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The Predictive Relationship between Pre-Service Teachers' Self-Efficacy Belief, Attitudes towards Teaching Profession and Teaching Motivation

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Abstract

The study aims to determine the predictive relationship between self-efficacy beliefs, attitudes toward the teaching profession, and teaching motivation among pre-service teachers. The study, in which 364 pre-service teachers participated, is designed as a correlational survey model. Teachers' Sense of Self-efficacy Scale, Attitude Scale of the Teaching Profession, and Motivation to Teach Scale are used as data collection tools. The independent variables in this study are willingness to choose the teaching profession and academic achievement. The dependent variables are teacher self-efficacy, attitudes toward the teaching profession, and teaching motivation. The result of the study suggests that as the general academic achievement average of pre-service teachers increase, their perceptions of teaching self-efficacy, teaching attitudes and teaching motivations also increase. The fact that pre-service teachers choose the teaching profession voluntarily affects their teaching self-efficacy perceptions, teaching attitudes and teaching motivations positively. There is a significant relationship between the pre-service teachers' teaching self-efficacy beliefs, teaching attitudes towards teaching, and teaching motivation levels. It can be concluded that intrinsic motivation toward teaching and teaching profession self-efficacy beliefs have a significant effect on attitudes toward teaching.

Keywords: Pre-service teachers' self-efficacy, Attitudes towards teaching, Teaching motivation, Academic success

Introduction

The main purpose of education is to raise virtuous, morally developed people. The main actors in this process are teachers. It is a vital issue for countries to train pre-service teachers who are equipped with content knowledge, general culture, and pedagogical content knowledge, highly motivated, and who have internalized the basic values and ideals of the society (Higher Education Council [HEC], 2018). Pre-service teachers are the teachers of the future, that is, the architects of the society. Teacher training studies have attracted attention as a subject area that has attracted the attention of researchers in the educational sciences discipline since the 2000s (Atalmış & Köse, 2018). Effective teachers are those who make their students active in the learning process, support the development of students in every aspect and provide feedback to them in this direction. These teachers design a well-functioning, respectful classroom that allows students to work effectively. Teachers make families a part of the learning process and establish a strong cooperation bond between school and family so that students can receive less obstacles and more support (Darling-Hammond & Baratz-Snowdon, 2005). The use of all these skills, and many others that we cannot list here, creates a difficult workday for teachers. In order to teach effectively, teachers are expected to develop themselves, be open to learning, love the teaching profession, and believe in themselves in this direction. It is known that affective domain characteristics such as self-efficacy, attitude and motivation have an important role in influencing teachers' teaching behaviors (Bandura, 1997; Korur, Rocio, & Noemi, 2016; Krathwohl et al., 1973; Senler & Sungur, 2010; Van Droogenbroeck, Spruyt, & Vanroelen, 2014). It is necessary to develop practices, lessons and activities in teacher training programs to increase self-efficacy, attitude, and motivation characteristics, which are important features for effective teaching. Lessons and activities in teacher training programs should be based on practical experiences that will positively affect teachers' affective characteristics, focusing on pedagogical content knowledge (Bümen, & Ozaydin, 2013; Clift & Brady, 2005). Some studies show that the current functioning of university-school cooperation in Turkey is insufficient and that pre-service teachers have expectations of increasing the number and duration of practice courses (Kula & Demirci Güler, 2021).

Pre-service teachers' self-efficacy beliefs, attitudes and motivations regarding the teaching profession are important indicators of the teachers they will become in the future. For this reason, it is thought that determining

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the characteristics of pre-service teachers, such as self-efficacy, attitude, and motivation in the pre-service period and investigating the variables and network of relations that interact with these characteristics, are considered very important for the field of the teacher.

Teachers' Self-efficacy

It is one of the important steps towards becoming a successful teacher that pre-service teachers feel competent in the teaching profession. In the Social Learning Theory, founded by Bandura (1977), self-efficacy is defined as a person's beliefs about one's abilities to organize and execute the actions necessary to perform any activity or task assigned. It is known that individuals with high self-efficacy beliefs do not give up in the face of difficulties and struggle with difficulties, in other words, they persevere to complete their actions (Bandura, 1997). In the context of teachers, self-efficacy can be defined as the belief that the teacher can achieve effective results for students even when students are not fully motivated (Tschannen– Moran & Woolfolk Hoy, 2001). Therefore, when a teacher's self-efficacy is high, it is observed that they have a higher enthusiasm for teaching (Allinder, 1994), can cope with difficulties in business life more easily (Skaalvik & Skaalvik, 2011), and have higher motivation (Baş, 2021).

Attitudes towards Teaching Profession

Attitudes are the emotional and mental tendencies of the individual towards all related objects and situations, which are formed as a result of life and experiences (Allport, 1967). Attitudes have a directive and dynamic effect on behavior. The fact that the attitude is affected by the experiences indicates that the attitude is formed as a result of a learning process (Tavşancıl, 2010). Our attitudes shape our behavior. Attitude towards the teaching profession can be defined as the individual's feelings and thoughts about teaching. In this context, pre-service teachers' attitudes towards the teaching profession are an important indicator of the teachers they will become in the future.

There are many studies in the literature to determine attitudes toward the teaching profession. When the findings of those studies are examined, it is possible to come across many different results that make it difficult to generalize. In the meta-analysis study conducted with 113 studies in Turkey, it is found that the attitudes of pre-service teachers towards the teaching profession differ depending on gender in favor of women; the attitudes towards the teaching profession did not differ in terms of grade level, presence of teachers in the family and faculty type (Atalmış & Köse, 2018). It is known that positive teaching attitudes are related to professional development (Kwakman, 2003), performance (Üstüner, 2006), and self-efficacy (Bakaç & Özen, 2017; Baş, 2021; Dadandı, Kalyon & Yazıcı, 2016; Demirel & Akkoyunlu, 2010; Demirtaş, Cömert & Özer, 2011; Yakar & Yelpaze, 2019; Girgin, Akamca, Ellez ve Oğuz, 2010), teaching motivation (Ayık & Ataş, 2014; Gök & Atalay Kabasakal, 2019), teaching beliefs (Baş, 2021), lifelong learning tendency (Çam & Üstün, 2016; Ünal & Akay, 2017), teaching-learning competencies (Şahan, & Zöğ, 2017), and satisfaction (Recepoğlu, 2013).

Teaching Motivation

Motivation, which is another dependent variable of this study, is an important factor that initiates and maintains human behavior (Ryan & Deci, 2000). In self-determination theory, which deals with motivation in two dimensions as, autonomous and controlled motivation, intrinsic motivation is an example of autonomous motivation. Self-determination theory points out a qualitative difference and defines autonomous motivation as more adaptive than the controlled motivation (Deci & Ryan, 2000). Intrinsic motivation involves people doing an activity because they find it interesting and derive satisfaction from it. On the other hand, extrinsic motivation requires an instrumentality between the activity and some separable result, such as tangible or verbal rewards, so satisfaction does not come from the activity itself but rather from the external consequences of the activity (Gagne & Deci, 2005).

Motivation, which affects human behavior, undoubtedly plays an active role in teachers' teaching behavior. There is previous research showing that motivation affects job performance (Amri, & Ramdani, 2021; Leithwood, 2006; Maryani, Entang, & Tukiran, 2021; Müller, Alliata, & Benninghoff, 2009). Therefore, it is possible to say that teachers' teaching motivation will directly affect their professional performance (Fachmi, Mustafa & Ngandoh, 2021; Haryaka & Sjamsir, 2021) and their professional development efforts (Butler, 2007; Watt & Richardson, 2007). Teaching motivation affects teachers' behavior in the classroom and indirectly supports students' learning outcomes (Bernaus, Wilson, and Gardner, 2009). In addition, teachers' motivation directly affects student motivation (Kalyar, Ahmad, & Kalyar, 2018). To summarize, the teaching profession is a difficult profession that

serves to raise people and must be carried out with love, devotion, and self-sacrifice (Budak & Kula, 2017). It is known that affective characteristics of pre-service teachers such as self-efficacy, motivation, and attitude, will affect Phow they perform their Profession and their students. It is thought that revealing the variables that affect these affective characteristics and the relationships between them will make important contributions to the field of teacher training, development of pre-service education, and educational sciences literature.

This study explores the relationship between self-efficacy beliefs, attitudes toward the teaching profession, and teaching motivation among pre-service teachers. Research sub-problems are as follows:

1. Does pre-service teachers' general academic achievement average have a significant difference in their teaching self-efficacy beliefs, attitudes towards teaching Profession, and teaching motivation levels?
2. Does willingness to choose the teaching profession significantly differ pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels?
3. Is there a significant relationship between pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels?
4. Do pre-service teachers' self-efficacy beliefs about teaching and their level of teaching motivation significantly predict their teaching attitudes?

Method

Research Design

This study used a correlational survey model to investigate the relationships between pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels. The correlational survey model is a research model that investigates the existence and/or degree of co-variance between two or more variables (Karasar, 1995). The study also examines whether pre-service teachers' academic achievement averages and willingness to choose the teaching profession affect their teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels.

Participants

Three hundred sixty-seven pre-service teachers studying at the Faculty of Education of a State University in the Central Anatolia Region of Turkey participated in the research. To ensure the normality of the data during the data analysis phase, the data of three participants with extreme values were excluded from the analysis, and the number of participants was determined as 364. The demographic characteristics of the participants are given in Table 1.

Table 1. Pre-service teachers' demographic information

Gender	n	%
Female	256	70.3
Male	108	29.7
Age	n	%
17-20	214	58.8
21-25	136	37.3
26-30	10	2.7
31-35	2	0.6
36+	2	0.6
Age *M(SD)*	*20.68(2.4)*	
Academic achievement average	n	%
1.00-1.50	1	0.3
1.51-2.00	2	0.5
2.01-2.50	7	1.9
2.51-3.00	69	19
3.01-3.50	190	52.2
3.51-4.00	93	25.5
Department	n	%
Mathematics Education	110	30.2
Turkish Education	105	28.8
Preschool Education	66	18.1

Classroom Education	52	14.3
Science Education	17	4.7
Guidance and Psychological Counseling	14	3.8
Willingness to choose the teaching profession	n	%
Yes	315	86.5
No	49	13.5
Willingness to choose the teaching profession M(SD)	*1.13 (.34)*	
Total	364	100

The characteristics of the participating pre-service teachers given in Table 1 show that 70.3% (n=256) of the pre-service teachers are female, 29.7% (n=108) are male, with an average age of 20.68. The departments of 30.2% (n=110) of the pre-service teachers are Mathematics Education, 28.8% (n= 105) Turkish Education, 18.1% (n=66) Preschool Education, 14.3% (n=52) Classroom Education, 4.7% (n=17) Science Education and 3.8% (n=14) Guidance and Psychological Counseling. While 86.5% (n=315) of the pre-service teachers chose the teaching profession willingly, 13.5% (n=49) did not choose the teaching profession willingly.

Data Collection Tools

The research data were collected in personal information form and with three different instruments. These instruments will be introduced below

Personal Information Form: In the personal information form developed by the researcher, there are questions about pre-service teachers' gender, the department they study, grade level, age range, academic grade point averages and whether they choose the teaching profession willingly.

Teachers' Sense of Self-efficacy Scale: The scale developed by Tschannen-Moran and Woolfolk Hoy (2001) to determine teachers' self-efficacy beliefs was adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005). In the adaptation study carried out with 628 pre-service teachers studying at six different universities in four big cities of Turkey, three sub-dimensional scale structures were determined: student engagement, instructional strategies and classroom management. Including 24 items, the scale consists of 9 intervals, graded with 5 points as "insufficient", "slightly sufficient", "sufficient", "quite sufficient" and "very sufficient". While the lowest score that can be obtained from the scale is 24, the highest score is 216.

The Cronbach's alpha reliability coefficient of the total scale in this study was .96. The Cronbach's alpha reliability coefficient of the "student engagement" sub-scale was .90, the "instructional strategies" sub-scale was .92 and the "classroom management" sub-scale was .90.

Attitude Scale of Teaching Profession: The Attitude Scale of the Teaching Profession was developed by Üstüner (2006). In the research, 449 pre-service teachers studying in 11 different education faculties were studied. The scale, which consists of 34 items and one dimension, is organized as a 5-point Likert scale: "I totally disagree", "I partially agree", "I agree moderately", "I mostly agree" and "I totally agree".24 of the 34 items that make up the scale express positive attitudes and 10 of them express negative attitudes. When items expressing negative attitudes are reverse coded, the minimum score that can be obtained from the scale is 34, while the maximum score is 170.To determine the reliability of the scale, a test-retest was performed with an interval of 4 weeks, and .72 was calculated. The Cronbach's alpha calculated for the internal consistency coefficient was found .93. The Cronbach's alpha reliability coefficient of the scale in this study was .94.

Motivation to Teach Scale: The Motivation to Teach Scale, developed by Kauffman, Yılmaz Soylu, and Duke (2011), and adapted into Turkish by Güzel Candan and Evin Gencel (2015), was used to determine pre-service teachers' teaching motivations. This scale consists of 12 items and two sub-dimensions as intrinsic and extrinsic teaching motivation. The scale was prepared in a 6-point Likert type as "strongly disagree", "disagree", "somewhat disagree", "somewhat agree", "agree" and "strongly agree". The lowest score that can be obtained from the entire scale is 12, and the highest score is 72.The reliability coefficient in this study was .84 for the factor of intrinsic motivation, whereas it was .79 for the factor of extrinsic motivation, and it was .69 for the total scale.

Data Collection and Analysis

Before the data collection process, pre-service teachers were informed about the purpose of the research. Data were collected in the spring term of 2021-2022. Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 22), at a significance level of .05.

The data were first subjected to analysis of normality using the skewness-kurtosis coefficients, and 3 data outside the normal distribution were extracted. After that, the analyses were started after the conditions of normality were met. The Teachers' Sense of Self-efficacy Scale's skewness was observed -.782, kurtosis 1.090, and std. error .127; Attitude Scale of Teaching Profession's skewness -1.048, kurtosis .1.809 and std. error .127; Motivation to Teach Scale's skewness -.617, kurtosis .637 and std. error .127. When kurtosis and skewness values are between -2.0 and +2.0, the data is considered to be normally distributed (Georgeo and Mallery, 2016). For this reason, parametric tests were used in the analysis of the data. The mean and standard deviation of research variables were computed to obtain descriptive statistics. The pearson correlation test was used to investigate the relationship between variables. Multiple regression analysis was used to reveal the degree of correlations found between the variables in the model. While the study's independent variables were willingness to choose the teaching profession and academic success, dependent variables were teacher self-efficacy, attitudes towards the teaching profession, and teaching motivation. The data regarding the study's independent variables do not show a normal distribution. The data regarding academic success averages were determined as skewness -.855, kurtosis 2.037, willingness to choose the teaching profession skewness 2.141, and kurtosis 2,597. For this reason, non-parametric analyzes were used while analyzing the independent variables of the research. Mann-Whitney U test was used to compare two independent means, Kruskal-Wallis test was used to compare more than two means.

Results

Pre-Service Teachers' General Academic Achievement

The descriptive statistics of the Teachers' Sense of Self-efficacy Scale, Attitude Scale of the Teaching Profession, and Motivation to Teach Scale scores are given in Table.2.

Table 2. Descriptive statistics on the scales

Scales and Sub-dimensions	N	Min	Max	$\bar{x}$	SD
Teachers' Sense of Self-efficacy Scale	364	3.79	9.00	7.43	.94
Efficacy for Student Engagement	364	2.63	9.00	7.47	1.00
Efficacy for Instructional Strategies	364	2.13	9.00	7.45	1.04
Efficacy for Classroom Management	364	3.88	9.00	7.39	.99
Attitude Scale of Teaching Profession	364	1.18	5.00	4.13	.62
Motıvatıon to Teach Scale	364	1.00	6.00	4.16	.86
Motıvatıon to Teach Scale - intrinsic motivation	364	1.00	6.00	4.31	.94
Motıvatıon to Teach Scale - Extrinsic motivation	364	1.00	6.00	3.96	.96

The descriptive statistics given in Table 2 shows that Teachers' Sense of Self-efficacy Scale $\bar{x}$ = 7.43, student engagement sub-dimension $\bar{x}$ = 7.47, instructional strategies $\bar{x}$ = 7.45 and classroom management $\bar{x}$ = 7.39 for pre-service teachers. The Attitude Scale of Teaching Profession was calculated as $\bar{x}$ = 4.13 for pre-service teachers. Pre-service teachers' teaching motivations were $\bar{x}$ = 4.16, intrinsic motivation $\bar{x}$ = 4.31 and extrinsic motivation $\bar{x}$ = 3.96.

The level of teaching self-efficacy beliefs, attitudes towards the teaching profession, and teaching motivation of pre-service teachers were examined according to their general academic achievement average. The results are given in Table 3.

Table 3. Comparison of pre-service teachers' scores based on the scales by their general academic achievement average

Teachers' Sense of Self-efficacy Scale		N	Mean	df	Chi-Square X^2	p
General academic achievement average	1.00-1.50	1	232.00	5	17.655	.003
	1.51-2.00	2	195.00			
	2.01-2.50	7	84.86			
	2.51-3.00	69	148.83			
	3.01-3.50	190	185.34			
	3.51-4.00	93	204.34			
Efficacy for Student Engagement		N	Mean	df	Chi-Square X^2	p
General academic achievement average	1.00-1.50	1	166.50	5	21.990	.001
	1.51-2.00	2	226.75			
	2.01-2.50	7	69.36			
	2.51-3.00	69	143.78			
	3.01-3.50	190	188.84			
	3.51-4.00	93	202.11			
Efficacy for Instructional Strategies		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	264.00	5	15.996	.007
	1.51-2.00	2	156.50			
	2.01-2.50	7	101.29			
	2.51-3.00	69	150.11			
	3.01-3.50	190	184.05			
	3.51-4.00	93	205.26			
Efficacy for Classroom Management		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	254.50	5	13.016	.023
	1.51-2.00	2	200.50			
	2.01-2.50	7	92.21			
	2.51-3.00	69	158.58			
	3.01-3.50	190	181.86			
	3.51-4.00	93	203.29			
Attitude Scale of Teaching Profession		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	267.50	5	23.978	.000
	1.51-2.00	2	183.00			
	2.01-2.50	7	78.57			
	2.51-3.00	69	156.38			
	3.01-3.50	190	175.59			
	3.51-4.00	93	218.99			
Motivation to Teach Scale - intrinsic motivation		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	291.50	5	22.735	.000
	1.51-2.00	2	167.75			
	2.01-2.50	7	61.36			
	2.51-3.00	69	144.29			
	3.01-3.50	190	193.84			
	3.51-4.00	93	192.04			
Motivation to Teach Scale - Extrinsic motivation		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	342.00	5	10.336	.066
	1.51-2.00	2	238.50			
	2.01-2.50	7	85.93			
	2.51-3.00	69	168.96			
	3.01-3.50	190	186.07			
	3.51-4.00	93	185.70			

Table 3 shows that pre-service teachers' perceptions of teaching self-efficacy differ significantly according to their academic achievement averages (x^2=17.655, p<.05).It is determined that pre-service teachers' self-efficacy perceptions regarding student participation show a significant difference according to their academic achievement averages (x^2=21.990, p<.05).Pre-service teachers efficacy for instructional strategies shows a significant difference according to their academic achievement averages (x^2=15.996, p<.05).Pre-service teachers' efficacy for classroom management shows a significant difference according to academic achievement averages

(x^2=13.016, p<.05).Pre-service teachers' attitudes towards the teaching profession show a significant difference according to their academic achievement averages (x^2=23.978, p<.05).Pre-service teachers' intrinsic motivation regarding teaching shows a significant difference according to their academic achievement averages (x^2=22.735, p<.05).Pre-service teachers' extrinsic motivations regarding teaching does not show a significant difference according to their academic achievement averages (x^2=10.336, p>.05). There are 3 participants whose results are not consistent with others; their academic achievement averages were the 3 lowest in the study varying between 1.00 and 2.00. As the academic achievement average of 361 pre-service teachers excluding these three participants increases, their perceptions of teaching self-efficacy, teaching attitudes, and teaching motivations increase.

Willingness to Choose the Teaching Profession

The level of teaching self-efficacy beliefs, attitudes towards the teaching profession and teaching motivation of pre-service teachers were examined according to their willingness to choose the teaching profession. The results are given in Table 4.

Table 4. Comparison of pre-service teachers' scores based on the scales by their willingness to choose the teaching profession.

Teachers' Sense of Self-efficacy Scale		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	190.01	5352.00	.001
	No	49	134.22		
Efficacy for Student Engagement		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	189.91	5383.00	.001
	No	49	134.86		
Efficacy for Instructional Strategies		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	188.91	5697.00	.003
	No	49	141.27		
Efficacy for Classroom Management		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	188.93	5691.00	.003
	No	49	141.14		
Attitude Scale of Teaching Profession		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	198.59	2648.00	.000
	No	49	79.05		
Motıvatıon to Teach Scale - intrinsic motivation		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	198.20	2772.00	.000
	No	49	81.57		
Motıvatıon to Teach Scale - Extrinsic motivation		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	191.67	4829.50	.000
	No	49	123.56		

Table 4 shows that pre-service teachers' perceptions of teaching self-efficacy show a significant difference according to their willingness to choose the teaching profession (U=5352.00, p<.05). Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher perception of teaching self-efficacy than those who do not. Pre-service teachers' self-efficacy perceptions regarding student participation show a significant difference according to their willingness to choose the teaching profession (U=5383.00, p<.05). Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher self-efficacy perception regarding student participation than those who do not. Pre-service teachers' efficacy for instructional strategies shows a significant difference according to their willingness to choose the teaching profession (U=5697.00, p.05). Those who choose the teaching profession voluntarily have significantly higher efficacy for instructional strategies than those who do not. The efficacy of pre-service teachers for classroom management differs significantly according to their willingness to enter the teaching profession (U = 5691.00, p.05). Among the pre-service teachers, those who chose the teaching profession willingly have a significantly higher efficacy for classroom management than those who did not. Pre-service teachers' attitudes towards the teaching profession show a significant difference according to their willingness to choose the teaching profession (U=2648.00, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher attitude towards the teaching profession than those who do not. Pre-service teachers' intrinsic motivations regarding teaching show a significant difference in their willingness to choose the teaching profession (U= 2772.00, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher intrinsic motivation regarding teaching than those who do not. Pre-service teachers' extrinsic motivations for teaching show a significant difference according to their willingness to choose the teaching

profession (U= 4829.50, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher extrinsic motivation for teaching than those who do not.

Relationship between Pre-Service Teachers' Teaching Self-Efficacy Beliefs, Their Attitudes toward Teaching, and Their Teaching Motivation Levels

Pearson correlation coefficients among the pre-service teachers' teaching self-efficacy beliefs, their attitudes toward teaching, and their teaching motivation levels are presented in Table 5.

Table 5. The relationship between teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels of pre-service teachers

Variables	1	2	3	4	5	6	7
1. Teachers' Sense of Self-efficacy	1						
2. Efficacy for Student Engagement	.930**	1					
3. Efficacy for Instructional Strategies	.950**	.842**	1				
4. Efficacy for Classroom Management	.919**	.763**	.812**	1			
5. Attitude of Teaching Profession	.564**	.547**	.550**	.481**	1		
6. Intrinsic motivation	.460**	.484**	.448**	.355**	.604**	1	
7. Extrinsic motivation	.268**	.237**	.261**	.251**	.351**	.643**	1

**p<0.01, * p<0.05

In the interpretation of the Pearson correlation coefficient between the two variables, it can be said that there is a low level relation when the r value is between 0.00 and 0.30, a moderate level relation between 0.30-0.70, and a high level relation between 0.70-1.00 (Büyüköztürk, 2002). The results in Table 5shows that there was a positive moderate level relation between the pre-service teachers' sense of self-efficacy and attitude of teaching profession (r = .564, p< .01); a positive moderate level relation between the pre-service teachers' sense of self-efficacy and intrinsic motivation for teaching(r = .460, p< .01); a positive low level relation between the teachers' sense of self-efficacy and extrinsic motivation for teaching (r = .268, p< .01);a positive moderate level relation between the pre-service teachers' sense of self-efficacy for student engagement and attitude of teaching profession (r = .547, p< .01); a positive moderate level relation between the pre-service teachers' sense of self-efficacy for student engagement and intrinsic motivation for teaching (r = .484, p< .01); a positive low level relation between the pre-service teachers' sense of self-efficacy for student engagement and extrinsic motivation for teaching (r = .237, p< .01);a positive moderate level relation between the teachers' sense of self-efficacy for instructional strategies and attitude of teaching profession (r = .550, p< .01); a positive moderate level relation between the teachers' sense of self-efficacy for instructional strategies and intrinsic motivation for teaching (r = .448, p< .01); a positive low level relation between the teachers' sense of self-efficacy for instructional strategies and extrinsic motivation for teaching (r = .261, p< .01);a positive moderate level relation between the teachers' sense of self-efficacy for classroom management and attitude of teaching profession (r = .481, p< .01); a positive moderate level interaction between the teachers' sense of self-efficacy for classroom management and intrinsic motivation for teaching (r = .355, p< .01); a positive low level relation between the teachers' sense of self-efficacy for classroom management and extrinsic motivation for teaching (r = .251, p< .01); a positive moderate level relation between the attitude of teaching profession and intrinsic motivation for teaching (r = .604, p< .01); a positive moderate level relation between the attitude of teaching profession and extrinsic motivation for teaching (r = .351, p< .01).

Predictive Analysis

On the basis of these findings, a multiple regression analysis was conducted to determine the strength of the associations; the results are presented in Table 6.

Table 6. The results of multiple regression analysis

Variables	B	Standard error	β	t	p	Partial r	Durbin-Watson
Constant	1.14	.20	-	5.76	.000	-	2.19
Teachers' sense of self-efficacy	.24	.03	.36	8.35	.000	.403	
Intrinsic motivation	.31	.04	.47	8.58	.000	.412	
Extrinsic motivation	-.03	.03	-.05	-.93	.351	-.049	
R=.685 R^2=.469 F=106.184 p=.000							
Dependent variable: Attitude of teaching profession							

Table 6 shows that self-efficacy and motivation variables are significant predictor of teaching attitude (R=.685, R^2=.469; p<.01). Self-efficacy and motivation variables together explain 47.00% of the total variance in attitude. When the t-test results regarding the significance of the regression coefficients are analyzed, it is seen that self-efficacy and intrinsic motivation variables other than extrinsic motivation are significant predictors of attitude scores. The Durbin-Watson test value in the table shows no autocorrelation in the model since it takes a value of around 1.5-2.5. As a result of the analysis, it can be said that intrinsic motivation for teaching and teaching profession self-efficacy beliefs significantly affect teaching attitude.

Discussion

In the present study, as pre-service teachers' general academic achievement average increases, their perceptions of teaching self-efficacy, teaching attitudes and motivations increase. As pre-service teachers' general academic achievement average increases, their efficacy for student engagement, instructional strategies, and classroom management levels increase. In this context, it can be thought that students with high academic success in teacher training programs in Turkey may also have strong affective characteristics related to teaching. It should not be overlooked that pre-service teachers can have positive teaching perceptions by increasing their course success in the teacher training process.

Pre-service teachers' willingness to choose the teaching profession positively affects their teaching self-efficacy perceptions, teaching attitudes and teaching motivations. This result shows that pre-service teachers' willingness towards the teaching profession is important in determining their teaching self-efficacy perceptions, attitudes and motivations. There were also different research findings confirming that the pre-service teachers who willingly chose the department they studied and wanted to teach to have high self-efficacy, attitude, and motivation about teaching (Çapa & Çil, 2010; Gök, Atalay Kabasakal, 2019). In this direction, it can be determined as an important criterion whether individuals want to teach while choosing students for teacher training faculties.

There is a significant relationship between the pre-service teachers' teaching self-efficacy beliefs, teaching attitudes towards teaching, and teaching motivation levels. There are many research findings that confirm the relationship between teaching self-efficacy beliefs and attitudes toward teaching (Baş, 2021; Çakır, 2005; Çakır, Erkuş & Kılıç, 2004; Kanadlı, 2017; Poulou, 2007) and between attitudes toward teaching and motivation to teach (Ayık & Ataş, 2014; Baş, 2021; Chien et al., 2012).These mutually supportive findings clearly indicate that there are close and reciprocal relationships among teaching motivation, self-efficacy beliefs, and teaching attitudes. Intrinsic motivation for teaching and teaching profession self-efficacy beliefs have a significant effect on teaching attitude.Similar research findings revealing the effects of motivation and self-efficacy on teaching attitudes are also available in the literature (Chan, & Lay, 2021). This finding shows that when pre-service teachers believe they have effective teaching skills, they develop a positive attitude towards the teaching profession.Therefore, the importance of a teacher training program that focuses on improving pre-service teachers' teaching skills becomes evident. One of the pleasing research findings in Turkey is that the self-efficacy beliefs of pre-service teachers increase gradually during their undergraduate education (Bümen & Özaydın, 2013; Gökdağ Baltaoğlu, Sucuoğlu & Yurdabakan, 2015). These findings suggest that teacher training programs in Turkey positively affect pre-service teachers' self-efficacy beliefs.However, another research finding highlights that the positive attitudes of pre-service teachers towards the teaching profession tend to decrease during their undergraduate education (Tok, 2011). Pre-service teachers' professional self-efficacy is influenced by their undergraduate education, teaching practice experience, self-confidence, teaching staff pedagogical knowledge, job placement examinations, and the current social status of the teaching profession (Kanadlı, 2017).It is known that teachers' self-efficacy beliefs and emotional commitment to the teaching profession are strong predictors of the continuation of the Profession (Canrinus et al., 2012; Maslinsky, & Ivaniushina, 2016). To increase the teaching motivation and skills of pre-service teachers, practice-based education should be given importance in teacher training programs (Higgs, Barnett, Billett, Hutchings & Trede, 2013). Several studies have found that teaching beliefs and attitudes toward teaching significantly predict motivation to teach. Teaching self-efficacy has been found to play a mediating role in the interaction between teaching beliefs, attitudes toward teaching, and motivation to teach (Baş, 2021). It is known that teachers' autonomous motivation for teaching energizes students to support their basic psychological needs, increases an energizing effect on teachers' functioning, and reduces burnout (Van den Berghe, Soenens, Aelterman, Cardon, Tallir, & Haerens, 2014).

Conclusion

This study examined the relationships between pre-service teachers' self-efficacy beliefs, teaching profession attitudes and teaching motivations, which support pre-service teachers to be effective teachers, and some variables (academic success and willingness to choose to teach).The characteristics examined in the research are extremely important for effectively performing the teaching profession. Because teachers who do not have a positive belief and attitude towards teaching have difficulties in their Profession, have difficulties in overcoming the problems they encounter, and even tend to leave the Profession shortly after starting the Profession (Skaalvik & Skaalvik, 2011). Effective professional development programs can change teachers' characteristics such as self-efficacy, motivation and attitude. Because it is known that teachers' emotional-motivational attitudes can be changed with professional development (Brick, Cooper, Mason, Faeflen, Monmia, & Dubinsky, 2021). Teacher training programs should be aimed to transform pre-service teachers' perceptions of the teaching profession and themselves into a positive one by using interactive, collaborative, and authentic practices instead of traditional methods based on lectures (Clift & Brady, 2005; Liaw, 2009). For this reason, there is a need for experimental and qualitative research on the practices that can be done to increase pre-service teachers' and teachers' teaching self-efficacy beliefs, motivations, and teaching attitudes whose relations with each other are revealed. Different affective characteristics that these variables may be related to should be investigated, and suggestions should be made for the development of teacher training programs.

Recommendations

The present study was conducted with a limited number of pre-service teachers studying at a single-state university located in the Central Anatolian Region of Turkey. In this context, generalization has limitations. By collecting similar data with pre-service teachers from different regions and countries, the sample should be expanded and generalizable findings should be reached. Another limitation of the research is that it consists of only quantitative data. Making research designs supported by qualitative data with similar variables is recommended.

Acknowledgements or Notes

The ethical committee approval of the study was obtained from the Social and Humanities SciencesResearch Ethics Committee at Kirsehir Ahi Evran University (Approval Number is 2022/1/11).

Conflicts of Interest

There are no conflicts of interest regarding the publication of this paper.

Ethical Approval

The ethical committee approval of the study was obtained from the Social and Humanities SciencesResearch Ethics Committee at Kirsehir Ahi Evran University (Approval Number is 2022/1/11).

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