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Personal Traits and Levels of Class Engagement of Pre-Service Teachers

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Abstract

It is thought that determining the relationship between the personal traits of pre-service teachers and their level of class engagement will shed light on the development and implementation of the curricula in the faculties of education. From this point of view, it was aimed in this study to determine the personality traits of pre-service teachers according to the five-factor method of personality and to determine how they affect their level of class engagement. The personality traits and the level of class engagement of the pre-service teachers in the scope of this study are examined by gender, field of teaching, grade, whether or not they willingly study in their departments, and the settlement variables they grow in. Single and relational screening models have been utilized in this research. The study group of the research consists of 372 pre-service teachers studying in the 3rd and 4th grades of Trakya University. In the research, "class engagement scale" and "big five personality traits test" were used as data collection tools. As a result of the analysis, it was found that the pre-service teachers' level of engagement in the class was "medium" and "high". It was determined that pre-service teachers had the most "Agreeableness" trait of personality and the lowest rate as "Neuroticism" trait of personality. Pre-service teachers' level of engagement in class did not differ significantly according to their personality traits.

Keywords: Pre-Service Teachers, Class Engagement, Five-Factor Method of Personality.

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Introduction

Personality is the determinant of the continuing attitudes displayed by the individuals in their general stance in life. It could be accepted that the concept that is effective in transforming the decisions made at every stage of life into behavior is personality. Individuals' physical, mental and spiritual traits are part of their personalities (Bozkurt, 2007; Suldo, Minch & Hearon, 2015). It is emphasized by Parks-Leduc, Feldman & Bardi (2015) that personality is the determinant of the results obtained in many studies. Therefore, personality emerges as an important concept that separates individuals from each other.

The word "personality" is derived from the Latin origin word "persona", which means "mask". Although it basically comes from a meaning related to the person's appearance, it has transformed a meaning that explains the deeper character traits over time (Srivastava, 2019). This change in the meaning of the word may be due to the fact that the potential existing in the cognitive world of individuals is able to be expressed with their behaviors. The determinants of personality include biological structure (Caspi, Roberts, & Shiner, 2005), social and cultural interactions (Heine & Buchtel, 2009). It has a very effective role on personality in psychological processes (Parks & Guay, 2009). It is stated by Schults and Schults (2016) that there are three standards in the definition of personality. 1. The state of being a human being 2. The nature and characteristics of the distinctive features of the people 3. The sum of the mental, emotional and social characteristics of the people. Based on the characteristics and definitions related to the personality, it could be concluded how complex the personality is.

It is a fact that the concept of personality is not easy to be specified owing to its extensive structure and being a feature that could not be directly measured. Five-factor model of personality is the most useful and practical model for measuring personality by classification (Barrick, Mount, & Judge, 2001). The fact that the measurement results made by the five-factor model of personality are reliable and that they are compatible with the results of other studies reveal the superiority of this model (Parks & Guay, 2009). The five-factor model of personality is organized as a relatively narrow scope of personality trait structures and customized under five basic factors. The five factors that make up this theory are; "Extraversion", "Agreeableness", "Conscientiousness", "Neuroticism" and "Openness to experience" (Allik & Allik, 2002).

Table 1: Five-Factor Model of Personality (Demirci, Özler & Girgin, 2007; McCrae & Costa, 2008)

Factors	High Score	Low Score
Extraversion	Prefers to be into social relationships, sincerity	Prefers to be alone, being distant
Agreeableness	Being able to cooperate, understanding	Difficulty in communicating, obstinate
Conscientiousness	Success and goal oriented, manages the time well	Irregular, not being able to follow plans, postpone
Neuroticism	Self-confident, able to cope with stress, patience	Pessimistic, hopeless, having low self-perception
Openness to experience	Being open for innovations, creativity	Traditional, conservative, not open for change

In the study conducted by Yamagata, et. al, (2006) in order to examine whether the universality of the five-factor model of personality depends on genetic effects that do not change amongst different countries, phenotypic, genetic and environmental correlation matrices, calculated from 1,209 monozygotic and 701 dizotic pairs from Canada, Germany and Japan, were studied. Five genetic and environmental factors were obtained for each sample. It was concluded that phenotypic, genetic and environmental factors in each sample have high coefficients of compliance when each factor is compared amongst samples. These results show that the five-factor model of personality has a solid biological basis and can represent a common heritage of the human species.

It has been demonstrated that the five-factor model of personality has made significant contributions to the literature in determining the relationship of personality with different characteristics by means of many studies (Demirci, Özler & Girgin, 2007; John, Naumann & Soto, 2008; Shiner & Caspi, 2003). The relationship between five-factor model of personality and organizational dissent (Ötken & Cenkci, 2013), attitude towards teaching (Aslan & Yalçın, 2013), helping styles (Çivitçi & Arıcıoğlu, 2012) has been revealed. It could be thought that the five-factor model of personality also has a relationship with the level of class engagement.

The success of the teaching process in educational institutions is closely related to the student engagement in the class. While Reschly and Christenson (2006) classifies the dimensions of class engagement as cognitive, affective and behavioral; it is argued by Reeve and Lee (2014) that student engagement in the class has four dimensions: cognitive, affective, behavioral and effective. Behavioral engagement is related to the student's active role in indoor and outdoor activities, scientific engagement is related to associating the information they learned with daily events, emotional engagement is related to the students' willingly engaging in the classes, seeing themselves as a part of the school, and fondly participating in activities (Eryaman, 2007; Eryilmaz, 2014).

There are many factors that affect students' engagement in the class. High quality class engagement predicts constructive changes in students' motivation (Reeve & Lee, 2014). Class engagement allows students to enjoy the lesson more and it makes the lesson more entertaining. In addition, students who have positive relationships with their peers and teachers are more likely to engage and succeed in the lesson (Furrer, Skinner & Pitzer, 2014; Linnakylä & Malin, 2008). The emotional state of the class environment is an important factor in students' engagement in the class (Reyes, Brackett, Rivers, White & Salovey, 2012). Exclusion by peers adversely affects class engagement and academic success of the students (Buhs, Ladd & Herald, 2006).

Students' class engagement is realized by being active during the class, so their attention, interests and focus should be in the activities held in the class (Wang, Bergin & Bergin, 2014). In the study conducted by Eskici (2018), ways to attract attention in teaching in line with the opinions of pre-service teachers are gathered under four titles as "using materials", "adding fun factor",

"communicating" and "activating the student". It could be said that the engagement of the students during the lesson is in a reversible relationship with their being active. Students will be active as they engage in the lesson, thus their level of engagement will increase as they become active. It is emphasized that the use of different technology-supported teaching methods in the classes taught by Ally (2012) will increase the students' attention and engagement in the lesson, therefore the success rate will increase. In addition, it has been claimed that the seating patterns in higher education have an effect on the level of attentiveness and engagement in classes (Shernoff, et. al., 2017).

Student engagement is the key that opens the door to academic success (Reyes, et. al, 2012). There are many factors that affect students' level of engagement in classes. It is an indispensable fact that a concept that shapes the character of the individual in every step of his life, such as personality traits, will affect the students' engagement in the class. Particularly, considering the importance of teacher training process, it is thought that determining the relationship between the personal traits of pre-service teachers and their level of class engagement will shed light on the development and implementation of the curricula in the faculties of education. From this point of view, it was aimed in this study to determine the personality traits of pre-service teachers according to the five-factor method of personality and to determine how they affect their level of engagement. For this purpose, answers to the following research questions were sought:

1. What is the level of pre-service teachers' engagement according to;
 - a) Gender, b) Field of teaching, c) Grade, d) Whether or not they willingly study in their departments, e) The settlement variables they grow in?
2. Does the pre-service teachers' level of engagement vary according to,
 - a) Gender, b) Grade, c) Field of teaching, d) Whether or not they willingly study in their departments.
3. Which personality traits do the pre-service teachers have according to;
 - a) Gender, b) Field of teaching, c) Whether or not they willingly study in their departments, d) The settlement variables they grow in?
4. Do pre-service teachers' levels of engagement differ significantly depending on their personality traits?

Method

The Model of the Research

Single and relational screening models have been utilized in this research. In relational screening models, the existence or degree of co-variation amongst variables is tried to be determined (Karasar, 2017). In this study, it was tried to be determined whether the engagement levels of the pre-

service teachers studying in the education faculty and those studying in different departments differ according to their personality traits.

Study Group

The study group of the research consists of 372 pre-service teachers studying in the 3rd and 4th grades of Trakya University Education Faculty teaching programs in the spring term of 2017-2018 academic year. 268 of the pre-service teachers are female (72%), 104 are male (28%), 214 are 3rd graders (57.5%), and 158 are 4th graders (42.5%). Distribution of pre-service teachers according to departments is as indicated in Table 2:

Table 2: Distribution of pre-service teachers by departments

Fields of Teaching	Total Number	Percentage
Pre-school teaching	100	26.9
English language teaching	92	24.7
Special Education	69	18.5
CEIT	47	12.6
Social studies teaching	35	9.4
Maths teaching	29	7.8
Total	372	100,0

It was tried to acquire the data which was obtained from the pre-service teachers from different teaching programs in order to show diversity. Pre-service teachers studying in 6 different teaching programs in table 2 are the working group of the research.

Data Collecting Tools

In the study, "class engagement scale" and "big five personality traits test" were used as data collection tools. Class engagement scale was developed by Eryilmaz (2014). During the development of the scale, data obtained from university students were used. As a result of the validity and reliability studies, "the general class engagement scale" consisting of three dimensions and 15 items was acquired. Eryilmaz (2004) defined these three dimensions as "behavioral", "cognitive" and "emotional" engagement. The use of similar sampling groups in the development process of the scale and in this research process and the fact that there are suggestions for class engagement in the measurement tool led to the preference of this measurement tool. The measurement tool was prepared in a 5-point Likert type which includes preferences from "not convenient at all" to "totally convenient". There are no negative items in the scale and a participant can get a total value between 15 and 75 points. A high score means that the engagement is good. In the analysis regarding the internal consistency made during the development of the scale; coefficients of .84 for emotional participation, .86 for behavioral participation, .84 for cognitive participation and .92 from the overall scale were reached. In this study, the coefficients related to the internal consistency coefficients of the data obtained from the sample are as indicated in table 3:

Table 3: Internal consistency coefficients obtained from the class engagement scale

Name of the factor	Internal consistency coefficient
Emotional Engagement	.844
Behavioral Engagement	.806
Cognitive Engagement	.878
Overall of the Scale	.901

Akbulut (2010) states that if the internal consistency value is .60 and above, it is accepted as a “highly reliable” internal consistency value. In this context, the internal consistency coefficients of the values measurement tool in table 3 could be interpreted as highly reliable in all sub-factors and overall scale. Confirmatory factor analysis (CFA) was performed for the construct validity of the scale after internal consistency values. AMOS 16.0 software was utilized for CFA. The data obtained from the analysis is as follows:

Table 4: Fit values of the class engagement scale regarding the construct validity

Examined Fit indices	Fit values	Threshold Values*	Description*
χ^2/d	3	≤ 3	Good Fit
RMSEA	.073	≤ 0.08	Good Fit
SRMR	.000	≤ 0.10	Good Fit
NFI	.908	≥ 0.90	Good Fit
CFI	.936	≥ 0.90	Good Fit
GFI	.915	≥ 0.85	Good Fit
AGFI	.883	≥ 0.80	Good Fit
AIC	327.004	< saturated model < independence model	High Value Good Fit
CAIC	489.327	< saturated model < independence model	Good Fit Good Fit

*Fit values were taken from Şimşek (2007).

As can be seen in table 4, it is seen that the examined fit indices are within the acceptable limits (excluding the AIC value). It could be interpreted that the data obtained in this context are in harmony with the existing structure and that the validity of the structure is ensured. Another data collection tool used in the research is the “Big Five Personality Test” that reveals the personality traits of the participants. This scale was developed by Benet-Martinez and John (1998) under the name of "The Big Five Inventory" and consists of 44 items. The five factors in the scale also correspond to personality traits. These personality traits were determined as "Extraversion", "Agreeableness", "Conscientiousness", "Neuroticism" and "Openness to experience". It was stated by Sümer, Lajunen & Özkan (2005) that the scale was adapted to Turkish by Sümer. Adaptation study was conducted within the scope of the Turkey section of a study on the identification of personality traits covering 56 countries (Schmitt, Allik, McCrae & Benet-Martinez, 2007). The internal consistency coefficients for extroversion, agreeableness, conscientiousness, neuroticism and openness to experience in the Turkey section of the scale have been determined as .77, .70, .78, .79 and .76 respectively. In this study, the internal consistency coefficients are as indicated in table 5:

Table 5: Internal consistency coefficients of personality scale on the basis of sub-factors

Name of the factor	Internal consistency coefficient
Extraversion	.848
Agreeableness	.760
Conscientiousness	.766
Neuroticism	.787
Openness to experience	.817

As can be seen in Table 5, it is seen that all of the internal consistency coefficients obtained as a result of the measurement are .70 and above. These values are interpreted as highly reliable internal consistency coefficients in the literature (Akbulut, 2010; Palland, 2002). After the internal consistency coefficients, CFA was performed for the construct validity of the scale. Results for this analysis are as indicated in Table 6:

Table 6: Data of fit values regarding the construct validity of the personality traits scale

Examined Fit indices	Fit values	Threshold Values*	Description*
χ^2/d	2,66	≤ 3	Good fit
RMSEA	.067	≤ 0.08	Good fit
SRMR	.000	≤ 0.10	Good fit
CFI	.729	≥ 0.90	Poor
GFI	.745	≥ 0.85	Poor
AGFI	.672	≥ 0.80	Poor
AIC	2576.10	< saturated model < independence model	High value Good fit
CAIC	3058.15	< saturated model < independence model	Good fit Good fit

*Fit values were taken from Şimşek (2007).

As can be seen in Table 6, it is seen that the values of χ^2/d , RMSEA and SRMR are within the expected limits. Especially, the fact that the χ^2/d ratio produces a good value for the model that is tried to be verified is important in terms of verifying the construct validity (Şimşek, 2007). The fitness of the specified values with the predicted structure was considered sufficient in terms of construct validity and was interpreted as being valid.

Collection and Analysis of Data

Data collection tools were applied to pre-service teachers as a whole in collecting data. Statistics package software was used in the analysis of data. In the direction of the research problems, the normality of the distributions was examined before proceeding with the analysis of the data, and in this context, it was observed that the skewness and kurtosis values and Kolmogorov-Smirnov values meet the normality criteria. Distortion and kurtosis values for the overall engagement and personality traits are as follows.

Table 7: Data on skewness and kurtosis values for sub-factors of class engagement scale and personality traits scale

Class	Personality traits					
	Engagement	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to experience
Skewness	-.283	-.409	-.666	-.189	-.058	-.282
Kurtosis	.769	-.541	.379	-.505	-.388	-.417

As seen in table 7, the data obtained from the measurement tools show that the skewness and kurtosis values take values between -1 and +1. These values could be interpreted as the data show normal distribution (Palland, 2002; Akbulut, 2010). Accordingly, parametric test statistics were used to analyze the data. In the analysis of the data, t-tests and ANOVA analyzes were used for sub-purposes and some interpretations were made accordingly. Scheffe test was not used in post-hoc monitoring analysis since variances showed equal distribution. Akbulut (2010) states that Scheffe test is the most serious analysis method in factor analysis.

Mean values and score ranges were used in the interpretation of pre-service teachers' level of engagement. The ranges of the scale could be interpreted as; 1.00 - 1.80 is very low level of engagement, 1.81 - 2.60 is low level of engagement, 2.61 - 3.40 is medium level of engagement, 3.41 - 4.20 is high level of engagement, and 4.21 - 5.00 is very high level of engagement. These scale ranges were taken into account in the interpretation of the data. In determining the personality traits of pre-service teachers, mean values were taken for each personality trait, and the trait that the student had a higher average was determined as the main personality trait. Although pre-service teachers have close mean values in terms of personality traits, it was tried to be defined in a personality trait by considering the highest average.

Results

In this section, findings and their interpretations from the measurement tool are covered. In the presentation of the findings, the ranking of the sub-problems was taken as the basis.

Sub-Problem 1: What is the level of pre-service teachers' class engagement?

When determining the engagement levels of pre-service teachers, a distinction was made according to the independent variables (gender, department, class, settlement of hometown etc.) in the data collection tool. In determining the levels, the ranges of scores specified in the data analysis were used. The data for this analysis are as shown in table 8.

Table 8: Pre-service teachers' level of engagement according to independent variables

	Variable	Mean Value	Standard deviation	Level
Gender	Female	3.43	.58	High
	Male	3.47	.70	High
Field of Teaching	Social Studies teaching	3.62	.58	High
	Maths teaching	3.54	.63	High
	English Language Teaching	3.56	.56	High
	CEIT	3.15	.68	Medium
Class	Pre-school teaching	3.42	.63	High
	Special education	3.38	.58	Medium
Whether or not they willingly study	3rd Grade	3.40	.65	Medium
	4th Grade	3.49	.57	High
Settlement of hometown	Yes	3.50	.60	High
	No	3.13	.60	Medium
Settlement of hometown	Village	3.25	.56	Medium
	Small Town	3.44	.71	High
	City	3.43	.55	High
Average	Metropol	3.53	.63	High
		3.44	.62	High

As can be seen in table 8, male and female pre-service teachers have close mean values in terms of engagement. When looking at the departments' averages, it could be said that pre-service teachers studying at the department of Computer Education and Instructional Technology (CEIT) and the Special Education department have lower engagement levels (medium level). On the other hand, it was determined that the pre-service teachers studying in the 3rd grade showed lower engagement than those who study in the 4th grade and the pre-school teachers who do not willingly study in their departments. It could be stated that the pre-service teachers, who have indicated their settlement of hometown as “village”, have a lower engagement compared to the pre-service teachers who were raised in other settlements. In general, when the engagement of the pre-service teachers in the class is examined, it is seen that there is a high level of engagement.

Sub-problem 2: Do the levels of pre-service teachers' engagement level vary according to their gender, class, field of teaching and whether or not they willingly study in their departments?

It has been observed that pre-service teachers' level of engagement in the class is high and whether this level differs according to some variables is examined in sub-problem 2. In tables 9 and 10, findings regarding whether pre-service teachers' level of engagement significantly varies according to gender, class, field of teaching and whether or not they willingly study in their departments are indicated.

Table 9: Data on whether or not the level of class engagement varies according to gender, class and if pre-service teachers willingly study in their departments

Variable		n	\bar{X}	Ss	Sd	t	P	Effect size
Gender	Female	268	3.43	.58	370	-.496	.620	--
	Male	104	3.47	.70				
Class	3rd Grade	214	3.40	.65	370	-1.39	.164	--
	4th Grade	158	3.49	.57				
Whether or not they willingly study	Yes	314	3.50	.60	370	4,22	.000	.046
	No	58	3.13	.60				

As seen in table 9, while there is no significant difference between the averages regarding the variables of "gender" and "class", it is seen that there is a significant difference between the mean values regarding the variable of "studying in the department willingly". When the effect size is examined, it is determined that the eta squared value is .046 and Akbulut (2010) states that the efficiency size between .01 and .06 have a small effect size. Before analysis, variance coexistence was examined.

Table 10: Data on whether the level of class engagement varies according to the field of teaching.

	Sum of Squares	Degree of Freedom	Mean Squares	F	Significance
Between group	6.99	5	1.399	3.751	.003
Within group	136.51	366	.373		
Total	143.51	371			

Table 10 shows that there is a significant difference ($p < .05$) between the engagement levels of the pre-service teachers studying in different fields of teaching. In this context, post-hoc analysis was conducted to determine which departments have the differences. Levene test was performed according to anava test results.

Table 11: Data on whether the level of class engagement varies according to the teaching field/Test of homogeneity of variances

Levene value	Degree of Freedom 1	Degree of Freedom 2	Significance
.600	5	366	.700

Significance and Levene values show that the condition of coexistence of variances is met in the distribution ($p < .05$). In the conducted analysis, it was observed that significant differences were observed against CEIT when the fields of CEIT, social studies and English language teaching were examined ($p < .05$). In other words, pre-service teachers studying in social studies and English language teaching programs significantly engaged in classes comparing to the pre-service teachers studying in CEIT program.

Sub-problem 3: Which personality traits do pre-service teachers have?

In the study, the answer to the question of which personality traits the pre-service teachers have, are tried to be given in detail by considering the characteristics determined as independent variables. Findings related to this are as indicated in table 12.

Table 12: Personality traits of pre-service teachers in the context of several variables

Variable		Openness to experience	Personal Traits				Total
			Extraversion	Neuroticism	Conscientiousness	Agreeableness	
Gender	Female	55	51	6	32	124	268
	Male	30	24	9	18	23	104
Field of teaching	Social Studies Teaching	14	4	1	8	8	35
	Maths Teaching	5	5	1	7	11	29
	English Language Teaching	19	17	5	12	39	92
	CEIT	9	12	1	8	17	47
	Pre-School Teaching	20	21	1	7	51	100
	Special Education	18	16	6	8	21	69
Settlement of hometown	Village	8	11	3	5	25	52
	Small Town	21	16	2	8	32	79
	City	27	23	6	18	46	120
	Metropol	29	25	4	19	44	121
Whether or not they willingly study	Yes	60	63	12	45	134	314
	No	25	12	3	5	13	58
Total		85	75	15	50	147	372

Considering the distribution of personality traits of pre-service teachers, it is seen that 147 of 372 pre-school teachers have “agreeableness” trait of personality. Then, personality traits are followed by openness to experience, extraversion and conscientiousness. While it was observed that approximately half of the female pre-service teachers (46%) had "agreeableness" trait of personality, the highest rate of male pre-service teachers was "open to experience" trait of personality with 29%. Considering the personality traits in terms of teaching fields, the highest rate of trait of personality is "openness to experience" with 40% for social studies teaching. "Agreeableness" is observed as 38% for mathematics teaching, 42% for English language teaching, 36% for CEIT, 51% for pre-school teaching, 30% for the special education. While approximately half of those who grew up in the village as a settlement have an "agreeableness" trait of personality, it has been revealed that the same personality trait is also seen to be predominant in other settlements. While 43% of those who willingly

study in their department have "agreeableness" trait of personality, this rate was observed as an "open to experience" trait of personality with 43% for those who do not willingly study in their department.

Sub-problem 4: Do pre-service teachers' levels of engagement in class vary according to their personality traits?

Finally, in the study process, whether the pre-service teachers' personality traits varied their level of engagement in the class was examined and the analysis related to this is given in table 13.

Table 13: Data on whether pre-service teachers' class engagement level vary according to their personality traits

	Sum of Squares	Degree of Freedom	Mean Squares	F	Significance
Between group	1.617	4	.404		
Within group	141.89	367	.387	1.046	.383
Total	143.51	371			

As seen in table 13, pre-service teachers' level of engagement did not differ significantly depending on their personality traits. For this reason, monitoring analyzes were not required. Since there was no significant difference according to Anova test results, Levene test was not performed.

Discussion, Conclusion and Recommendations

In this study, the relationship between pre-service teachers' level of engagement and personality traits was tried to be determined in the context of certain variables. As a result of the analysis, it was found that the pre-service teachers' level of engagement in the class was "medium" and "high". Considering the variable of "field of teaching", it was concluded that the level of the pre-service teachers studying in the department of Computer Education and Instructional Technologies (CEIT) and the department of Special Education is different from the pre-service teachers studying in other teaching areas and found to be "medium". It can be predicted that the CEIT department pre-service teachers' engagement level is lower than the other departments, because the courses of the department are computer and technology-based, thus the students experience a more individual, technology-supported class engagement process unlike other departments. The differences in the teacher training process in the CEIT department are included in the literature. In the research conducted by Odabaşı et. al., (2011), the field specificity in the teacher training courses for CEIT department was emphasized. Additionally, the fact that the CEIT department includes a technologically intensive program and that there is no other international example at the undergraduate level except Turkey are the facts that reveal its difference from other teaching fields (Saracaloğlu, Dursun & Arabacıoğlu, 2016).

The reason why the pre-service teachers who are educated in the special education programme is lower than the pre-service teachers studying in other departments may be due to the necessity of

giving individual education to the students who need special education. Pre-service teachers' learning specific techniques during the training process may cause them to differentiate with other departments. Therefore, it may be concluded that the level of engagement in the class differs from other departments. It is stated by Karasu, Aykut & Yılmaz (2014) that teacher training programs for special education should create an opportunity to conduct training in relation to individual characteristics.

In the research carried out by Gür Erdoğan and Aرسال (2015), it was found that the pre-service teachers who are educated in the special education department have the highest academic branch satisfaction, and the pre-service teachers who are educated in the CEIT department have both the lowest academic branch satisfaction and the desire to develop a career in the teaching profession. In the research carried out by Topal and Akgün (2015), the pre-service teachers' self-efficacy perceptions were determined for education-based internet use. According to the results of the research, the pre-service teachers' internet use self-efficacy perceptions scale scores are the highest in CEIT department while the pre-service teachers who are educated in special education department are the lowest. In the studies conducted according to the branch variables of the pre-service teachers in the literature, it is seen that the teacher candidates who are educated in the department of CEIT and Special Education have reached threshold values in different studies compared to the pre-service teachers who are educated in other departments. In this study, it could be said that the level of student engagement of these two departments being “medium” level, compared to the other departments, is parallel with the literature.

According to the results obtained in this study, it has been revealed that there is no change in the engagement status of the pre-service teachers according to the variable of "gender", and that the pre-service teachers who are trained in the 3rd grade engaged in the class at a medium level and the pre-service teachers in the 4th grade engaged in the class at a high level. In the study conducted by Karatekin, Merey and Keçe (2015), it was revealed that the attitude towards teaching profession is higher than the 4th grade pre-service teachers than 3rd graders. Considering that the attitude will positively affect the engagement, it could be said that the findings of the study conducted by Karatekin, Merey and Keçe (2015) correspond with the findings of this study.

Within the scope of the study, it was found that the pre-service teachers' willingly studying in their departments will positively affect their engagement in class. As a result of the studies conducted in the literature, it has been proved that the pre-service teachers' attitudes towards their professions have a positive effect in favor of their willingly studying in their department. (Aksoy, 2010; Eret-Orhan & Ok, 2014; Karatekin, Merey & Keçe, 2015; Tüfekçi & Kocabatmaz, 2015). If the pre-service teachers' preferences of their departments affect their attitudes positively, it can be thought that it will affect a feature that is directly related to the affective characteristics of the individual, such as engaging in the class, so that the findings obtained in the research is supported by the literature.

As a result of the determination of the level of class engagement of the pre-service teachers according to the settlements they grew up, it has been concluded that the pre-service teachers living in the village have lower level of class engagement than pre-service teachers who grew up in other settlements. In the study conducted by Akkaya (2009), the finding that pre-service teachers living in the village have lower attitudes and averages towards the profession compared to pre-service teacher living in other settlements is in line with the finding of this research. In a study conducted by Deniz (2003), it was concluded that students living in the city had higher written expression skills than students living in the village. Based on the findings of the study conducted by Deniz (2003), it could be interpreted that individuals living in the city have higher self-confidence due to their ability to express themselves. The finding of lower engagement of pre-service teachers living in the village obtained in this research could be interpreted similarly.

In addition, the personality traits of pre-service teachers were examined by considering the five-factor personality traits scale. In this context, it was observed that pre-service teachers had the most “agreeableness” trait of personality and the lowest rate as “Neuroticism” trait of personality. These findings correspond with the findings of the study conducted by Kesen (2014) that the pre-service teachers have the most “agreeableness” personality traits and the lowest rate as the “Neuroticism” trait of personality. In the study conducted by Aslan and Yalçın (2013), the finding that pre-service teachers have adopted the “agreeableness” personality trait at the highest level, supports the findings obtained in this research and in the study conducted by Kesen (2014).

In this study, it has been concluded that the majority of female pre-service teachers adopt the "agreeableness" trait of personality and the majority of male pre-service teachers adopt the "extroversion" trait of personality. The responsibilities and roles imposed on females and males in Turkish society may have caused such a personality development in individuals. Because in Turkish society, females are in the position of being accused if they do not exactly comply with the norms of society, and males are in a position to be encouraged in many issues (Atabek, 2002). In addition, in the study conducted by Kaya (2017), it was concluded that the “neuroticism” and “openness to experience” personality traits of female pre-service teacher were higher than that of male pre-service teachers. In the research, it was concluded that the pre-service teachers who were educated in the social studies teaching department preferred “openness to experience” trait of personality the most and the pre-service teachers who studied in the other departments preferred the “agreeableness” trait of personality the most. It does not show any change in the order of pre-service teachers' preferences of personality traits according to the settlement they grew in. It was seen that pre-service teachers who willingly study in their departments prefer the personal trait of “agreeableness”, and pre-service teachers who do not willingly study in their departments prefer “openness to experience” the most.

One of the findings of this study is that pre-service teachers' level of engagement in class did not differ significantly according to their personality traits. As a result of the research, it has been concluded that the pre-service teachers' engagement was generally at high level and the pre-service teachers intensely adopt the personality trait of “agreeableness”. “Agreeableness” trait of personality has symptoms such as the tendency to be tolerant, warm-blooded, polite, calm, accommodating and cooperative (Graziano & Tobin, 2009).

One of the findings of this study is that pre-service teachers' level of engagement in class did not differ significantly according to their personality traits. As a result of the research, it has been concluded that the pre-service teachers' engagement was generally at high level and the pre-service teachers' intensely adopt the personality trait of “agreeableness”. “Agreeableness” trait of personality has symptoms such as the tendency to be tolerant, warm-blooded, polite, calm, accommodating and cooperative (Graziano & Tobin, 2009). These features are very important for class engagement. It could be said that the high level of pre-service teachers' engagement in class is related to their adoption of the "agreeableness" personality trait more than the other personality traits.

Based on the findings of this study, it could be investigated why the pre-service teachers prefer this “agreeableness” personality trait and whether this is a common trait of the people who choose this profession. It could be explored why the “Neuroticism” personality trait is less preferred by pre-service teachers and what could be done to improve this personality trait. The curriculum of the CEIT and special education course programs that differ from other departments could be examined. In addition, the profiles of pre-service teachers who choose CEIT and special education departments could be ascertained. It could also be investigated why females’ “agreeableness” personality traits are higher than males’.

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