

Full Length Research Paper

Comparison of critical thinking dispositions of prospective teachers

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The purpose of this study is to compare the critical thinking dispositions of prospective teachers. In the study, survey model, which is a descriptive research method, was used. The sample of the research consisted of 1123 students studying at the Department of Physical Education and Sports Teacher at the Schools of Physical Education and Sports and Departments of Turkish, Mathematics, Science, Classroom Teaching and Psychological Counseling and Guidance at the Faculties of Education of Kocaeli and Sakarya Universities. As a data collection tool, the shortened Turkish version of "California Critical Thinking Disposition Inventory", developed by Facione, Facione and Giancarlo and adapted to Turkish by Kokdemir was used. In data analysis, as well as descriptive statistical techniques, ANOVA was used for independent samples in order to determine whether critical thinking dispositions differed by individual and combined effects of gender, grade level and Transition to Higher Education Examination (THEE) fields. The Scheffe test was used in order to determine the source of the difference between the groups, and Cohen's f was used as the effect size of the difference. According to the result of the study, critical thinking disposition scores of prospective teachers are in medium level. While there is a significant difference between the critical thinking disposition scores according to gender and THEE fields, there is no significant difference according to grade level. Gender-THEE field and grade level-THEE field mutual interactions have a slight significant effect on the critical thinking disposition scores, whereas mutual interaction of gender and grade level has no significant effect.

Key words: Prospective teachers, critical thinking, THEE fields.

INTRODUCTION

Traditional sense of education has been criticized due to leading students to memorize the knowledge and accept it as it is rather than think and question. According to Ministry of Education (MEB) (2005), today individuals are expected to take the right decisions and carry them into practice, think creatively, have problem solving competence and learn how to learn. Common skills

expected to be reached with the new primary education curriculum prepared are the skills of critical thinking, creative thinking, communication, research-investigation, problem solving, etc.

Critical thinking was defined as the use of cognitive skills or strategies increasing the likelihood of the desired behaviors by Halpern (1996), making a decision about

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the value or accuracy of something by Beyer (1988) and considering that there may also be alternative explanations instead of reaching an absolute conclusion about the information that is read, found or told by Kokdemir (2003b). According to Kurum (2003), the purpose of the education system is to raise individuals who constantly think and will provide both personal and social development by putting their thoughts into practice in the most appropriate way. And this shows the necessity to give a significant place to activities for teaching critical thinking in schools. From this point of view, it can be said that teachers who are expected to develop critical thinking skills of the students should also have this skill.

Two different methods including "Central Placement" performed by "Student Selection and Placement Center" (SSPC/OSYM) and Selection through "Special Talent Exam" (STE) performed by higher education institutions are used in the admission of students to higher education in Turkey. All the candidates who want to enter the programs into which SSPC makes central placement and the programs admitting students through a special talent exam have to take the "Transition to Higher Education Examination" (THEE). In this exam, the success of the students is determined according to the score types considering the question types they solve (OSYM, 2014). According to which THEE field programs included in the sample of the research admit students are shown in Table 1.

In this study, it was thought that it would be appropriate to consider the relevant field by combining the data in these programs instead of individual undergraduate programs as seen in Table 1. Thus, it was thought that suggestions could be brought forward, to give an example; for critical thinking dispositions for all the equal weight field students in high schools before university considering the results related to the statuses of the students in equal weight field.

Purpose of the study

The purpose of the study is to examine the critical thinking dispositions of the prospective teachers in terms of different variables (gender, grade level and THEE field). With this purpose, answers to the following research questions were sought:

1. Is there a significant difference between the critical thinking disposition scores of the prospective teachers according to gender?
2. Is there a significant difference between the critical thinking disposition scores of the prospective teachers according to THEE field?
3. Is there a significant difference in combined effect of gender and THEE field to the critical thinking disposition scores of the prospective teachers?
4. Is there a significant difference between the critical thinking disposition scores of the prospective teachers

according to grade level?

5. Is there a significant difference in combined effect of grade level and THEE field to the critical thinking disposition scores of the prospective teachers?
6. Is there a significant difference in combined effect of gender and grade level to the critical thinking disposition scores of the prospective teachers?

Significance of the study

The findings of this study will provide some recommendations for prospective teachers' development of critical thinking disposition.

METHODOLOGY

As it was aimed to see the time-dependent change in the critical thinking disposition scores of the prospective teachers at once, cross-sectional screening model, which is a descriptive research method, was used.

Participants

In terms of sampling method, cluster sampling which is one of the random sampling methods was used. The population of the study is the 1st and 4th grade prospective teachers studying in the Physical Education and Sports Teaching, Sports Management, Recreation and Coaching programs at the Schools of Physical Education and Sports and Turkish, Mathematics, Science, Classroom Teaching and Psychological Counseling and Guidance (PCG) programs at the Faculties of Education of Kocaeli and Sakarya Universities; and the sample is 1123 volunteer prospective teachers studying in these programs in the academic year 2012 to 2013, randomly chosen from the 1st and 4th grades. With the prospective teachers participating in the study, 65.3% are female, 34.7% are male, 63.8% are in the 1st grade, 36.2% are in the 4th grade, 29.3% are from numeric, 8.7% are from verbal, 31% are from equal weight and 31% are from special talent fields.

Procedure

Before administration of the survey, the participants were informed about the purpose of the study. After receiving their consent, the survey was administered to those who volunteered to participate in the study.

Instruments

The shortened Turkish version of "The California Critical Thinking Disposition Inventory" developed by Facione et al. (1998) and adapted to Turkish by Kokdemir (2003a) was used in order to determine the critical thinking dispositions of the prospective teachers. The inventory is used to evaluate the critical thinking disposition level of a person. The original inventory has seven sub-dimensions (truth-seeking, open-mindedness, analyticity, systematicity, self-confidence, inquisitiveness, maturity) and 75 items. The shortened Turkish version of the inventory formed as a result of the factor analysis performed for the processes of adaptation of the inventory to Turkish included six dimensions (Truth-seeking, Open-mindedness, Analyticity, Systematicity, Self-confidence,

Table 1. THEE field and score types according to programs.

Programs	THEE field	Score types
Elementary mathematics education Elementary science education	Numeric	Math-Science (MS)-1 MS-2
Elementary education Guidance and psychological counseling	Equal weight	Turkish-Math (TM)-2 TM-3
Turkish teacher	Verbal	Turkish-Social (TS) -2
Physical education and sports teacher Sports management Recreation Coaching	Special talent	Special talent exam

Inquisitiveness) and 52 items. The lowest score to be received from the inventory is 51 and the highest score is 306. The total variance explained by the inventory is 36.13%. Internal consistency coefficient of the Turkish inventory (alpha) was found to be 0.88. The total score obtained by calculating these sub-dimensions is used to determine the critical thinking disposition (Kokdemir, 2003a). In the reliability analysis of the data of this research, alpha internal consistency coefficient was calculated as 0.83.

Data analysis

In data analysis, as well as descriptive statistical techniques (frequency, percentage, arithmetic mean), Two-Way ANOVA for independent samples was used in order to determine whether critical thinking dispositions differed by the combined effect of any two of the variables of THEE field, gender and grade level. This method is used to measure the combined effect of more than one independent variable on a particular dependent variable. Variance analysis tries to determine whether there is a significant difference between the group means, whereas it does not show which group or groups the difference comes from. In order to determine which groups this difference is between, multiple comparison test (Post-Hoc) is required to be performed. In order to determine the source of the difference emerging between the groups, Scheffe, which is one of the Post-Hoc tests, was used. In cases of equality of group variances, excessive number of groups and difference in the number of samples in groups, Scheffe is a type of Post-Hoc which is the most flexible and conservative (keeping alpha margin of error under control) for the comparison of all the linear combinations between the groups (Buyukozturk, 2011; Can, 2013; Eymen, 2007; Roscoe, 1975; Scheffe, 1953, 1959; Kayri, 2009; Secer, 2013).

Variance analysis reveals whether there is a significant difference between the group means, whereas it does not provide information about the size of the difference. Therefore, as well as the statistical significance (p), the effect size is also recommended to be reported. In this study, Cohen's f was used in order to determine the size of the difference emerging between the groups. Cohen's f value provides an imputed value about how much of variance in the dependent variable is explained by the independent variable. For Cohen's f , 0.10 to 0.25 is interpreted as small, 0.25 to 0.40 as medium, 0.40 to 0.50 as large, 0.50 and over as very large effect size. Primarily Eta-squared (η^2) value is required to be found in order to calculate the Cohen's f value (Akbulut, 2010; Cohen, 1988;

Akbulut, 2010; Buyukozturk, 2011; Green and Salkind, 2005; Can, 2013; Ellis, 2010; Isik, 2014; Maxwell and Delaney, 1990; Synder and Lawson, 1993; Ozsoy and Ozsoy, 2013).

FINDINGS

Descriptive statistics

Descriptive statistics findings related to the critical thinking dispositions of prospective teachers are shown in Table 2. When the overall sample is taken into consideration according to Table 2, the critical thinking disposition mean scores of prospective teachers is 206.14. Considering that the lowest score to be received from the inventory is 51 and the highest score is 306, the critical thinking disposition scores of prospective teachers can be said to be in medium level. It is also observed that the critical thinking disposition scores are higher in favor of females by gender ($\bar{X}_{\text{Female}} = 207.62$), 4th grades by grade level ($\bar{X}_{\text{4th grade}} = 207.62$), numeric field by field ($\bar{X}_{\text{Numeric}} = 208.71$). However, it is necessary to test whether these differences are statistically significant.

The data met the homogeneity assumption according to the Levene test ($F = 0.192$, $P > 0.05$), and met normality assumption according to the Kolmogorov-Smirnov test ($Z = 0.242$, $p > 0.05$). Therefore, parametric tests were used in the analyses.

Gender, THEE field and combined effect of gender and THEE field

The results of the Two-Way ANOVA for Independent Samples carried out in order to determine whether the critical thinking dispositions of prospective teachers differed by the combined effect of gender and THEE field are shown in Table 3. Findings about whether the critical thinking disposition means scores of prospective teachers

Table 2. Descriptive statistics findings related to the critical thinking dispositions of prospective teachers.

Dimensions		N	\bar{X}	SS
Gender	Women	733	207.62	0.83
	Man	390	203.37	1.14
Grade level	1st grade	716	205.25	.85
	4th grade	407	207.71	1.10
THEE field	Numeric	329	208.71	1.20
	Verbal	98	199.09	2.38
	Equal weight	348	207.77	1.25
	Special talent	348	204.08	1.16
Total		1123	206.14	22.53

Table 3. Results of the Two-Way ANOVA for Gender*THEE Field.

Source of variance	df	F	p	η^2	Cohen's <i>f</i>
Gender	1	3.911	0.048**	0.003	0.055
THEE field	3	3.559	0.014**	0.009	0.095
Gender * THEE field	3	4.786	0.003*	0.013	0.115
Error	1115	-	-	-	-

*($p < 0.01$) ** ($p < 0.05$) R Squared = .034 (Adjusted R Squared = .028).

differed by gender and THEE field separately will be discussed before the combined effect of gender and THEE field on them.

Gender

By gender, there is a significant difference between the critical thinking disposition mean scores of female ($\bar{X}_{\text{Female}}=207.62$) and male ($\bar{X}_{\text{Male}}=203.37$) prospective teachers in favor of females [$F_{(1-1115)}=3.911$; $p < .05$]. The calculated effect size (Cohen's $f = .055$) indicates that this difference is in low level.

THEE field

By THEE field, there is a statistically significant difference between the critical thinking disposition scores of at least two of the numeric ($\bar{X}_{\text{Numeric}}=208.71$), verbal ($\bar{X}_{\text{Verbal}}=199.09$), equal weight ($\bar{X}_{\text{Equal weight}}=207.77$) and special talent ($\bar{X}_{\text{Special talent}}=204.08$) groups [$F_{(3-1119)}=3.559$; $p < .05$]. The calculated effect size (Cohen's $f = .095$) indicates that this difference is in low level. The results of the Scheffe test was performed to determine the field's significant difference, which was observed among THEE fields as shown in Table 4.

According to Table 4, When the critical thinking dispositions of numeric students were compared with the other three fields, it was determined that there was a statistically significant difference between the mean scores of numeric field ($\bar{X}=208.71$) and the mean scores of verbal field ($\bar{X}=199.09$) in favor of numeric field [$F_{(3-1119)}=3.559$, $p = p < 0.05$]; however, there was no significant difference between numeric field and equal weight ($\bar{X}=207.77$) and special talent ($\bar{X}=204.08$) fields [$F_{(3-1119)}=3.559$; $p > 0.05$].

When verbal students were compared with the other three fields, it was determined that there was a statistically significant difference between the mean scores of verbal field ($\bar{X}=199.09$) and numeric field ($\bar{X}=208.71$), and equal weight field ($\bar{X}=207.77$) in favor of numeric and equal weight fields [$F_{(3-1119)}= 3.559$; $p < 0.05$]; however, there was no significant difference between verbal field and special talent ($\bar{X}=204.08$) field [$F_{(3-1119)}= 3.559$; $p > 0.05$].

When the students of equal weight field were compared with the other three fields, it was determined that there was a statistically significant difference between the mean scores of equal weight field ($\bar{X}=207.77$) and verbal field ($\bar{X}=199.09$) in favor of equal weight [$F_{(3-1119)}= 3.559$; $p < 0.05$]; however, there was no significant difference between equal weight field and numeric ($\bar{X}=208.71$) and special talent ($\bar{X}=204.08$) fields [$F_{(3-1119)}= 3.559$; $p > 0.05$].

Table 4. Results of the Scheffe Test by THEE Field.

(I) THEE field	(J) THEE field	Mean difference (I-J)	Std. Error	Sig.
Numeric	Verbal	9.62*	2.56	0.003
	Equal weight	0.94	1.71	0.959
	Special talent	4.63	1.71	0.062
Verbal	Numeric	-9.62*	2.56	0.003
	Equal weight	-8.68*	2.54	0.009
	Special talent	-4.99	2.54	0.278
Equal weight	Numeric	-.94	1.71	0.959
	Verbal	8.68*	2.54	0.009
	Special talent	3.69	1.68	0.188
Special talent	Numeric	-4.63	1.71	0.062
	Verbal	4.99	2.54	0.278
	Equal weight	-3.69	1.68	0.188

*The mean difference is significant at the 0.05 level.

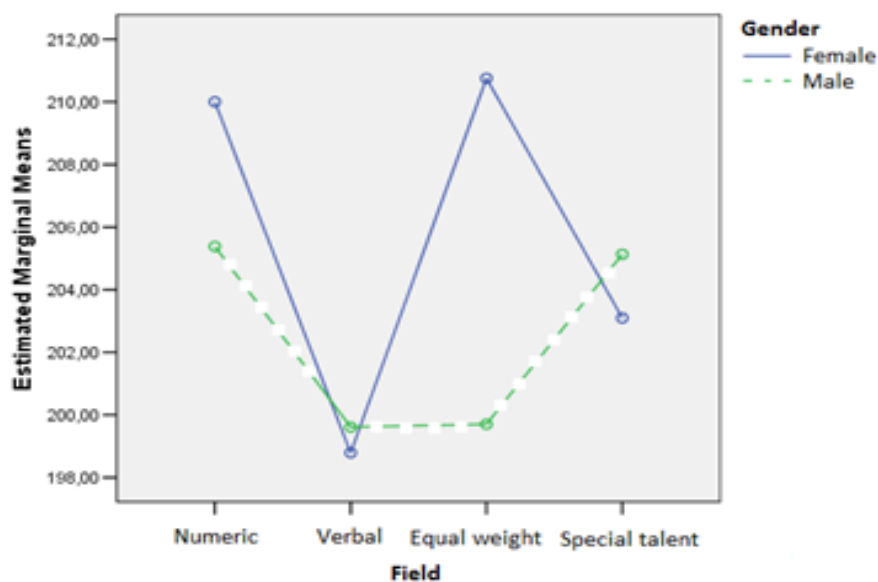


Figure 1. Gender*THEE field combined effect.

When the students of special talent field were compared with the other three fields, it was determined that there was no statistically significant difference between the mean scores of special talent field (\bar{X} =204.08) and numeric (\bar{X} =208.71), verbal (\bar{X} =199.09) and equal weight (\bar{X} =207.77) fields [$F_{(3-1119)}= 3.559$. $p>0.05$].

Combined effect gender and THEE field

Mutual interaction of gender and THEE field has a significant effect on the critical thinking disposition scores of prospective teachers [$F_{(3-1115)}=4.786$, $p<0.05$]. However, it can be said that the effect of this interaction

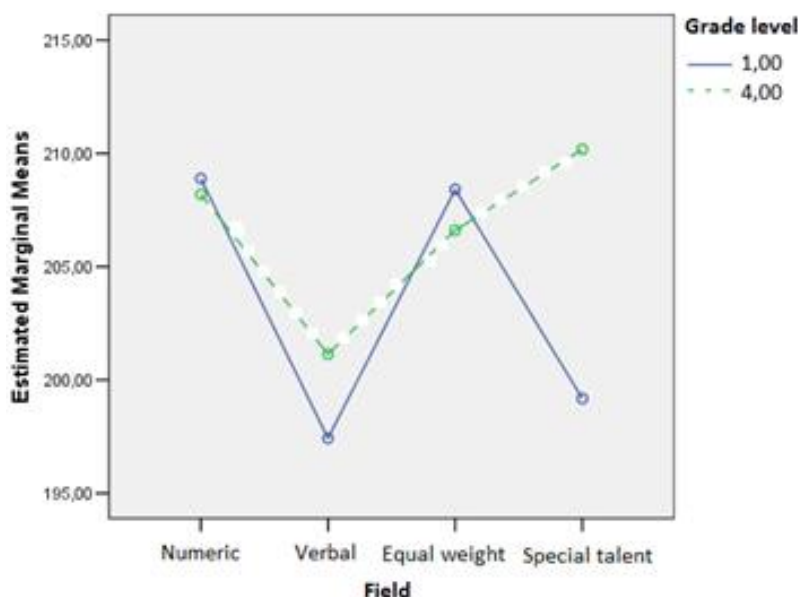
on the critical thinking disposition scores is a small effect (Cohen's $f =.115$) and this value explains 3.4% of the total variance ($R^2=0.034$). When Cohen's f value is examined for the interpretation of the effect size, it is seen that the effect size of gender is 0.055, THEE field is 0.095 and the combined effect size of gender and THEE field is 0.115. In this regard, it can be said that Gender*THEE field combined effect has a greater value in terms of effect size. What the gender*THEE field combined effect on the critical thinking disposition scores of prospective teachers is like is shown in Figure 1.

According to Figure 1, females have higher mean scores in numeric and equal weight fields, and males in

Table 5. Results of the Two-Way anova for grade level*THEE field.

Source of variance	df	F	p	η^2	Cohen's <i>f</i>
Grade level	1	3.723	0.054	0.003	0.055
THEE field	3	4.956	0.002*	0.013	0.115
Grade level * THEE field	3	5.541	0.001*	0.015	0.123
Error	1115	-	-	-	-

* ($p < 0.01$) R Squared = 0.036 (Adjusted R Squared = 0.030).

**Figure 2.** Grade level*THEE field combined effect.

verbal and special talent fields. Low mean scores of both males and females in verbal field and high mean scores of females in equal weight field are remarkable. According to these findings, it can be said that gender and THEE field are factors effecting the critical thinking disposition scores of prospective teachers both separately and through their mutual interaction. In addition, according to Can (2013), intersection of the lines in such Figures shows the existence of combined effect.

Grade level, combined effect of grade level and THEE field

The results of the Two-Way ANOVA for independent samples carried out in order to determine whether the critical thinking dispositions of prospective teachers differed by the combined effect of grade level and THEE field are shown in Table 5. Findings about whether the critical thinking disposition mean scores of prospective teachers differed by grade level will be discussed before the combined effect of grade level and THEE field.

Grade level

By grade level, there is no significant difference between

the critical thinking disposition mean scores of 1st ($\bar{X}_{1st\text{Grade}} = 205.25$) and 4th ($\bar{X}_{4th\text{Grade}} = 207.71$) grade prospective teachers [$F_{(1-1115)} = 3.723$, $p > 0.05$]. Critical thinking disposition differs by grade level.

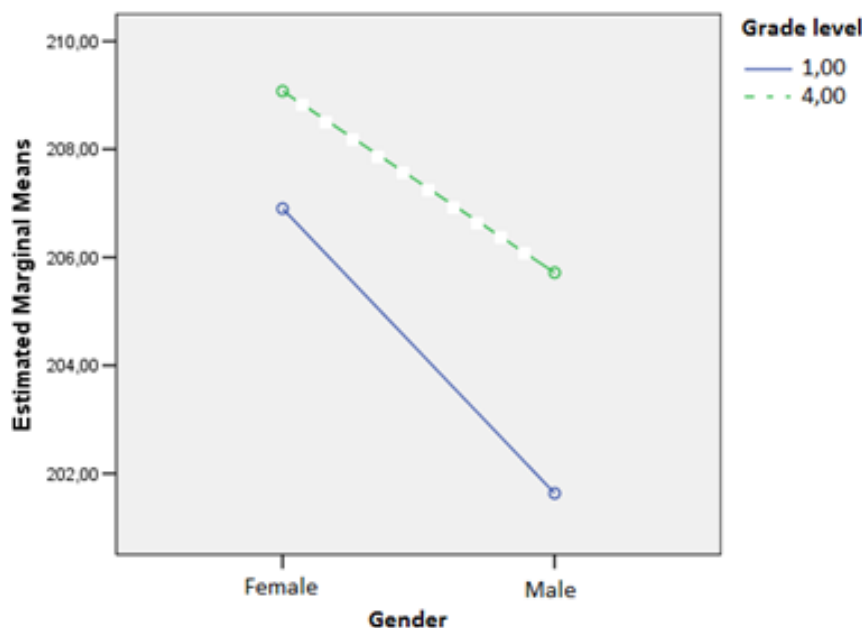
Combined effect of grade level and THEE field

The mutual interaction of grade level and THEE field has a significant effect on the critical thinking disposition scores of prospective teachers [$F_{(3-1115)} = 5.541$, $p < 0.05$]. However, it can be said that the effect of this interaction on the critical thinking disposition scores is a small effect (Cohen's $f = 0.015$) and this value explains 3.6% of the total variance ($R^2 = 0.036$). When Cohen's f value is examined for the interpretation of the effect size, it is seen that the effect size of grade level is 0.055, THEE field is 0.115 and the combined effect size of grade level and THEE field is 0.123. In this regard, it can be said that grade level*THEE field combined effect has a greater value in terms of effect size. What the grade level*THEE field combined effect on the critical thinking disposition scores of prospective teachers is like is shown in Figure 2.

Table 6. Results of the two-way ANOVA for gender*grade level.

Source of variance	df	F	p	η^2	Cohen's <i>f</i>
Gender	1	8.878	0.003*	0.008	0.090
Grade level	1	4.668	0.031**	0.004	0.063
Gender * grade level	1	0.436	0.509	0.000	0.000
Error	1119	-	-	-	-

*($p < 0.01$) ** ($p < 0.05$) R Squared = 0.012 (Adjusted R Squared = 0.010).

**Figure 3.** Gender*grade level combined effect.

DISCUSSION

Throughout the sample, the critical thinking disposition scores of prospective teachers are in medium level

In the studies on the critical thinking dispositions of; prospective teachers in general carried out by Dayioglu (2003), Dutoglu and Tuncel (2008), Korkmaz and Yesil (2009), Kurum, (2002), Leaver-Dunn et al. (2002), Ozden (2005) and Semerci (2010), prospective classroom teachers by Cetin (2008), prospective physical education and sports teachers by Sacli and Demirhan (2008), prospective Turkish teachers by Sen (2009), teachers by Korkmaz (2009) and university students by Evens et al. (2013), it was concluded that the critical thinking dispositions were in medium level in parallel with the results of this study. Unlike the findings of this study, in the studies on the critical thinking dispositions of; prospective science teachers carried out by Kartal (2012) and prospective elementary school mathematics

teachers by Turnuklu and Yesildere (2005), it was concluded that the critical thinking dispositions were generally above medium level, but not high enough. Contrary to these, in the studies on the critical thinking dispositions of; prospective teachers in general by Yuksel et al. (2013), Zayif (2008), prospective teachers studying in the 1st grade by Grosser and Lombard (2008) and prospective social sciences and science and technology teachers by Tural and Secgin (2012), it was concluded that the critical thinking dispositions were in low level. In the relevant studies, it is seen that the critical thinking disposition levels of prospective teachers are below medium level, in medium level and slightly above medium level. However, no study showing high level has been encountered. Considering both the 1st and 4th grades, both females and males, even if the mean score of a group is found higher than the other, the critical thinking disposition level of the group with higher score is not found high in terms of total score. Considering these studies, it can be said that the critical thinking dispositions of prospective teachers are not in sufficient level.

There is a significant difference between the critical thinking dispositions of prospective teachers in favor of females by gender

In the studies carried out by Derelioglu (2005), Karadeniz (2006), Kokdemir (2003a) and Zayif (2008) the critical thinking dispositions of prospective teachers were found significant in favor of females in parallel with the result of this study, whereas contrary to these findings, in the studies carried out by Cokluk and Yilmaz (2005), it was concluded that the critical thinking dispositions differed in favor of males. Contrary to these research findings, in the studies on the critical thinking dispositions of; prospective teachers carried out by Cetin (2008), Dayioglu (2003), Yuksel et al. (2013), Ekinici (2009), Emir (2012), Jenkins (1998), McBride et al. (2002), Myers and Dyer (2006), Sacli and Demirhan (2008), Semerci (2010), Sen (2009), Senlik et al. (2011) Topoglu and Unal-Oney (2013), Yenice (2012) and Yuksel et al. (2013), prospective Social Sciences and Science and Technology teachers by Tural and Secgin (2012), working teachers by Korkmaz (2009) and university students by Tumkaya et al. (2009), it was concluded that the critical thinking dispositions did not differ significantly by gender. In the relevant studies, as well as studies finding differences in favor of females as in this study, studies finding differences in favor of males contrary to those studies are also available. There are also studies which concluded that there was no significant difference by gender. Considering all these findings, it can be said that gender is not a determining factor in the critical thinking dispositions of prospective teachers.

There is a significant difference between the critical thinking disposition mean scores of prospective teachers by THEE field

There is a difference between numeric students and verbal students in favor of numeric field and between equal weight students and verbal students in favor of equal weight field, whereas there is no significant difference between special talent students and the other field types. Although in the studies carried out by Dayioglu (2003), Kurum (2002), Ozden (2005) and Zayif (2008), a significant difference was also found in favor of numeric field in parallel with the findings of this study, in the studies carried out by Tumkaya et al. (2009) and Semerci (2010), it was concluded that the critical thinking dispositions of students studying in verbal field (Turkish) were higher compared to numeric field (Science). On the other hand, in the studies carried out by Ekinici (2009), Emir (2012), Karadeniz (2006), Korkmaz (2009), Kokdemir (2003a), Sacli and Demirhan (2008), Sen (2009), Topoglu and Unal-Oney (2013) and Zayif (2008), it was concluded that the critical thinking dispositions of prospective teachers did not differ significantly by their

field. Considering all these findings, it can be said that THEE field is not a determining factor in the critical thinking dispositions of prospective teachers.

The mutual interaction of gender and THEE field has a low level significant effect on the critical thinking disposition scores of prospective teachers

The mean scores of numeric and equal weight fields in females and verbal and special talent fields in males are higher. No studies examining the effect of the mutual interaction of Gender and THEE field on the critical thinking disposition scores of prospective teachers were found in the literature. Consequently, considering only the findings of this study, it can be said that the mutual interaction of Gender and THEE field is a factor effecting the critical thinking disposition scores of prospective teachers.

There is no significant difference between the critical thinking disposition mean scores of prospective teachers by grade level

In the studies carried out by Ekinici (2009) and Yenice (2012), it was also concluded that the critical thinking dispositions of prospective teachers did not differ by grade level in parallel with this study. However, in the studies carried out by Cetin (2008), Korkmaz and Yesil (2009), Ozden (2005), Sacli and Demirhan (2008) and Tumkaya et al. (2009), it was concluded that there was a significant difference between the critical thinking disposition levels of prospective teachers in favor of the 4th grades while it was found in favor of the 3rd grades in the study carried out by Zayif (2008). In the relevant studies, although results finding no difference by grade level in parallel with this study are available, there are also studies finding differences by grade level. In the studies finding a difference, this difference is observed to be in favor of the final grades. Higher mean scores in the final grades can be interpreted as the positive contribution of the education given in the institutions training teachers, and this increase can also be said to be resulted from people's becoming individuals who are more responsible, more inquisitive and can make their own decisions with the transition from adolescence to middle age.

The mutual interaction of grade level and THEE field has a low level significant effect on the critical thinking disposition scores of prospective teachers

The mean scores of numeric and equal weight fields in the 1st grades, and verbal and special talent fields in the 4th grades are higher. Contrary to this, the mutual interaction of grade level and educational field did not

cause a significant difference in the critical thinking disposition scores in the study carried out by Tumkaya et al. (2009). Based on the findings of this research alone, it can be said that the mutual interaction of grade level and THEE field is a factor affecting the critical thinking disposition scores.

The mutual interaction of gender and grade level has no significant effect on the critical thinking disposition scores of prospective teachers

Concordantly, the mutual interaction of gender and grade level also caused no significant difference in the critical thinking disposition scores in the study carried out by Tumkaya et al. (2009). In conclusion, it can be said that the mutual interaction of gender and grade level is not a factor affecting the critical thinking disposition scores of prospective teachers.

Conclusion

The following conclusions have been reached in this study, in which the critical thinking dispositions of prospective teachers were analyzed in terms of various variables:

1. Throughout the sample, the critical thinking disposition scores of prospective teachers are in medium level.
2. There is a significant difference between the critical thinking dispositions of prospective teachers in favor of females by gender.
3. There is a significant difference between the critical thinking disposition mean scores of prospective teachers by THEE field. There is a difference between numeric students and verbal students in favor of numeric field and between equal weight students and verbal students in favor of equal weight field, whereas there is no significant difference between special talent students and the other field types.
4. The mutual interaction of gender and THEE field has a low level significant effect on the critical thinking disposition scores of prospective teachers. The mean scores of numeric and equal weight fields in females and verbal and special talent fields in males are higher.
5. There is no significant difference between the critical thinking disposition mean scores of prospective teachers by grade level.
6. The mutual interaction of grade level and THEE field has a low level significant effect on the critical thinking disposition scores of prospective teachers.
7. The mutual interaction of gender and grade level has no significant effect on the critical thinking disposition scores of prospective teachers.

RECOMMENDATIONS

In accordance with the results of the study, the following

recommendations can be made: As a result of the study, the critical thinking dispositions of prospective teachers were found to be below the expected level in general. It can be suggested that it will not be enough to increase the activities for developing the critical thinking disposition only in institutions training teachers, and activities for developing the critical thinking disposition should be increased in all stages of education starting from pre-school. It can also be suggested that the education given to individuals constantly suppressed in the family or society from young ages and not allowed to question only in schools will not be enough; besides, activities for developing the critical thinking disposition should be performed throughout the society through non-formal educational institutions. Further research can be done on different and larger samples.

Conflict of Interests

The authors have not declared any conflict of interests.

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