

Analysis of Emphatic Thinking Tendency and Critical Thinking Disposition of Philosophy Teacher Candidates According to a Number of Variables

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Abstract

In this study, the empathetic thinking tendency and critical thinking disposition of teacher candidates studying at the department of philosophy teaching is analysed according to a number of variables. The study was carried out using "Empathetic Tendency Scale" and "California Critical Thinking Disposition Inventory" and in the frame of its screening model, students of the department of philosophy teaching of Gazi University in their 1st and 5th years constituted the sampling group. SPSS-17 package software was used to analyse the data and the findings regarding Pearson Moment Correlation Coefficient test, independent t test, Kruskal Wallis H test, and Mann Whintey U test, where relevant, have been shared. According to the results of the study, no difference has been identified between the empathetic tendency and grade of teacher candidates and the family income; however, there is a significant difference in the relationship between their sex and their self-perception/assessment in terms of social relationships. Similarly, there is no difference between the critical thinking disposition of teacher candidates and their sex, grade and social relationships, yet there is a significant difference in terms of family income.

Keywords

Teaching of philosophy, empathetic thinking, critical thinking, philosophy teacher candidate

Introduction

One of the most important skills teacher candidates must have is to raise generations who are able to understand and make sense of what is happening around them. It could be asserted that empathetic thinking and critical thinking are important factors affecting one's understanding and interpretation. Specific characteristics of philosophical thinking such as philosophical view, philosophical inquiry, philosophical attitudes, philosophical approaches and so on are different appearances of the effort to understand and interpret.

Empathy is a concept that emerged thanks to Carl Rogers and his work on the subject. Empathy means "putting oneself in someone else's shoes and understanding his feelings and thoughts correctly" (Dökmen, 2009, p. 157). In other words, empathy is to wander the world in others' shoes (Gavin, 2000, p. 105). These two seemingly simple definitions also harbor many complex theoretical elements. Rogers, having laid the foundation of this concept, defines empathy as the process in which a person puts himself in another person's place and perceives the happenings from that person's perspective, understands and feels his thoughts and feelings respectively in a correct way, and communicates this process to that person (Ekinçi, 2009, p. 16). From this perspective, it can be said that "understanding" is the basic mental action for empathy. According to White (1997) such a mental action comprises four stages. The first one is to have an inclination to understand the feelings and thoughts of the other person, the second is to establish communication so as to understand his feelings and thoughts, the third one is to understand his feelings and thoughts, and the fourth one is to provide verbal feedback of this understanding.

Empathetic thinking provide people with a number of advantages. These can be listed as follows (Pala, 2008, p. 14):

- Empathy is an important skill for cognitive and moral development, as well as psychological health.
- Empathy is the expression of the relationship and openness among people.
- Empathy helps relationships, and communication increase and conflicts to be solved.
- Empathy increases the chances to be successful in personal and professional life.

Communication is the process of transmitting information from a sender to a receiver in an environment where the information is understood both by the sender and the receiver. Sharing of information, relationships and communication are subject to change. This change affects the trust, respect, empathy and tolerance within the group in a positive way. At the same time, it makes it easier for a person to make himself understood by other people as well as his tendency to understand others (Hammond, 2006, p. 2). Therefore, it should be recognized that empathetic thinking evolves in an environment of interpersonal communication. Another important determining factor of interpersonal environments is communication. Communication is the mutual transmission and reception of the message to be given. After this point, the interpersonal environment focuses on the message. Message is sometimes shaped based on knowledge, ideas, values, attitudes, perspectives, reviews, comments, beliefs, and so on. Then the person makes sense

of such message through critical thinking. There has been no common definition of critical thinking. The reasons for this are; the problematic of trying to define the concept of thinking from ancient Greece to the present; perception of the concept of critical as a negative thinking process, and researchers' tendency to take various disciplines (such as philosophy, psychology, education, etc.) as a basis when trying to define critical thinking (Demir, Bacanlı, Tarhan & Dombayci, 2012, p. 547).

Critical thinking should not be confused with the concept of intelligence. Emphasising on this point, Walsh and Poulin (1988) considered critical thinking as a skills that can be developed. Ennis (1985), on the other hand, dealing more with the teaching dimension of critical thinking and drew attention to the act of reasonable and contemplative thinking in decisions regarding what the individual does or believes. Rudinov and Bary (2004, p. 9-32), who consider critical thinking as a process in which the individual performs a complex mental activity, dealt with this process as a form of objective reasoning. Haskins (2006, 2-3) focused on the difference of critical thinking from other ways of thinking. Accordingly, critical thinking is a higher level of thinking when compared to logical thinking and analytical thinking. That includes being rational and objective. There is an important distinction here. Although, logic and analysis fall within the scope of psychology and sociology, they are indeed the basic concepts of philosophy and mathematics. In this context, Haskins (2006, 2) lists the characteristics of an individual who performs critical thinking as follows:

Step 1: Adopt the attitude of a critical thinker

Step 2: Recognize and avoid critical thinking hindrances

Step 3: Identify and characterize arguments

Step 4: Evaluate information sources

Step 5: Evaluate arguments.

Lipman (2006, p. 212), known for his work on Philosophy for Children and has a number of studies to teach philosophical thinking to students discusses critical thinking in a philosophical context. Accordingly, critical thinking (1) facilitates judgment because it (2) relies on criteria, (3) is self-corrective, and (4) is sensitive to context. The importance of these features in relation to teaching of philosophy is not disputable. The main features of philosophical thinking such as standard criteria, consistency, validity, judgment and assessment essentially involve a similar process to critical thinking,

In recent years, the concepts of empathy and critical thinking has been the subject of much research. Healthy interpersonal communication is closely related with the realization of these two concepts. It is evident that a person with empathetic and critical thinking skills is more advantageous than those who lack such skills. Both of these are skills that could be improved through training. However, first of all educators who will help individuals develop these traits should possess these skills. Especially it is a must for philosophy teacher candidates to be equipped with these skills as their focal point is thinking and questioning in terms of teaching of philosophy. In order to improve philosophy teacher candidates' skills related to empathetic and critical thinking, first of all this tendency and disposition must be identified. This in turn will constitute a sound basis for the recommendations later on and will shed light on the training to be provided.

The variables affecting the study of empathetic and critical thinking in general could be listed as sex, family income, grade level and social relations. These variables are considered to be important for both critical and empathetic thinking. Sex, which is a critical variable in many studies, also plays an important role in critical and empathetic thinking. Structural differences between men and women

are extremely effective on the act of thinking. The family income which is also reflected in Maslow's hierarchy of needs is closely related to a person's feeling safe and secure. Whether the basic needs are met or not is extremely effective on the training provided. On the other hand, the grade gives an idea as to whether a longitudinal development has emerged and to what extent this training influence philosophy teacher candidates. Social relationships that individuals develop when they enter the university and in later years is usually associated with the college life, its content and environment. In this regard, the influence of the education, content and level on the course of these relationships should be analysed.

In some international studies, the impact of both sexes on the tendency to think was examined and different conclusions have been reached. Garaigordobil, owner of such a study (2009), stressed that the relationship between sex differences and social, emotional variables and empathy is higher in women. Arnocky and Strom Link (2010), on the other hand, in their study analysing the relationship between the impact of sex differences on environmental interests and behaviour and empathy, found out that similarly women have a higher emotional empathy potential when compared to men. Ouzo and Nakakis (2012), set out to make research to explore the variables that influence the empathetic thinking skills of nursing students and in that study also women were found to have higher levels of empathy than men. Similarly, Hasan and others (2013), in a study conducted among medical students in Kuwait University, concluded that female students have higher levels of empathy. Accordingly, it can be said that studies indicating that women are more inclined to empathetic thinking are more in number. When we look at the relationship between sex and critical thinking; King, Wood and Mines (1990), found out in their work "Critical thinking among college and graduate students" that men's critical thinking skills were higher than those of women, while Babalhavaej and Ghia (2011), concluded the opposite in their study called 'Critical Thinking, Sex and Education: LIS Research Articles 1997-2007 Analysis'. However, Chen (1996), conducting a study on the critical thinking skills of adult students, found a difference between the fact that men are more successful than women and the relationship between sex and critical thinking. That is, men's critical thinking skills are higher than women. Although some research yield different results, men seem to be more skilled in critical thinking than women.

When studies on the relationship between family income and empathetic thinking, in their study Hasan et al (2013) found out that individuals who have low family income tend to have lower levels of empathy.

There are many studies on empathetic and critical thinking in terms of grade level variables. Among these studies, Garaigordobil (2009) dealt with the relationship between empathetic thinking and grade level and analysed the empathy capacity of children between the ages 10 to 14. His study indicated that there was no increase in their capacity for empathy between these ages. On the other hand, Hasan et al (2013), Kuwait University, found out in their research assessing the level of empathy among medical students, that there is an increase in their level of empathy at the end of a four-year academy.

When studies indicating the relationship between critical thinking and grade levels are examined; King, Wood and Mines (1990) established that a substantial change could be observed in the perspective on critical thinking of college students and graduate students. In other words, there is a difference between levels of critical thinking with regard to the grade of the student. In this study, the ability to think critically about structured problems, either well or badly designed, increased with the grade.

When the bulk of research on whether empathetic and critical thinking have any impact on social relationships is considered, in his study Garaigordobil (2009) established that compared to men, women of all ages have significantly higher ratings of the skills needed for the cognitive analysis of prosocial behavior and negative emotions, and found a positive relationship between empathy and prosocial behavior. However, Kouroshni and Latifiye (2012) conducted a research on the relationship between the mediation dimension of the communication patterns of parents and teachers, cultural values, and students' critical thinking disposition. In conclusion, when students' critical thinking disposition is compared with family communication patterns and teacher communication patterns, family communication proved to be more influential on critical thinking. It was also concluded students with high critical thinking skills are self-confident.

When these variables are considered in terms of educational content, it is anticipated that there is no difference among philosophy teacher candidates according to sex, and that they have rather high levels of empathetic and critical thinking. It is also expected that the higher the grades of philosophy teacher candidates having studied for a total of 5 years, the greater capacity they will have for empathetic and critical thinking, and their education will contribute to these skills. In a sense these expectations will give an idea about the quality of education. Similarly, where philosophy teacher candidates position themselves socially is closely related to their critical and empathetic thinking skills. Social relationships in a way contribute to the development of self-confidence. It is evident that philosophy teacher candidates with a powerful set of social relations tend to be more inquisitive. The high tendency of teacher candidates who also have a potential to increase such a tendency among their students is directly proportional to the strength of social relationships. The main determinant of teacher candidates' socio-economic status is family income. The common outcome of the studies on this subject shows that the higher the family income, the greater tendency for empathetic and the greater disposition for critical thinking.

When empathetic thinking tendency and critical thinking disposition is considered together with the variables above, it can be stated that the purpose of this research is to analyse the empathetic thinking tendencies and critical thinking dispositions of teacher candidates based on a number of variables. It is a crucial question to what extent the improvement in the skills of philosophy teacher candidates whose focus of education is thinking and inquiry is related to their education.

In line with this overall aim, answers to the following questions are sought for;

1. Is there a significant relationship between the empathic tendency and critical thinking disposition levels of philosophy teacher candidates?
2. Is there a significant relationship between the empathic tendency and critical thinking disposition levels of philosophy teacher candidates based on their sex?
3. Is there a significant relationship between the empathic tendency and critical thinking disposition levels of philosophy teacher candidates based on their grade?
4. Is there a significant relationship between the empathic tendency and critical thinking disposition levels of philosophy teacher candidates based on their household income?
5. Is there a significant relationship between the empathic tendency and critical thinking disposition levels of philosophy teacher candidates based on their social relationships?

Methodology

In this study, a correlation model of descriptive survey method was used. Research was conducted through a study group. The group comprised the first-grade and fifth grade students attending Philosophy and Related Science Education Department of Gazi University in the 2012- 2013 fall semester. The purpose of such a group is to determine whether empathetic thinking tendency and critical thinking disposition depends on the level of education and other variables. The grades and sex distribution of the teacher candidates are presented in Table 1.

Table 1: Distribution of Teacher Candidates According to their Grades and Sex

Grade	Sex		Total
	Female (<i>n</i>)	Male (<i>n</i>)	
1st grade	13	17	30
5th grade	35	25	50

As it can be seen in Table 1, the study was carried out with 80 students of which 30 were from grade 1 and 50 from grade 1.

Data Collection Instruments

Empathic Tendency Scale (ETS): This scale was developed by Dökmen (1988) in order to measure the emotional components of empathy and individuals' potential to develop empathy. It is a 5 point Likert-type scale, and comprises 20 items. There are 5 types of answers as "totally disagree" "disagree", "not certain", "agree", and "totally agree". "Each option is of value from 1 to 5. A favorable sentence for empathy ranks from 5-1. For a negative sentence of empathy scores are reverse-coded and ranks from 1-5 "(Pala, 2008, p. 17). Eight items of the Empathic Tendency Scale consist of negative sentences to counterbalance the subjects' tendency to mark "yes". "The minimum score of the scale is 20, while the maximum is 100. The total score represents the subjects' empathetic tendencies. Higher scores indicate a high level of empathetic tendencies, while low scores demonstrate low empathetic tendency "(Ekinci, 2009, p. 47).

The reliability study for the Empathic Tendency Scale was developed by Dökmen (1988) and the draft scale was administered to a group 70 university students twice with an interval of three weeks. A correlation was found between the scores obtained from both tests, the retest reliability coefficient was .82, and the correlation between the scores obtained from the odd and even numbered items of the scale was found to be .68. The validity study of the Empathic Tendency Scale validity was also carried out by Dökmen in 1988. "It was found that in the group of 24 subjects, the validity of similar scales was .68 regarding the scores they obtained from the ETS and from the 'Understanding Emotions' section of Edwards Personal Preference Inventory. For the research group of the scale, the reliability coefficient, calculated by Cronbach's Alpha, was found as .72" (Genç and Kalafat, 2008, p. 215).

California Critical Thinking Disposition Inventory (CCTDI): California Critical Thinking Disposition Inventory (CCTDI) is the outcome of the Delphi Project organised by the American Philosophical Association in 1990. "The scale has 7 sub-scales and 75 articles which were theoretically identified and went through psychometric testing" (Kökdemir, 2003, p. 68).

The adaptation study of this scale was conducted by Kökdemir (2003) and it was administered to 913 students aged between 17 and 28 studying at Başkent University, Faculty of Economics and Business Administration. As a result of Kökdemir's (2003) adaptation, the scale was redesigned to 6 factors and 51 items. According to Kökdemir (2003), when the factors comprising the redesigned CCTDI with a total of 51 items and their structure are analysed, it is clear that they are not much different from those of the original scale. However, it was observed that some articles shifted from one factor to another one and two of the factors (open-mindedness and maturity) were combined (Aybek, 2006, p. 104).

The internal consistency coefficient (Alpha) of the scale was found to be .88 while the internal coefficient (Alpha) of the sub dimensions of the new scale developed as Likert type 6 with a total of 6 dimensions and 51 items range between .61 and .78. The total variance of the scale was calculated to be 36.13% (Kökdemir, 2003, p. 82). As for the adapted scale to Turkish the respective subscales are; Being Analytical subscale $\alpha = .75$, Open Mindedness subscale $\alpha = .75$, Curiosity subscale $\alpha = .78$, Self-confidence subscale $\alpha = .77$, Searching for the Truth subscale $\alpha = .61$ for the subscales, and Being Systematic subscale $\alpha = .63$.

Data Analysis

Descriptive statistics were used to analyse the data. The data of the study group are sorted out based on sex, grade level, household income and social relationship status. A distribution availability test was conducted prior to the testing a set of data for normal distribution. The relationship between empathetic thinking tendency and critical thinking disposition was examined using Pearson Product Moment Correlation Analysis. In the absence of normal distribution, and in cases where there are more than two variables, the Kruskal-Wallis H test was used for comparison. If the Kruskal-Wallis H test yields different data Mann Whintey tests were employed. Independent Samples t-test was used to determine whether there is significant difference according to the sex or grade of teacher candidates. In all tests the level of significance was determined as 0.05.

Findings

In this section, the findings obtained as a result of the analysis of research data are given. Research findings consist of the findings obtained from the personal information form developed for research based on Empathy Thinking Tendency and California Critical Thinking Disposition I. The findings corresponding the sub-problems in the frame of the main problematic of the research are discussed below.

Comparison of Philosophy Teacher Candidates' Empathic Thinking Tendency and Critical Thinking Disposition

The relationship between the empathetic thinking tendency and critical thinking disposition levels of philosophy teacher candidates is compared below based on Pearson Product Moment Correlation Analysis. The Pearson Product-Moment correlation coefficient results obtained from the relationship between the empathetic and critical thinking tendency of philosophy teacher candidates are presented in Table 2.

Table 2: Comparison of the Relationship between the Empathic Thinking Tendency and Critical Thinking Disposition Levels of Philosophy Teacher Candidates by Pearson Product Moment Correlation Analysis

A.	B.		C.	Empathic Thinking Tendency	D.	Critical Thinking Disposition	
E.	Empathic Tendency	Thinking	F.	G.	—	H.	.313**
I.			J.	<i>n</i>	K.	80	L.
M.	Critical Thinking Disposition		N.		O.		Q.
					P.	.313**	R.
S.			T.	<i>n</i>	U.	80	V.

** P < 0.01

As a result of the analysis, a positive and close to moderately low ($r = 0.313$) relationship was found between the two variables. Statistically, this relationship at the level of 0.01 is significant. It could be said that when empathetic tendency of teacher candidates increase, their critical thinking disposition also increases to a certain level, or similarly, when their critical thinking disposition decreases, a decline is also observed in their empathetic thinking tendency.

Sex-based Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Philosophy Teacher Candidates

Independent samples t-Test was used to determine whether there is a significant difference in the empathy thinking tendency and critical thinking disposition level of teacher candidates based on their sex. Before applying the independent samples t-test various assumptions, such as whether there is a normal distribution of the analysis and the number of samples in each group, were examined. The findings obtained as a result of the analysis are given in Table 3 below.

Table 3: Sex-based Comparison of Empathic Thinking Tendency and Critical Thinking Dispositions Levels of Philosophy Teacher Candidates using Independent Samples t-Test

Variable	Sex	<i>n</i>	\bar{X}	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Empathic Thinking Tendency	Female	52	70,19	7,71	78	2,484	,015
	Male	28	65,82	7,11			
Critical Thinking Disposition	Female	52	214,90	17,04	78	1,159	,250
	Male	28	209,71	22,48			

As shown in Table 3, there is a significant difference in the empathetic tendency of teacher candidates based on their sex [$t_{(78)} = 2,484$, $p < .05$], while there is no significant difference in their critical thinking disposition levels [$t_{(78)} = 1,159$, $p > .05$].

When the average scores of the empathetic thinking tendency level of teacher candidates is examined based on sex, it can be observed that for female candidates the average is 70.19, while the average for male candidates is 65.82. Accordingly, although empathetic thinking tendency level of female teachers is higher than male teachers, it can be said that empathetic thinking tendency level of both sexes is close to medium-good based on the five-point Likert scale. This shows that the empathetic thinking tendency level of teacher candidates in the philosophy teaching department is affected by sex.

As for the critical thinking disposition level, the average score for female teacher candidates is 214.90, while it is 209.71 is for male candidates. It can be said that the average scores are quite close. It can also be concluded that teacher candidates have similar levels of critical thinking disposition and they are not affected by their sex. When the average scores are considered for both groups, it can be said that they are moderate.

Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Philosophy Teacher Candidates Based on Their Grades

Independent samples t-test was applied to determine whether empathetic and critical thinking disposition of teacher candidates' show any significant difference according to their grade. The results of the independent samples t-test concerning the empathetic thinking disposition of philosophy teacher candidates according to their grade is presented in Table 5, while the results of the independent samples t-test regarding their critical thinking disposition are presented in Table 6.

Table 4: Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Teacher Candidates based on their Grade using Independent Samples t-Test

Variable	Grade	<i>n</i>	\bar{X}	<i>SD</i>	<i>df</i>	<i>t</i>	<i>p</i>
Empathic Thinking Tendency	1	52	68,30	9,22	78	-,322	,748
	5	28	68,88	6,80			
Critical Thinking Disposition	1	30	215,90	21,62	78	1,018	,312
	5	50	211,40	17,50			

As seen in Table 4 empathetic thinking tendency of teacher candidates do not differ significantly according to the grade. [$t_{(78)} = -, 322$, $p > .05$]. While the average score for the empathetic thinking tendency of grade 1 teachers is 68.30, the average score for grade 5 teachers is 68.88. This indicates that their grades has an impact on their level of empathetic thinking tendency. On the other hand, when the level of teacher candidates' critical thinking disposition is examined, there is no statistically significant difference [$t_{(78)} = 1.018$, $p > .05$] in their disposition according to their grades. Here, the results are rather surprising in that the level of critical thinking disposition of the fifth grade teachers were expected to be higher than that of the first grade teachers, but it is noteworthy

that they were relatively lower. For both grades the level of critical thinking disposition was found to be in the middle, which is below expectations.

Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Philosophy Teacher Candidates based on their Monthly Household Income

Kruskal Wallis H Test was used to determine whether there is a significant difference between the philosophy teacher candidates' empathy thinking tendency and critical thinking dispositions levels based on their monthly household income. Since the analysis results comprise at least 3 groups and the sample size is $N < 19$ and normal distribution does not apply Kruskal Wallis H Test was preferred. The analysis results are given in Table 5 and Table 6.

Table 5: Kruskal Wallis H Test Results of the Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Teacher Candidates based on their Monthly Household Income

Variable	Household Income	<i>n</i>	Mean Rank	df	χ^2	p	Significant Difference
Empathic Thinking Tendency	700 TL- 999 TL	17	33,76	3	6,769	,080	
	1000 TL- 1499TL	33	43,12				
	1500 TL- 1999 TL	16	32,69				
	2000TL and over	14	51,43				
Critical Thinking Disposition	700 TL- 999 TL	17	29,24	3	7,853	,049	1-2
	1000 TL- 1499TL	33	41,61				1-4
	1500 TL- 1999 TL	16	39,66				
	2000TL and over	14	52,54				

The results show no statistically significant difference between the empathy tendency of teacher candidates participating in the study and their household income [$\chi^2 (3) = 6.769$ $p > 0.05$]. However, when we look at the average scores of teacher candidates, we can say that those whose household income is more than 2000 have relatively higher tendency. It can be said that empathetic tendency of teacher candidates is not affected by their household income.

On the other hand, when the teacher candidates' critical thinking disposition is compared with their household income, no statistically significant difference was detected [$\chi^2 (3) = 7.853$, $p < .05$]. When we look at the average scores of teacher candidates, it is possible to say that those whose household income is more than 2000 TL have relatively higher disposition than others on average. Mann-Whitney U test was used to determine where this difference comes from. As a result, there is significant difference between the levels of critical thinking disposition of those who have an

average household income of 700 TL-999 and those who have -1000 – 1499 TL and more than 2000TL.

Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Teacher Candidates based on their Perception of their Social Relationships

Due to the reasons mentioned before, Kruskal-Wallis H Test was used to determine whether there is any significant difference between the empathetic thinking tendencies of philosophy teacher candidates in relation with their social relationships. The results of the Kruskal-Wallis H Test on whether there is any significant difference between the empathetic thinking tendencies of philosophy teacher candidates in relation with their social relationships is presented below in Table 6.

Table 6: Kruskal Wallis H Test Results of the Comparison of Empathic Thinking Tendency and Critical Thinking Disposition Levels of Teacher Candidates based on their Perception of their Social Relationships

Variable	Social Relationship	n	Mean Rank	df	χ^2	p	Significant Difference
Empathic Thinking Tendency	I am too timid and I am not successful	8	17,50	3	14,89	,002	1-2
	I don't think I am active and successful	10	38,75				1-4
	I do not have a clear opinion, I don't know	19	33,11				3-4
	I think I am active and successful	43	48,45				
Critical Thinking Disposition	I am too timid and I am not successful	8	39,94	3	4,543	,209	
	I don't think I am active and successful	10	35,55				
	I do not have a clear opinion, I don't know	19	32,50				
	I think I am active and successful	43	45,29				

When Table 6 is analysed, while there is no statistically significant difference in terms of the critical thinking disposition of teacher candidates [$\chi^2 (3) = 14.89, p < .05$], there is a statistically significant difference in their empathetic thinking tendency. In this case, we can say that teachers' perceptions of their social relations does not affect the level of critical thinking disposition, whereas their level of empathetic tendency is affected statistically. Mann-Whitney U test was utilised to determine

whether the teacher candidates' empathetic level shows a significant difference according to the groups.

It has also been detected that teacher candidates who define their social relationships as active and successful have significantly different results when compared with those who does not have a clear opinion or who do not find themselves active or successful. At the same time the empathetic thinking tendency of these candidates seems to be higher. Moreover, the empathetic thinking tendency levels of those who do not consider themselves as active and successful and who rather say that they are too timid and not successful show significant differences.

Discussion and Conclusion

As empathetic people can put themselves in the shoes of other people, they are expected to evaluate events objectively. Empathic thinking and critical thinking are kinds of thinking. Therefore, it is expected that these two modes of thinking interact with each other. When it is considered that critical thinking is rather cognitive, while empathetic thinking is mostly related to the affective sphere, it is important for the individual to develop in both in a balanced manner. As a result of this study, this expectation is somehow met to a certain extent and within the relationship between empathy and critical thinking, there is a positive moderate correlation with ($r = 0.313$). It shows that as the empathetic thinking tendency of teachers increase, their critical thinking disposition also goes up and similarly when there is a decline in their critical thinking disposition, their empathetic thinking tendency also decreases.

In general, the results of this research are consistent with the results mentioned in the research based international literature. However, given that critical thinking and empathetic thinking are in a way sociological, anthropological and cultural ways of thinking, the importance of local research gain importance. In this sense, the research findings are consistent with the findings of Ekinci's (2009) study. In his study, Ekinci (2009) found significant positive correlation between the two variables.

In terms of the variable of sex, when empathetic thinking tendency of philosophy teachers are considered a significant difference in favor of women becomes apparent. These results are similar to the results of the studies of Ekinci (2009), Atli (2008) and Rehber and Atıcı (2009). Ekinci (2009) also found a significant difference in favor of women in his study analysing the empathetic and critical thinking disposition of teacher candidates. Atli (2008), on the other hand, examined the empathetic thinking tendencies of employees working in kindergartens and orphanages depending on a number of variables and established that the female staff's empathetic thinking tendency is higher than those of male staff. Rehber and Atıcı (2009) also produced similar results their study examining the conflict solving behaviors of second grade primary school students' and their empathetic tendencies, and concluded that empathetic level of women is higher than that of men. On the other hand, Pala (2008) did not find any significant difference between the empathetic thinking tendency of male and female students in his study focusing on the level of empathy among teacher candidates. In addition, Genç and Kalafat (2008), studied the democratic attitude and empathetic skills of teachers' candidates and their study did not yield any difference between the empathetic abilities of women and men. In his research on the existence of a relationship between the level of empathetic skills and masculinity or femininity, Atilla (2007) concluded that there is not significant relationship between the masculinity or femininity score and empathetic ability. It could be concluded that in this study the difference the empathetic thinking tendency of philosophy teacher candidates in favor of women might be the result of the fact that female students are more emotional

and are raised as more fragile beings than male students. But still, it is not possible to generalize this idea.

Another result of the study is that critical thinking disposition of philosophy teacher candidates does not differ from one another based on sex. This is an expected outcome for philosophy teacher candidates because their department focuses on thinking and seeing that there is no difference in terms of their critical thinking disposition, we can say that their education appeals to both sexes equally. However, there are mainly two groups of findings of the studies focusing on the teachers' and teacher candidates' views on critical thinking in terms of sex. In their research, Özdemir (2005) and Ekinçi (2009) stated that there is no variable that leads to a significant difference in critical thinking disposition based on sex. Zayıf (2008) and Cetinkaya (2011), on the other hand, concluded that there is a significant difference in critical thinking disposition in terms of sex and stated that women expressed a more positive opinion than men. These differences can be attributed to the differences in research patterns.

In the analysis results concerning whether there is significant difference among philosophy teacher candidates' empathetic tendencies according to grade, no correlation was established between the grades and their empathetic tendency. This result is consistent with the findings of Atli (2008) Çelik and Çağdaş (2010). However, the results of the study by Ekinçi (2009) and Mete and Gerçek (2005) are different from these findings. Ekinçi (2009) found that teacher candidates from the 4th grade have a higher empathetic tendency than the 1st grade students. Mete and Gerçek (2005) examined the empathetic thinking tendency and skills of nursing students and concluded that the higher their grade, the higher scores for empathetic skills. The content and the methodology of philosophy teaching might be the reason why no such difference is observed in philosophy teacher candidates.

Similarly, no significant difference was found between the grades and critical thinking disposition of philosophy teacher candidates. In Ekinçi's (2009) study, an increase in the level of critical thinking disposition was observed as the grade gets higher, however, no difference was detected between the two variables. However, Gülveren (2007), in his research on prospective teachers, concluded that the grade of students does not have any impact on their critical thinking disposition. Under normal conditions, it might be expected that the higher the grade is, the higher empathy and critical thinking disposition gets. However this is not the case for philosophy teacher candidates and this could be explained by the fact that there are not any subjects in their education to increase their tendency and disposition towards empathy and critical thinking.

In the study, there was no significant difference between the empathetic thinking disposition of philosophy teacher candidates and their household income. In contrast, in his research Pala (2008) found that there is significant difference between the students' economic status and their ability to empathise, he even concluded that students with best economic conditions has the highest capacity for empathy, while impoverished students have the lowest empathy skills. This situation can be interpreted as such; those who have less economic suffering can understand others more easily and they can spend time with them. Ekinçi (2009) also obtained similar results in his study. In this study, students who qualify as high socio-economic level have higher empathy skills than others. Brown, Sauthier and Litvay (2007), in their study, found that students with better economic situation have higher levels of empathy "(Pala, 2008, p. 21). In this research, the fact that there is no significant difference between household income and empathetic thinking tendency might mean that the lack of empathy tend to think of philosophy teachers in the group's financial situation may mean that financial situation does not have an impact on the empathetic thinking tendency of philosophy teacher candidates.

In the study, there is significant difference between the critical thinking disposition of philosophy teacher candidates and their household income. This result is consistent with the results of other research. Indeed, in his research called "Levels of Critical Thinking and Factors Affecting Critical Thinking among Prospective Nurses", Öztürk (2006) found that the higher economic status students have, the higher disposition for critical thinking they develop. As Ekinci (2009) quotes, the study of Cheung et al (2001) also reached a similar conclusion. In the research they conducted in the University of Hong Kong with 557 students, they established that students with high and medium income families have significantly higher levels of critical thinking tendency than students from low-income families.

Another result that was obtained from the working group was that social relations of philosophy teacher candidates have a number of different effects on increasing their empathetic thinking tendency. Thus, teacher candidates who are active and successful in their social relationships have significantly different levels of empathetic thinking tendency. This indicates that teacher candidates with self-esteem have higher levels of empathetic thinking.

Kemp et al (2007) also reached similar results and concluded, in their study of the relationship between adolescents' empathetic thinking tendency, family support and antisocial behavior, that individual with high levels of empathetic thinking tendency are also good at personal and social cohesion (Atli, 2008, p .30).

Another result of the research is that there is no difference between the critical thinking disposition of philosophy teacher candidates and their social self-evaluation.

Both empathetic thinking and critical thinking can be trained, and therefore they are skills that could be improved. Hence, these skills should be further developed and integrated with effective educational content. To understand and make sense of the world around are the fundamental features of philosophy. Empathic understanding and critical thinking, respectively are a great contribution to understanding and making sense. Therefore, philosophy teachers are expected to have greater skills when compared with other subject teachers. The relationship between understanding and reasoning, and hence between empathetic and critical thinking disposition and cognitive and affective structures is quite strong. It is believed that the differences between the level of empathetic thinking tendency and critical thinking disposition of male and female teacher candidates may be attributed to the differences in their cognitive and affective structure. Dealing with the content of philosophy teaching department keeping in mind the equilibrium between cognitive and affective aspects, and utilising their empathetic and critical thinking skills in the transfer of this content will surely improve the quality of teachers.

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