderate, positive, and significant relationship ($p < .01$) with the sub-dimensions of professional self-efficacy (enabling student participation, use of instructional strategies, and classroom management). Prospective teachers perceived autonomy support has a positive, low-

level, and meaningful relationship ($r = .207, p < .01$) with the sub-dimension of enabling student participation under professional self-efficacy. However, it has no significant relationship to the sub-dimensions of teaching strategies or classroom management sub-dimensions ($p > .05$). In addition, Table 3 shows a positive, low-level, and significant relationship for perceived autonomy support with the sub-dimension of affection and adaptation under attitudes towards profession, while no significant relationship is shown between perceived autonomy support and the sub-dimension of value ($p > .05$).

Regression analysis was performed to determine whether prospective teachers' perceived autonomy support and their attitudes towards teaching significantly predict their self-efficacy beliefs. The results of this analysis are given in Table 4.

Table 4
Regression Analysis about Perceived Autonomy Support and Attitudes Towards Profession as Predictors of Prospective Teachers' Professional Self-Efficacy Beliefs

Variables	<i>b</i>	<i>SSE</i>	<i>T</i>	<i>df</i>	<i>r</i>	<i>r</i> ²	<i>F</i>
Attitudes toward the teaching profession	.505	.076	6.67**	171	.455	.207	44.7**
Perceived autonomy support	.222	.098	2.26*	171	.171	.029	5.12*
Attitudes toward the teaching profession & Perceived autonomy support	.487	.076	6.38**	172	.465	.217	23.51**
	.128	.090	1.43				

* $p < .05$, ** $p < .01$.

According to Table 4, the r^2 value for teachers' attitudes toward the teaching profession as a predictor of professional self-efficacy was calculated as 0.207. According to this result, 20.7% of the change in teachers' self-efficacy beliefs is explained by the changes in their attitudes towards the teaching profession. The F -statistic is found significant ($F = 44.7, p < .01$) according to Table 4, which proves the model that that attempts to explain prospective teachers' professional self-efficacy through their attitudes toward the teaching profession to be significant. Similarly, the significance of the constant coefficient ($b = 0.505$) and $t = 6.67$ are found to be statistically significant ($p < .01$).

The r^2 value of perceived autonomy support as the predictor of professional self-efficacy is calculated as 0.029 in Table 4. According to this result, 2.9% of the change in teachers' self-efficacy beliefs is explained by changes in perceived autonomy support. The F -statistic being found significant ($F = 5.12, p < .05$) according to Table 4 shows the model that attempts to explain prospective teachers' professional self-efficacy through their perceived autonomy support to be significant. Similarly, the significance of the constant coefficient ($b = 0.22$) and the $t = 25.55$ are found to be statistically significant ($p < .01$).

Multiple regression analysis was conducted to determine the effects that changes in prospective teachers' attitudes toward the teaching profession and their perceived

autonomy support have on their self-efficacy beliefs. The r^2 value was calculated to be 0.217 as a result of multiple regression analysis in Table 4. According to this result, 21.7% of prospective teachers' change in self-efficacy beliefs is explained by changes in their perceived autonomy support and attitudes toward the teaching profession. The F -statistics being found significant ($F = 23.51, p < .01$) according to Table 4 reveals the model that attempts to explain prospective teachers' professional self-efficacy through their perceived autonomy support and attitudes toward the teaching profession to be significant.

Analysis of Qualitative Data

The qualitative research question was given to 173 prospective teachers in an open-ended format. However, only 131 of them answered the question. As a result of the content analysis on these answers, two themes emerged: factors positively influencing professional self-efficacy and factors negatively influencing professional self-efficacy.

The codes, definitions, and frequencies for teacher candidates' expressions of positive influences on their professional self-efficacy are given in Table 5.

Table 5
Factor Themes, Code Definitions, and Frequencies of Teacher Candidate Expressions of Positive Influences on Their Professional Self-Efficacy

Codes	Code Definitions	<i>f</i>	%
Qualified Undergraduate Education	Prospective teachers' statements on undergraduate education involving sufficient content knowledge (theoretical knowledge), teaching courses (teaching methods and techniques, classroom management), or applied studies (presentation, group discussion, microteaching) having positive effects on their self-efficacy	41	32
Self-confidence	Prospective teachers' statements on their self-confidence, belief in themselves, ambition and determination, talents, personal efforts (paying attention to social relationships, reading books, following the media, etc.), and personal experiences (private tutoring, making good friends, family support, etc.) having positive effects on their self-efficacy	27	21.1
Positive Teaching Practice Experiences	Prospective teachers' statements on positive practice experiences such as student observation and classroom presentation having positive effects on their self-efficacy	27	21.1
Positive Instructor Attitudes	Prospective teachers' statements on their self-efficacy being positively influenced when an instructor has positive attitudes and good relationships (good communications), cares about their students, is a model for them, gives positive feedback, trusts the students, and supports them.	18	14.1
Professional affection	Prospective teachers' statements on their affection for the teaching profession, positive attitudes towards the profession, and willingness to do this profession having positive effects on their self-efficacy	13	10.2
Other	Prospective teachers' statements, other than the codes above, on the learning environment and growth increasing their self-efficacy	2	1.56

As seen in Table 5, the prospective teachers indicate that qualified undergraduate education (32%, $f = 41$), personal efforts, experience, self-confidence and positive

practice experiences (21.1%, $f = 27$), instructor’s positive attitude (14.1%, $f = 18$), and their affection for the teaching profession (10.2%, $f = 13$) increase their professional self-efficacy.

The codes, definitions and frequencies for teacher candidates’ expressions of negative influences on their professional self-efficacy are given in Table 6.

Table 6
Factor Themes, Code Definitions, and Frequencies of Teacher Candidate Expressions of Negative Influences on Their Professional Self-Efficacy

Codes	Code Definitions	<i>f</i>	%
Poor Undergraduate Education	Prospective teachers’ statements on the negative effect of undergraduate education’s lack of practical lessons/teaching courses, excessive theoretical training, continuous homework, presentation preparations, inadequate field education, compulsory studies, memorization, inadequate physical conditions, and inconsistencies between education and reality their self-efficacy	35	36.8
Negative Instructor Attitudes	Prospective teachers’ statements on their self-efficacy being negatively influenced when an instructor has poor communication (bossy, insulting); lacks standard grading, feedback, and respect for student decisions; has personal political behaviors and negative attitudes with extreme expectations	25	26.3
Unqualified Instructors	Prospective teachers’ statements on their self-efficacy being negatively influenced because an instructor is inadequate in the field, is traditionalist, or lacks constructivist understanding	10	10.5
Assignment problem	Prospective teachers’ statements on their self-efficacy being negatively influenced because of the Public Personnel Selection Exam (PPSE), preparations, PPSE stress, and low teacher-assignment quotas	7	7.37
Negative teaching practice experiences	Prospective teachers’ statements on teaching practices that involve observing crowded classes or unsuccessful teaching practices and the negative approaches of supervisor teachers having negative affecting their self-efficacy	7	7.37
Low Self-confidence	Prospective teachers’ statements on their self-efficacy being negatively influenced because of low self-confidence resulting from feeling inadequate in terms of knowledge and experience, disliking the profession, not regarding the profession as appropriate for himself/herself, and not studying hard enough	6	6.32
Status of the Profession	Prospective teachers’ statements on their self-efficacy being negatively influenced because of negative societal views on the teaching profession and low teacher salaries	3	3.16
Other	Prospective teachers’ statements, other than the codes above, on their self-efficacy being negatively influenced because of continuous changes in the education system and having failed previous courses	2	2.11

As seen in Table 6, the prospective teachers indicated that unqualified undergraduate education (36.8%, $f = 35$), negative attitudes of instructors towards them (26.3%, $f = 25$), unqualified instructors (10.5%, $f = 10$), assignment problems (7.37%, $f = 7$), practice experiences from teachers (7.37%, $f = 7$), their own self-confidence (6.32%, $f = 6$), the status of the teaching profession (3.16%, $f = 3$), and other (2.11%, $f = 2$) decreased their professional self-efficacy.

Discussion

As a result of this study's aim to qualitatively and quantitatively determine the factors affecting prospective teacher's professional self-efficacy, the qualitative findings reveal large support for the quantitative findings, expanding their scope. Accordingly, the quantitative findings show evidence for a positive, moderate, and significant ($p < .05$) relationship between prospective teachers' professional self-efficacy and their attitudes toward the profession. In addition, prospective teachers' attitudes toward the profession have been determined to be a significant predictor of their professional self-efficacy and that 20.7% of the change in professional self-efficacy beliefs is explained by changes in their attitudes toward the teaching profession. Qualitative findings support these quantitative findings in that prospective teachers love their teaching profession, have positive attitudes towards the profession, and are willing to espouse teaching. Similarly, [Dadandı et al.'s \(2016\)](#) and [Demirtaş et al.'s \(2011\)](#) studies on prospective teachers obtained results that support this finding. In one study conducted with teachers, [Ravi \(2013\)](#) also found a moderately significant relationship between professional self-efficacy and attitudes towards the profession. These results show that prospective teachers' attitudes towards the profession can influence their professional self-efficacy. As such, prospective teachers who love, value, and adapt to the teaching profession can be interpreted as having increased self-efficacy beliefs in performing teaching effectively. This is because teachers' attitudes towards the profession are composed of the sub-dimensions of professional affection, the value given to the profession, and their adaptation to it ([Çetin, 2006](#)). The quantitative findings show these sub-dimensions to have a moderate, positive, and meaningful relationship with professional self-efficacy's sub-dimensions of student participation, use of instructional strategies, and classroom management.

The quantitative findings show a positive, low level, and significant relationship to exist between teachers' professional self-efficacy beliefs and their perceived autonomy support ($r = 0.171$, $p < .05$). Similarly, prospective teachers' perceived autonomy support reveals itself as a significant predictor of their professional self-efficacy and that 2.9% of the change in their self-efficacy beliefs is explained by changes in their perceived autonomy. In the qualitative findings, prospective teachers expressed their self-efficacy to be influenced positively when instructors have positive attitudes towards them, establish good relationships with them (good communications), care about them, become a model for them, give them positive feedback, and trust and support them. Such interpersonal motivation styles from instructors are called autonomy-supportive styles ([Reeve, 2009](#)). In autonomy-supportive styles, teachers identify students' interests and motivate and educate them by supporting students' internalization of the teaching agenda ([Reeve, Bolt, & Cai, 1999](#)). To achieve this, teachers explain the extent to which teaching activities serve students' goals; they allow students to express themselves and offer them choices ([Assor et al., 2002](#)).

This climate, if created by instructors in teacher-training classrooms, can positively influence prospective teachers' active participation in the course, as well as guide them on how to provide active student participation in their classes when they start their profession. Similarly, other studies have shown that teacher self-efficacy increases as teachers feel more autonomous (Lu, Jiang, Yu, & Li, 2014; Skaalvik & Skaalvik, 2014). This result is consistent with the finding of Güvenç (2011), who showed a positive, moderate, and significant relationship ($r = 0.43, p < .01$) to exist between the autonomy support that classroom teachers think they provide and their professional self-efficacy beliefs.

Prospective teachers indicated in the qualitative findings that their professional self-efficacy is negatively impacted because of instructors' poor communication (ordering, insulting remarks) with them; lack of grading standard, feedback, or respect for students' decisions; exhibition of personal-political behavior; and negative attitudes with excessive expectations. Such interpersonal motivation styles from instructors are known as controlling styles (Reeve, 2009). In controlling styles, teachers try to ensure that students follow the agenda set by the teacher, avoid undesired behaviors, and attain desired behaviors by giving directives and awards to students or by sanctioning them (Reeve et al., 1999). Such instructor behaviors can negatively affect prospective teachers' self-efficacy. This may be related to *verbal persuasion*, which Bandura (1997) sees as a source of self-efficacy. Bandura (1997) defines verbal persuasion as the belief that those who doubt their own abilities in a situation can successfully accomplish a task that is given by a superior. Because prospective teachers' have little teaching experience, positive feedback from instructors about their classroom performances, support and guidance from instructors, and well-established communication with prospective teachers can also enhance verbal persuasion, which is a source of self-efficacy. For this, instructors need to have evaluation standards and not have expectations grossly exceeding prospective teachers' actual performances. Otherwise, the instructor's use of destructive feedback or deprecating words toward prospective teachers in front of their friends can negatively impact verbal persuasion and the prospective teachers' physical and emotional state, which are both sources of self-efficacy. These, in turn, negatively affect prospective teachers' professional self-efficacy.

In addition to the quantitative findings obtained in this study, the qualitative findings show prospective teachers' professional self-efficacy to be positively or negatively influenced by their undergraduate education, teaching practice experiences, self-confidence, instructors' pedagogical knowledge, employment placement exams, and current social status of the teaching profession. For instance, prospective teachers expressed their professional self-efficacy to be positively affected when having: received high-quality pedagogical knowledge during

undergraduate education; attended educational courses such as teaching methods, techniques, and classroom management; and performed classroom practices such as presentations, group discussions, or microteaching. On the other hand, they pointed out that their professional self-efficacy is negatively affected in situations of excessive theoretical education during undergraduate education, continuous demand for preparing and presenting homework, education being inconsistent with real life, and inadequate physical conditions. According to this result, the presentation methods in undergraduate education are seen to influence professional self-efficacy both positively and negatively. One can say the teaching techniques that prospective teachers find useful are in-class practices where the instructor provides theoretical knowledge and the students do the practice, not practices where the instructor allocates topics and each student is responsible for their own topic. Baştürk's (2011) study revealed that the presentation technique in which an instructor allocates topics to the students only contributes to the presenting student, with very limited contributions going to the other students' learning.

Another result obtained from the qualitative findings is that teaching principles, methods, and classroom management as vocational knowledge courses positively affects the professional self-efficacy of prospective teachers. This result is consistent with the finding Gilik Güleç (2012) obtained in her thesis study examining prospective teachers' opinions on teaching courses wherein the prospective teachers were generally found to have positive attitudes. Similarly, Şahin Taşkın and Hacıömeroğlu's (2010b) study revealed courses on teaching to positively affect prospective teachers' views on teaching as a profession. Therefore, one can say that vocational knowledge courses play an important role in developing prospective teachers' positive attitudes towards the profession as well as feelings of proficiency in this profession. Additionally, the qualitative findings show prospective teachers' high levels of self-confidence, belief in themselves, ambition and determination, talent, personal effort (giving importance to social relationships, reading books, following media, etc.), and personal experience (private tutoring, making good friendships, family support, etc.) to positively impact their professional self-efficacy. On the other hand, some prospective teachers stated their professional self-efficacy to be negatively affected because of low self-confidence arising from feeling insufficient in terms of knowledge and experience, not liking their profession, not regarding the profession as suitable for themselves, and not studying hard enough. However, Haljoo (2014) found a moderate, positive, and significant relationship to exist between self-confidence and general self-efficacy, and general self-efficacy to be a significant predictor of self-confidence. Therefore, self-confidence is found low in this study due to students' low levels of perceived professional self-efficacy. Sari (2016) explained one of the factors that determine a person's perceived self-efficacy to be their self-confidence.

The qualitative findings show that practice teaching experiences such as observing students and teaching them have positive effects on prospective teachers' self-efficacy, while observing crowded classes, unsuccessful teaching practices, or negative approaches from advisor teachers negatively affects their professional self-efficacy. In support of this finding, [Güven \(2004\)](#) found that all prospective teachers find school experience lessons very useful, especially feedback from counselors, although many prospective teachers were disappointed by their first experiences at school. In addition to this, [Aydın, Selçuk, and Yeşilyurt's \(2007\)](#) findings that school-experience courses lead prospective teachers to feel like a teacher and develop positive attitudes towards teaching are consistent with these results. Similarly, [Oh's \(2010\)](#) experimental study also revealed that teaching students helps prospective teachers improve their professional self-efficacy beliefs. These studies show school experience lessons to have an important influence on increasing the professional self-efficacy of prospective teachers. For this reason, teacher preparation programs need to offer prospective teachers more opportunities for real life experiences, such as teaching and managing classrooms in various contexts with different degrees of difficulty ([Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998](#)).

The qualitative findings determined prospective teachers' self-efficacy to be negatively impacted when instructors are inadequate in their field, are traditionalist, or lack constructivist understanding. Prospective teachers complained about instructors' traditional in-class approach, even though the instructors advised them to teach with constructivist approaches. A similar finding emerged in [Baştürk's \(2011\)](#) study, which examined an education faculty's training and education in terms of mathematics teacher-candidates' views. [Baştürk \(2011\)](#) stated prospective teachers to complain about their instructors not being good examples of constructivist education, the reason being that the instructors could not demonstrate constructivist education through example although they explained how it was supposed to be. However, research shows that modeling with explanations is more effective than learning only by explaining ([Rosenthal & Zimmerman, 1978](#)). For this reason, instructors' contributions to prospective teachers as models through in-class practices can contribute to their indirect experiences, another source of self-efficacy. [Oh \(2010\)](#) also found that indirect experiences that are provided to prospective teachers make a meaningful contribution to their self-efficacy beliefs on classroom management.

The qualitative findings reveal the negative influence on prospective teachers' professional self-efficacy from preparations for PPSEs and the accompanying stress, the low quotas for assigning teachers, low teacher salaries, and societal views on teaching profession. This finding shows parallels with the findings that [Atav and Sönmez \(2013\)](#) obtained in their research, where the public personnel selection exams negatively affect prospective teachers' social lives and undergraduate education. Prospective teachers stated thinking the reason for this being that undergraduate

education is not appropriate for PPSEs. They also expressed teacher-assignment quotas to be very low and anxiety about assignments to make them miserable. In support of this, Gündoğdu, Çimen, and Turan (2008) found the PPSE exams and preparation process to worsen prospective teachers emotionally, economically, and socially. For all these reasons, one can argue that PPSEs negatively influence prospective teachers' professional self-efficacy. Moreover, the fact that prospective teachers find teachers' salaries and the societal status of the teaching profession to be low can be said to have a negative effect on their fondness for teaching and, thus, their attitudes toward the profession as well.

Conclusion and Suggestions

This study mainly aims to quantitatively and qualitatively determine the factors influencing the beliefs (professional self-efficacy) of prospective teachers in their ability to carry out their profession effectively and to cope with the problems that may arise in class. As a result, the factors that can affect prospective teachers' professional self-efficacy have been generally identified as their perceived autonomy support, attitudes towards the teaching profession, undergraduate education, school-experience lessons (teaching practice), self-confidence, instructors' attitudes and proficiencies, affection for the profession, PPSEs, assignment problems, and societal status of teaching. The following suggestions can be made based on these results:

1. Prospective teachers' perceived autonomy support can affect their professional self-efficacy. For this reason, they should be given choices, their decisions should be respected, and they should have a say in activities during their undergraduate education in order to have them feel more autonomous.
2. Teacher candidates should be provided with applied courses apart from theoretical knowledge in undergraduate education. These studies are suggested to be in the form of microteachings, group discussions, or practices, rather than presentations.
3. This study determined prospective teachers' school-experience course to be an important source of self-efficacy. Therefore, the number of hours of the school-experience course should be notably increased, and the schools and supervisory teachers for this course should be equipped well enough to contribute to prospective teachers' self-efficacy.
4. Instructors can positively affect prospective teachers' professional self-efficacy and attitudes towards the profession by establishing positive relationships with them; caring about, trusting, and supporting them; becoming a model for them during practices, and avoiding being bossy or insulting. An in-service training program can be prepared for instructors who have inadequacies here.

5. Because of PPSE preparations, the stress and anxiety created from worrying about where one will be assigned can affect prospective teachers' professional self-efficacy; other methods can be used for selecting prospective teachers. For this purpose, the quota for undergraduate programs can be reduced and the undergraduate placement exam can have candidates be subjected to professional and psychological tests to determine their suitability to the profession.
6. As the quantitative part of this study was conducted using the relational research method, perceived autonomy support and attitudes toward teaching have been interpreted as being able to affect professional self-efficacy. As such, by comparing groups that are and are not given autonomy support, a future study can be conducted using an intervention design to examine its comparative effect on prospective teachers' professional self-efficacy, their attitudes towards the teaching profession, and their pedagogical content knowledge. Obtaining prospective teachers' opinions on these practices is also thought to contribute to the literature in this field.

References

- Adem, M. (1988). Öğretmen yetiştirme düzenimiz yeterli mi? [Is our teacher training system efficient?]. *Eğitim ve Bilim*, 12(69), 63–70.
- Allinder, R. M. (1994). The relationship between efficacy and the instructional practices of special education teachers and consultants. *Teacher Education and Special Education*, 17, 86–95. <http://dx.doi.org/10.1177/088840649401700203>
- Arastaman, G. (2013). Eğitim ve fen edebiyat fakültesi öğrencilerinin öz-yeterlik inançları ve öğretmenlik mesleğine karşı tutumlarının incelenmesi [Examination of education and arts and sciences faculty students' self-efficacy beliefs and their attitudes toward teaching profession]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 14(2), 205–217.
- Ashton, P., & Webb, R. (1986). *Making a difference: Teachers' sense of efficacy and student achievement*. New York, NY: Longman.
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72, 261–278.
- Asthan, P. (1984). Teacher efficacy: A motivational paradigm for effective teacher education. *Journal of Teacher Education*, 35(5), 28–32. <http://dx.doi.org/10.1177/002248718403500507>
- Atav, E., & Sönmez, S. (2013). Öğretmen adaylarının kamu personeli seçme sınavına (KPSS) ilişkin görüşleri [Özel Sayı] [The views of teacher candidates about public personnel selection examination (PPSE)] [Special Issue]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 1, 01–13.
- Aydın, S., Selçuk, A., & Yeşilyurt, M. (2007). Öğretmen adaylarının okul deneyimi II dersine ilişkin görüşleri [The effect of "school experience II" on preservice elementary teachers]. *Yüzüncü Yıl Üniversitesi, Eğitim Fakültesi Dergisi* 4(2), 75–90.
- Bandura, A. (1977). *Social learning theory*. New York, NY: General Learning Press.
- Bandura, A. (1986). *Social foundations of thought and action*. New Jersey, NJ: Prentice-Hall.

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.
- Baştürk, S. (2011). Matematik öğretmen adaylarının eğitim fakültesindeki eğitim-öğretim sürecini değerlendirmeleri [Mathematics teacher candidates' evaluations of teaching and learning process in faculty of education]. *Uluslararası İnsan Bilimleri Dergisi*, 8(1), 58–94.
- Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education*, 84, 740–756.
- Çapa, Y., Çakıroğlu, J., & Sarkaya, H. (2005). The development and validation of a Turkish version of teachers' sense of efficacy scale. *Education and Science*, 30(137), 74–81.
- Çetin, Ş. (2006). Öğretmenlik mesleği tutum ölçeğinin geliştirilmesi (Geçerlik ve güvenilirlik çalışması) [Establishment of the profession of teaching attitude scale (The study for validity and reliability)]. *Gazi Üniversitesi Endüstriyel Sanatlar Eğitim Fakültesi Dergisi*, 18, 28–37.
- Chatzisarantis, N. L. D., Hagger, M. S., Wang, C. K. J., & Thogersen-Ntoumani, C. (2009). The effects of social identity and perceived autonomy support on health behaviour within the theory of planned behaviour. *Curr Psychol*, 28, 55–68. <http://dx.doi.org/10.1007/s12144-009-9043-4>
- Cousins, J. B., & Walker, C. A. (2000). Predictors of educators' valuing of systemic inquiry in schools [Special Issue]. *Canadian Journal of Program Evaluation*, 25–53.
- Creswell, J. W. (2008). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). New Jersey, NJ: Pearson.
- Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Washington DC: Sage.
- Creswell, J. W., & Plano Clark, V. L. (2015). *Karma yöntem araştırmaları tasarımı ve yürütülmesi* [Designing and conducting mixed methods research] (2nd ed., Y. Dede, & S. B. Demir, Trans. Eds.). Ankara, Turkey: Anı Yayıncılık.
- Dadandı, İ., Kalyon, A., & Yazıcı, H. (2016). Eğitim fakültesinde öğrenim gören ve pedagojik formasyon eğitimi alan öğretmen adaylarının öz-yeterlik inançları, kaygı düzeyleri ve öğretmenlik mesleğine karşı tutumları [Teacher self-efficacy beliefs, concerns and attitudes towards teaching profession of faculty of education and pedagogical formation students]. *Bayburt Eğitim Fakültesi Dergisi*, 11(1), 253–269.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and Education: The self determination perspective. *Educational Psychologist*, 26(3&4), 325–346.
- Demircioğlu, H., Bulut, S., & Yıldırım, A. (1997). Ortaöğretimdeki fen ve matematik öğretimi problemleri ve öğretmen yetiştirmeye yönelik öneriler [The problems of teaching science and mathematics in secondary education and the suggestions with relating to teacher training]. *Eğitim ve Bilim*, 21(104), 25–30.
- Demirtaş, H., Cömert, M., & Özer, N. (2011). Öğretmen adaylarının öz yeterlik inançları ve mesleğe yönelik tutumları [Pre-service teachers' self-efficacy beliefs and attitudes towards profession]. *Eğitim ve Bilim*, 36(159), 96–111.
- Ekici, G. (2008). Sınıf yönetimi dersinin öğretmen adaylarının öğretmen öz-yeterlik algı düzeyine etkisi [The effects of the classroom management lesson on preservice teachers' teacher sense of self efficacy]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 35, 98–110.
- Fraenkel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in education*. New York, NY: Mc Graw Hill.

- Fritz, J. J., Miller-Heyl, J., Kreutzer, J. C., & MacPhee, D. (1995). Fostering personal teaching efficacy through staff development and classroom activities. *Journal of Educational Research*, 88, 200–208.
- Garmston, R. J. (1998). Becoming expert teachers. *Journal of Staff Development*, 19(1), 60–63.
- Gilik Güleç, D. (2012). *Öğretmen adaylarının öğretmenlik meslek bilgisi derslerine ilişkin görüşlerinin belirlenmesi* [Determination of pre-service teachers' perceptions on the teaching certificate courses] (Master's thesis, Mehmet Akif Ersoy University, Burdur, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi>
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11, 255–274.
- Guay, F., Boggiano, A. K., & Vallerand, R. J. (2001). Autonomy support, intrinsic motivation and perceived competence: Conceptual and empirical linkages. *Personality and Social Psychology Bulletin*, 27(6), 643–660.
- Gündoğdu, K., Çimen, N., & Turan, S. (2008). Öğretmen adaylarının kamu personeli seçme sınavına (KPSS) ilişkin görüşleri [The views of teacher candidates about public personnel selection examination (PPSE)]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 9(2), 35–43.
- Güven, İ. (2004). A qualitative study of perceptions of prospective social studies teachers towards school practices. *Kuram ve Uygulamada Eğitim Bilimleri*, 4(2), 291–300.
- Güvenç, H. (2011). Sınıf öğretmenlerinin özerklik destekleri ve mesleki öz yeterlik algıları [Autonomy support and self – efficacy perceptions of primary school teachers]. *Kuram ve Uygulamada Eğitim Yönetimi*, 17(1), 99–116.
- Hajloo, N. (2014). Relationships between self-efficacy, self-esteem and procrastination in undergraduate psychology students. *Iranian Journal of Psychiatry and Behavioral Sciences*, 8(3) 4–29.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York, NY: Routledge.
- Higher Education Institution. (1998). *A declaration about the new program to be implemented in educational faculties*. Retrieved from http://www.yok.gov.tr/documents/10279/49665/aciklama_programlar
- Kanadlı, S., & Bağçeci, B. (2016). Öğretmenlerin kişiler arası motivasyon stilleri: Öğrenme iklimi ölçeğinin Türkçe versiyonu [The teachers' interpersonal motivating styles: The Turkish version of the learning climate questionnaire]. *Anadolu Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 16(1), 1–12.
- Karasar, N. (2005). *Bilimsel araştırma yöntemi* [The method of scientific research]. Ankara, Turkey: Nobel Yayıncılık.
- Kavcar, C. (1980). Nitelikli öğretmen sorunu [The problems of qualified teacher]. *Eğitim ve Bilim*, 5(28), 17–22.
- Labone, E. (2004). Teacher efficacy: Maturing the construct through research in alternative paradigms. *Teaching and Teacher Education*, 20, 341–359.
- Lu, J., Jiang, X., Yu, H., & Li, D. (2015). Building collaborative structures for teachers' autonomy and self-efficacy: The mediating role of participative management and learning culture. *School Effectiveness and School Improvement*, 26(2), 240–257. <http://dx.doi.org/10.1080/09243453.2014.888086>

- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage.
- Morse, J. M. (2003). Principles of mixed methods and multimethod research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 189–208). Thousand Oaks, CA: Sage.
- Mulholland, J., & Wallace, J. (2001). Teacher induction and elementary science teaching: Enhancing self efficacy. *Teaching and Teacher Education, 17*(2), 243–261.
- Núñez, L. J., Fernández, C., León, J., & Grijalvo, F. (2015). The relationship between teacher's autonomy support and students' autonomy and vitality. *Teachers and Teaching, 21*(2), 191–202. <http://dx.doi.org/10.1080/13540602.2014.928127>
- Oh, S. (2010). *The sources that influence student teachers' sense of efficacy* (Graduate Theses and Dissertations Iowa State University, Iowa, The United States of America). Retrieved from <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=2820&context=etd>
- Olusola, O. (2013). Perceived competence, teacher autonomy-support and parent attachment as a predictor of students' academic achievement. *European Journal of Business and Social Science, 5*(8), 133–140.
- Pajares, F. (1996). Self-efficacy beliefs in achievement settings. *Review of Educational Research, 66*, 543–578.
- Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri* (3.basım) [Qualitative research & evaluation methods] (M. Bütün & S. B. Demir, Trans. Eds.). Ankara, Turkey: Pegem Akademi.
- Perlman, D. (2011). The Influence of an autonomy-supportive intervention on preservice teacher instruction: A self determined perspective. *Australian Journal of Teacher Education, 36*(11), 73–79.
- Ravi, T. S. (2013). Relationship between attitude towards teaching profession and teachers' self-efficacy beliefs. *International Journal of Education and Psychological Research, 2*(3), 69–75.
- Recepoglu, E. (2013). Öğretmen adaylarının yaşam doyumları ile öğretmenlik mesleğine ilişkin tutumları arasındaki ilişkinin incelenmesi [Özel Sayı] [Analyzing the relationship between prospective teachers' life satisfaction and attitudes concerning teaching profession] [Special Issue]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 1*, 311–326.
- Reeve, J. (1998). Autonomy support as an interpersonal motivating style: Is it teachable? *Contemporary Educational Psychology 23*, 312–330.
- Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal, 106*(3), 225–236.
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159–175.
- Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology, 91*(3), 537–548.
- Rigby, C. S., Deci, E. L., Patrick, B. P., & Ryan, R. M. (1992). Beyond the intrinsic-extrinsic dichotomy: Self determination in motivation and learning. *Motivation and Emotion, 16*, 165–185.
- Rosenthal, T. L., & Zimmerman, B. J. (1978). *Social learning and cognition*. New York, NY: Academic Press.
- Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of individual differences in children's perceptions. *Journal of Personality and Social Psychology, 50*, 550–558.

- Şahin Taşkın, Ç., & Hacıömeroğlu, G. (2010a). Examining preservice teachers' attitudes towards teaching profession in elementary education: A combination of quantitative and qualitative methods. *Elementary Education Online*, 9(3), 922–933.
- Şahin Taşkın, Ç., & Hacıömeroğlu, G. (2010b). Meslek bilgisi derslerinin öğretmen adaylarının profesyonel gelişimindeki önemi [Importance of pedagogy courses on preservice teachers' professional development]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 28, 165–174.
- Saklofske, D. H., Michayluk, J. O., & Randhawa, B. S. (1988). Teachers' efficacy and teaching behaviors. *Psychological Reports*, 63(2), 407–414. <http://dx.doi.org/10.2466/pr0.1988.63.2.407>
- Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Washington, DC: Sage.
- Sarı, E. (2016). *Öz güven duygusu* [The sense of self-esteem]. Antalya, Turkey: Nokta E-Kitap. Retrieved from <http://www.noktaekitap.net>
- Schunk, D. H. (2014). *Öğrenme teorileri: Eğitimsel bir bakış* [The theory of learning: An educational view] (M. Şahin, Trans. Ed.). Ankara, Turkey: Nobel.
- Schunk, D. H., & Pajares, F. (2005). Competence perceptions and academic functioning. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 85–104). New York, NY: Guilford Press.
- Semerci, N., & Semerci, Ç. (2004). Türkiye'de öğretmenlik tutumları [The teacher attitudes in Turkey]. *Fırat Üniversitesi Sosyal Bilimler Dergisi*, 14(1), 137–146.
- Şenel, H. G., Demir, İ., Sertelin, Ç., Kılıçaslan, A., & Köksal, A. (2004). Öğretmenlik mesleğine yönelik tutum ve kişilik özellikleri arasındaki ilişki [The relationship between attitudes toward teaching profession and personality characteristics]. *Eğitim Araştırmaları*, 15(4), 99–109.
- Senemoğlu, N. (2005). *Gelişim, öğrenme ve öğretim: Kuramdan uygulamaya* [Development, learning and teaching: From theory to the practice]. Ankara, Turkey: Pegem A Akademi.
- Skaalvik, E. M., & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teachers' engagement, job satisfaction, and emotional exhaustion. *Psychological Reports: Employment Psychology & Marketing*, 114(1), 68–77.
- Soenens, B., & Vansteenkiste, M. (2005). Antecedents and outcomes of self-determination in three life domains: The role of parents' and teachers' autonomy support. *Journal of Youth and Adolescence*, 34, 589–604.
- Sossic-Vasic, Z., Keis, O., Lau, M., Spitzer, M., & Streb, J. (2015). The impact of motivation and teachers' autonomy support on children's executive functions. *Frontiers in Psychology*, 6, 1–12.
- Sözer, E. (1989). Üniversitelerde öğretmen eğitimi ve bu günkü uygulamalar [The teacher training in universities and today's practices]. *Eğitim ve Bilim*, 13(73), 41–50.
- Stefanou, C. R., Perencevich, K. C., DiCintio, M., & Turner, J. C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student decision making and ownership. *Educational Psychologist*, 39, 97–110.
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching & Teacher Education*, 23(6), 944–956.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783–805. [http://dx.doi.org/10.1016/S0742-051X\(01\)00036-1](http://dx.doi.org/10.1016/S0742-051X(01)00036-1)
- Tschannon-Moran, M., Woolfolk-Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202–248.

- Üstüner, M. (2006). Öğretmenlik mesleğine yönelik tutum ölçeğinin geçerlik ve güvenirlik çalışması [Reliability and validity study of an attitude scale of teaching profession]. *Kuram ve Uygulamada Eğitim Yönetimi*, 45, 109–127.
- Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, 70, 767–779.
- Woolfolk Hoy, A., & Burke-Spero, R. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education*, 21, 343–356.
- Yeşilyurt, E. (2013). Öğretmen adaylarının öğretmen öz-yeterlik algıları [The teacher sense of self-efficacy of prospective teachers]. *Elektronik Sosyal Bilimler Dergisi*, 12(45), 88–104.

