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The Investigation of Critical Thinking Dispositions of Religious Culture and Ethics Teacher Candidates (The Case of Ankara University and Kastamonu University in Turkey)

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Abstract

The purpose of this study is to investigate the critical thinking dispositions of religious culture and ethics teacher candidates in terms of some variables. The independent variables of the study are gender, high school types from which they graduated, birth place, motherland, education level of their parents, and family's average income. The sample of the study is 226 teacher candidates in Ankara University and Kastamonu University, religion culture and ethics teaching department. The research is designed as a case study; the data is obtained by Measurement of California Critical Thinking Disposition Inventory. The inventory is a lykert-type scale, has 51 items. The value of the overall reliability of measurement instrument (Cronbach Alpha) is 0.88. A one way analysis of variance (ANOVA) and independent samples t-test are used to analyze the data. In the end of the study, it was found that religious culture and ethics teacher candidates think sufficiently critical.

Keywords: *Teacher, teacher education, religion culture and ethics teaching, critical thinking*

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Introduction

Statement of the Problem

Societies need people who are qualified in applying various thinking skills (Güven & Kürüm, 2006). According to Nickerson (1987) thinking skills include problem solving, decision-making, critical thinking, logical judgment and creative thinking. Critical thinking is a particularly important skill that was strongly supported by Dewey and continues to be examined today (Dayioğlu, 2003).

Gibson (1995: 28) defines critical thinking as “the norm of good thinking, the rational aspect of human thought, and as the intellectual virtues needed to approach the world in a reasonable, fair-minded way”. Ennis (1993) indicates that critical thinking is reasonable reflective thinking that is focused on deciding what to believe or do. Furthermore, American Philosophical Association (APA) (1990) claims that critical thinking is the purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation and inference as well as explanation of the evidential conceptual, methodological, contextual considerations upon which that judgment was based.

Critical thinking is seen as the “desirable outcome” in social sciences and science (Watson & Glaser, 1964: 9). Reed (1998) and Lai (2011) advocate that an important and necessary outcome of education is to develop an educated citizenry and quality work-force who are able to think critically. Likewise, Cotton (2001: 1) indicates that: “In today’s information age, thinking skills are viewed as crucial for educated persons to cope with a rapidly changing world. Many educators believe that specific knowledge will not be as important to tomorrow’s workers and citizens as the ability to learn and make sense of new information.”

Critical thinking skills benefit people socially and educationally, because today’s world is complex and the problems we face are complicated (Hirose, 2001). The ability to analyze problems and think critically at all levels of education is essential (Carr, 1990). Therefore, preparing students for this complicated world requires “many changes in the educational setting, curriculum and instruction in any disciplines in line with improving students’ thinking skills” (Dayioğlu, 2003: 2). Critical thinking skills involve more advanced learning than just memorization of facts; they enable people to analyze topics, evaluate solutions, and synthesize their own opinions.

Research Statement

In the 21st century, information and computing technologies are developing rapidly. To keep up with the rate of this progress, societies need people who are able to use critical thinking skills such as analyzing and synthesizing.

For education to develop the critical thinking skills of students, experienced teachers need to be prepared teachers to teach critical thinking skills (Facione, 1990). Paul, Elder and Bartell (1997) emphasize that the importance of teacher education by underlining need for teachers “who are able to think critically and who have abilities of problem solving to raise students who are capable of thinking critically as well as capable of solving problems”.

Supportively, Wilks (1995) claims that if societies want to change, the first step will be to renew teachers’ critical thinking skills. Szaboa and Schwartz (2010) assert that critical thinking skills and its techniques should take place in the courses or activities of teacher education program so that the students have the opportunity to develop these skills before they become in-service teachers.

To best investigate critical thinking skills of pre-service and in-service teachers, researchers often explore critical thinking dispositions because the dispositional attributes help predict critical thinking skills (Facione, Giancarlo, Facione & Gainen, 1995). Moreover, Carter (2008: 90) indicates that there is a connection between critical thinking skills and critical thinking dispositions; “the former pertains to thinking applications; the latter to character tendencies to think and act critically”.

The Research Questions

The following research questions are designed in order to achieve the purpose of the study: (1) What is the level of critical thinking dispositions of religious culture and ethics teacher candidates? (2) Is there a significant difference between religious culture and ethics teacher candidates’ critical thinking dispositions with regard to their gender, high school types from which they graduated, birth place, geographical region coming from, the education level of their parents, father’s profession, and family’s average income?

Research Method

Research Design

The purpose of this research is to investigate critical thinking dispositions of religious culture and ethics teacher candidates. For this reason, research was designed as a case study. Case studies are

described as investigations of a phenomenon that occurs within specific context (Miles & Huberman, 1994). According to Yin (2003) a case study defined also a “story about something unique, special, or interesting stories can be about individuals, organizations, processes, programs, neighborhoods, institutions, and even events ”(as cited in Neale, Thapa & Boyce, 2006: 3). For this reason case studies are useful “when the context of study and the extent to which particular program or innovation has been implemented” (Gay, Mills & Airasian, 2009: 427).

Research Sample

The purposive sample for this study is religious culture and ethics teacher candidates who are studying BA at Ankara and Kastamonu University, Education Faculty, Department of Religious Culture and Ethics Teaching. The total number of sample is 226.

Instrumentation

In case study, data can be collected through various techniques such as questionnaires or surveys, interviews, observations, or written accounts by the subjects (Wantz, Firmin, Johnson & Firmin, 2006). In this research, data was collected with demographic form and survey which was Critical Thinking Disposition Inventory.

Demographic (Information) Form: The instrument had demographic information part which includes religious culture and ethics teacher candidates’ gender, high school types from which they graduated, birth place, motherland, education level of their parents, and family’s average income.

California Critical Thinking Disposition Inventory: In this research, in order to examine critical thinking dispositions, California Critical Thinking Disposition Inventory was used. The original CCTDI was developed by Facione and Facione (1992). This inventory measures the ‘willing’ dimension in the expression ‘willing and able’ to think critically”. The inventory has 51 items. The value of the overall reliability of measurement instrument (Cronbach Alpha) is 0.88.

Method of data analysis

The SPSS 15 program was used as an inferential data analysis tool to analyze the data. Results were evaluated in accordance with religious culture and ethics teacher candidates’ demographic features and critical thinking dispositions. Statistical significance level was taken as $p < .05$. A one way analysis of variance (ANOVA) and independent samples t-test are used to analyze the data. For the scale of 5 point likert type, arithmetic average values for scale items are shaped like “absolutely disagree” between the range of 1.00-1.79, “disagree” 1.80-2.59, “indecisive” 2.60-3.39, “agree” 3.40-4.19, “absolutely agree” 4.20-5.00.

Results

Descriptive Results

The Descriptive results of critical thinking dispositions of religious culture and ethics teacher candidates are given in Table 1.

Table 1. The Descriptive results of the study

N	Minimum	Maximum	Mean (X)	Sd.
226	2.83	5.00	4.12	.530

The critical thinking dispositions points of teacher candidates attending the study change between 2,83 and 5,00. In general, the critical thinking level of teacher candidates is 4,12 and standard deviation value is ,530.

2. Findings Related to Significant Differentiation of Independent Variables

T-test and variance analysis (ANOVA) have been used in order to determine whether there is a significant relation among the critical thinking dispositions of teacher candidate. The data collected has been demonstrated below.

Table 2. T-test Results Related to Differentiation of Teacher Candidates’ Critical Thinking Level in Terms of Gender

Gender	N	X	S	t	P
Male	112	4,15	,516	,741	,460
Female	114	4,09	,545		

As seen in Table 2, the variable gender has not made a significant difference on the critical thinking dispositions of teacher candidate ($T=.741$, $p>.05$).

Table 3. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of High School Graduation

High School Graduation		N	X	Sd
1	Religious High School	56	4,12	,585
2	Public High School	80	4,08	,576
3	Anatolian High School	80	4,17	,455
4	Other High Schools	10	4,02	,384
Total		226	4,12	,530
ANOVA Results		F= 1,040	p= .395	p>.05

The variable high school graduation has not made a significant differentiation on the critical thinking level of study sample ($F=1,040$; $p>.05$).

Table 4. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of Birth Place

Birth Place		N	X	Sd
1	Country	34	3,85	,587
2	County	34	4,25	,516
3	City	124	4,14	,496
4	Metropolitan	34	4,17	,540
Total		226	4,12	,530
ANOVA Results		F= 4,058	p= .008	p<.05
<u>According to Post hoc (LSD) test, first group and third group are significantly different.</u>				

In the Table 4, it has been seen that the variable birth place has made a significant differentiation on the critical thinking level of study sample ($F=4,058$; $p<.05$). According to Post hoc (LSD) test, teacher candidates who born in country and teacher candidates who born in city are significantly different from one another at a high level. The critical thinking level of teacher candidates who born in country is 3,85, and that of teacher candidates who born in city is 4,14. From these statistics, it can be said that the critical thinking level of teacher candidates who born in city is higher than that of teacher candidates who born in country.

Table 5. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of Motherland

Motherland		N	X	Sd
1	Marmara Region	16	4,11	,633
2	Aegean Region	28	4,20	,540
3	Mediterranean Region	24	4,20	,429
4	Central Anatolia Region	58	4,22	,480
5	Black Sea Region	72	4,15	,464
6	East Anatolia Region	14	3,86	,708
7	Southeast Anatolia Region	14	3,57	,568
Total		226	4,12	,530
ANOVA Results		F= 3,891	p= .001	p<.05
<u>According to Post hoc (LSD) test, seventh group and other groups are significantly different.</u>				

Examining the results related to teacher candidates' critical thinking level in terms of motherland, it can be seen that there is a significant differentiation between the critical thinking level of teacher candidates who born in Southeast Anatolia Region ($X=3,57$) and the others ($p<.05$). From these

statistics, it can be stated that the critical thinking level of teacher candidates who born in Southeast Anatolia Region is lower than the other teacher candidates.

Table 6. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of Mother Educational Level

Mother Educational Level		N	X	Sd
1	Not literate	26	3,92	,600
2	Literate	14	4,17	,463
3	Elementary School	134	4,07	,518
4	High School	46	4,37	,477
Total		220	4,12	,530
ANOVA Results F= 4,037 p= .004 p<.05				
According to Post hoc (LSD) test, first group and fourth group are significantly different.				

In the Table 6, it has been seen that the variable mother educational level has made a significant differentiation on the critical thinking level of study sample ($F=4,037$; $p<.05$). According to Post hoc (LSD) test, teacher candidates whose mother is not literate and teacher candidates whose mother graduated from high school are significantly different from one another at a high level. The critical thinking level of teacher candidates whose mother is not literate is 3,92, and that of teacher candidates whose mother graduated from high school is 4,37. From these statistics, it can be said that the critical thinking level of teacher candidates whose mother graduated from high school is higher than that of teacher candidates whose mother is not literate.

Table 7. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of Father Educational Level

Father Educational Level		N	X	Sd
1	Literate	10	3,51	,345
2	Elementary School	92	4,07	,529
3	High School	78	4,20	,567
4	Bachelor Degree	46	4,16	,452
Total		226	4,12	,530
ANOVA Results F= 2,945 p= .021 p<.05				
According to Post hoc (LSD) test, first group and third group are significantly different.				

Examining the results related to teacher candidates' critical thinking level in terms of father educational level, it can be seen that there is a significant differentiation between the critical thinking level of teacher candidates whose father is literate ($X=3,51$) and that of teacher candidates whose father graduated from high school ($X=4,20$). From these statistics, it can be said that the critical thinking level of teacher candidates whose father graduated from high school is higher than that of teacher candidates whose father is literate ($p<.05$).

Table 8. ANOVA Test Results Related to Differentiation of Teacher Candidates' Critical Thinking Level in Terms of Family's Average Income

Family's Average Income		N	X	Sd
1	0-1000 Turkish Liras	92	4,10	,582
2	1001-2000 Turkish Liras	90	4,03	,462
3	2001-3000 Turkish Liras	40	4,35	,521
Total		222	4,12	,530
ANOVA Results F= 2,650 p= .034 p<.05				
According to Post hoc (LSD) test, second group and third group are significantly different.				

The variable family's average income has made a significant differentiation on the critical thinking level of study sample ($F=2,650$; $p<.05$). According to Post hoc (LSD) test, teacher candidates whose family's level of income between 1001-2000 Turkish Liras ($X=4,03$) and teacher candidates whose family's level of income between 2001-3000 Turkish Liras ($X=4,35$) are significantly different from one another at a high level. From these statistics, it can be said that the critical thinking level of

teacher candidates whose family's level of income between 2001-3000 Turkish Liras is higher than that of teacher candidates whose family's level of income between 1001-2000 Turkish Liras.

Conclusions and Implications

At the end of the study, the obtained conclusions have been demonstrated below:

1. The critical thinking level of religious culture and ethics teacher candidates has been determined as 4,12. This level means that religious culture and ethics teacher candidates think sufficiently critical.
2. The variable gender has not made a significant difference on the critical thinking dispositions of teacher candidate.
3. The variable high school graduation has not made a significant differentiation on the critical thinking level of study sample.
4. The critical thinking level of teacher candidates who born in city is higher than that of teacher candidates who born in country.
5. The critical thinking level of teacher candidates who born in Southeast Anatolia Region is lower than the other teacher candidates.
6. The critical thinking level of teacher candidates whose mother graduated from high school is higher than that of teacher candidates whose mother is not literate.
7. The critical thinking level of teacher candidates whose father graduated from high school is higher than that of teacher candidates whose father is literate.
8. The critical thinking level of teacher candidates whose family's level of income between 2001-3000 Turkish Liras is higher than that of teacher candidates whose family's level of income between 1001-2000 Turkish Liras.

Following are implications for teachers, instructors and parents to help improve critical thinking skills among teacher candidates.

- From primary school to university, the content of courses should support and develop critical reading, writing, and discussion.
- Universities can design elective or compulsory courses to introduce what critical thinking is and how critical thinking can used in lesson planning and instruction.
- Teachers should attend seminars that give information about how they can transfer their critical thinking skills to students.
- In order to develop awareness of using critical thinking, schools can organize seminars for parents.
- In education faculties, instructors should prepare performance and problem- based assessments and evaluation methods that give teachers opportunities to apply critical thinking skills.
- In universities, students may attend clubs and scientific communities to practice thinking skills in social life.

References

- American Philosophical Association. (1990). Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Retrieved from ERIC database. (ED315423).
- Carr, K. S. (1990). How can we teach critical thinking? Retrieved from ERIC database. (ED326 304)
- Carter, L. M. (2008). Critical thinking dispositions in online nursing education. *Journal of distance education*, 22(3), 89-114.
- Cotton, K. (2001). Teaching thinking skills. School improvement research series. Retrieved from <http://www.nwrel.org/scpd/sirs/6/cu11.html>
- Dayioğlu, S. (2003). A descriptive study on the critical thinking levels of the students at the unit of English preparatory school at Hacettepe University. (Unpublished doctoral dissertation). Middle East Technical University, Ankara, Turkey.
- Ennis, R. H. (1993). Critical thinking assessment. *Theory into Practice*, 32(3), 179-186.

- Facione, P. A. (1990). Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction - executive summary - the Delphi report. Millbrae CA: The California Academic Press.
- Facione, P. A., & Facione, N. C. (1992). The California critical thinking dispositions inventory (CCTDI); and the CCTDI test manual. Millbrae, CA: California Academic Press.
- Facione, P. A., Giancarlo, C. A., Facione, N. C., & Ganien, J. (1995). The disposition toward critical thinking. *Journal of General Education*, 44(1), 1-25.
- Gay, L. R., Mills, G. E., & Airasian, P. (2009). *Education research competencies for analysis and applications*. N.J: Pearson Education.
- Gibson, G. (1995). Critical thinking: implications for instruction. *Reference & User Services Quarterly (RQ)*, 35, 27-35.
- Güven, M., & Kürüm, D. (2008). Öğretmen adaylarının öğrenme stilleri ile eleştirel düşünme eğilimleri arasındaki ilişki. *İlköğretim Online*, 7(1), 53-70.
- Hirose, S. (2001). Critical thinking in community colleges. Retrieved from ERIC database (19920901). <http://ericae.net/edo/ed348128.htm>
- Lai, E. R. (2011). Critical thinking: A literature review research report.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded source book* (2nd ed.). Thousand Oaks, CA: Sage.
- Neale, P., Thapa, S., & Boyce, C. (2006). *Preparing a case study: a guide for designing and conducting a case study for evaluation input*. Research Report, Pathfinder Publications.
- Nickerson, R. S. (1987). Why Teach Thinking? In Baron, J.B. & Sternberg, R.J. (Eds.), *Teaching thinking skills: Theory and practice* (pp. 27-37). New York: W.H. Freeman & Company.
- Reed, J. H. (1998). Effect of a model for critical thinking on student achievement in primary source document analysis and interpretation, argumentative reasoning, critical thinking dispositions, and history content in a community college history course. (Unpublished doctoral dissertation). University of Florida, Florida, U.S.A.
- Paul, R., Elder, L., & Bartell, T. (1997). A brief history of the idea of critical thinking. Retrieved from <http://www.criticalthinking.org/aboutCT/briefHistoryCT.cfm>
- Szabo, Z., & Schwartz, J. (2010). Using blogs to support teaching and learning in pre-service teacher education. Presentation at the 9th Annual Hawaii International Conference on Social Sciences, U.S.A.
- Wantz, R., Firmin, M., Johnson, C., & Firmin, R. (2006). University student perceptions of high school counselors. In M. Firmin & P. Brewer. (Eds.), *Ethnographic and qualitative research in education: Vol. 2* (pp. 171-184). New Castle, UK: Cambridge Scholars Press.
- Watson, G., & Glaser, E. M. (1964). *Watson-Glaser critical thinking appraisal manual*. San Antonio: The Psychological Corporation: Harcourt Brace Jovanovich, Inc.
- Wilks, S. (1995). *Critical & creative thinking. Strategies for Classroom Inquiry*. South Yarra, Victoria: Eleanor Curtain Publishing.